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GRADE

6

Math

Reading

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Thinking Kids™
Carson-Dellosa Publishing LLC
Greensboro, North Carolina

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Carson-Dellosa Publishing LLC
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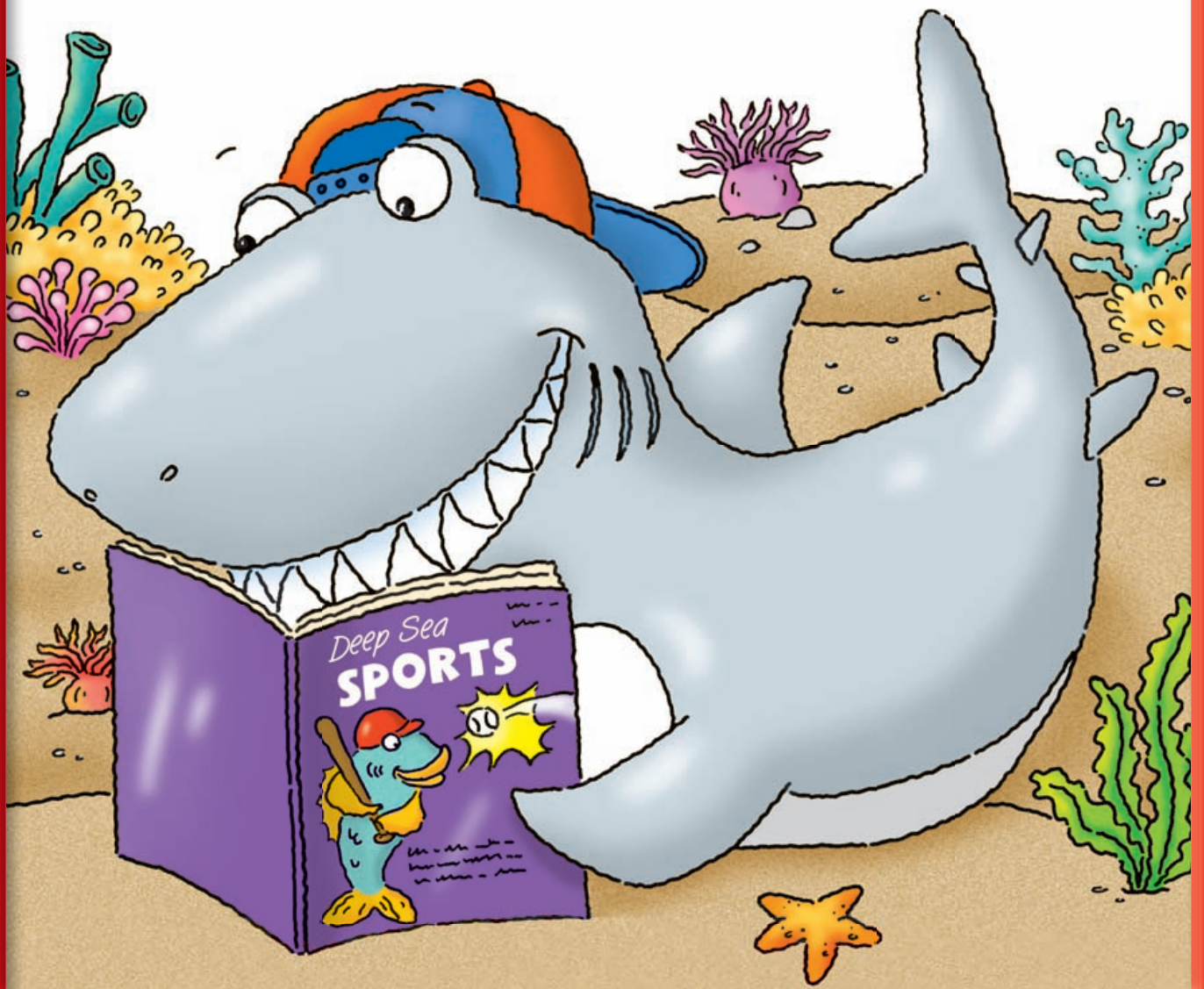
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READING



Spelling: Words with ā

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

1. favorite _____

2. gable _____

3. dangerous _____

4. patient _____

5. lakefront _____

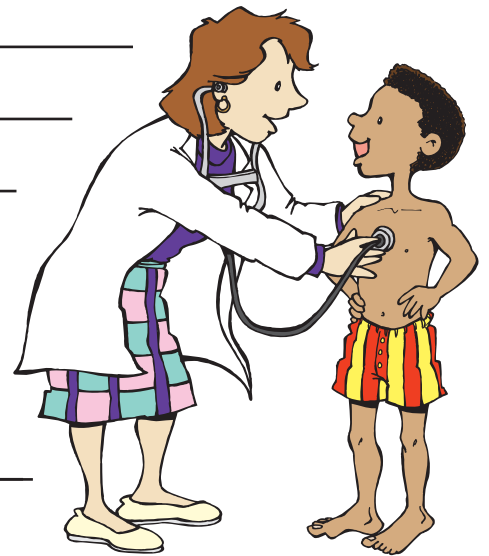
6. statement _____

7. nation _____

8. negotiated _____

9. operate _____

10. decade _____



Directions: Write the answers.

11. Which word means "a 10-year period"? _____

12. Which word means "a triangle-shaped end of a building's roof"? _____

13. Which word means "arbitrated"? _____

Spelling: Words with ē

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

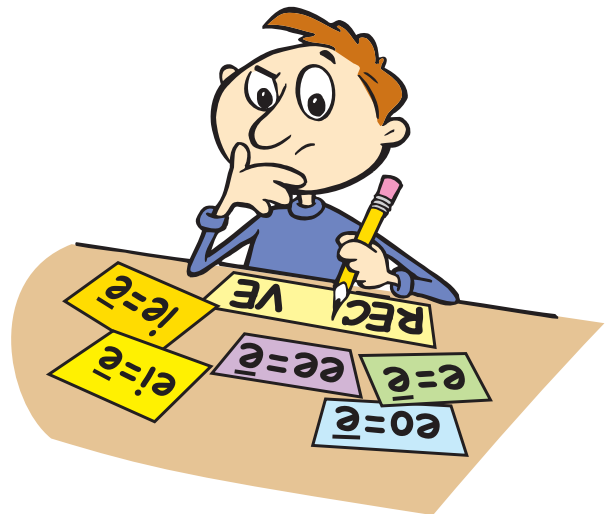
1. niece _____
2. meaningful _____
3. conceited _____
4. baleen _____
5. field _____
6. disease _____
7. reactivate _____
8. peony _____
9. seafaring _____
10. theme _____

Directions: Write the answers.

11. Which word is a summer-blooming flower?

12. Which word is a type of whale?

13. Which word is an illness?



Spelling: Words with *i*

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

1. bisect _____
2. identify _____
3. frightened _____
4. glider _____
5. idol _____
6. library _____
7. pipeline _____
8. hieroglyphic _____
9. rhinoceros _____
10. silent _____

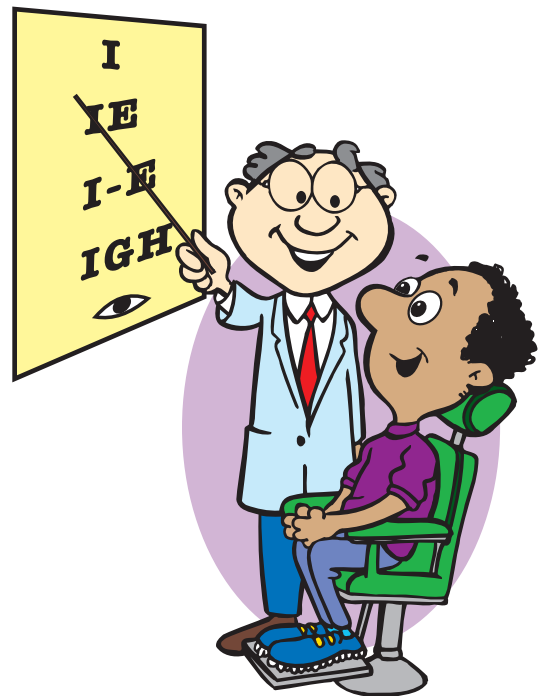
Directions: Write the answers.

11. Which word means "to be scared"?

12. Which word means "to divide into two sections"?

13. Which word is an animal?

14. Which word is a type of ancient writing?



Spelling: Words with o

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

1. clothing _____
2. slogan _____
3. total _____
4. stethoscope _____
5. voltage _____
6. stereo _____
7. protein _____
8. negotiate _____
9. locust _____
10. locomotive _____

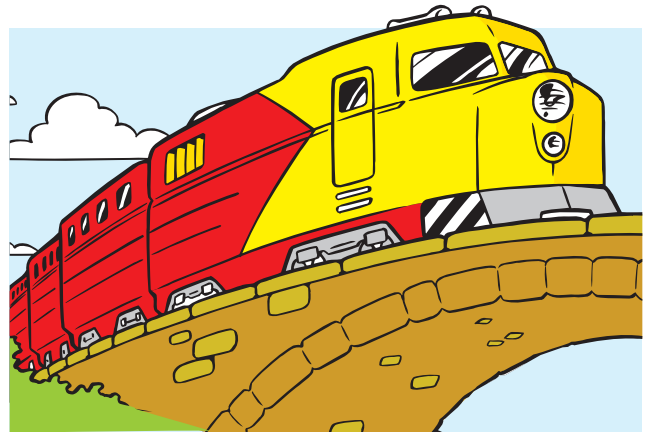
Directions: Write the answers.

11. Which word is an insect?

12. Which word means "a train"?

13. Which word means "a listening device to hear the heart"?

14. Which word means "to bargain"?



Spelling: Words with *ū*

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

1. universe _____
2. cruise _____
3. absolute _____
4. influence _____
5. unanimous _____
6. vacuum _____
7. putrid _____
8. incubate _____
9. peruse _____
10. numerous _____

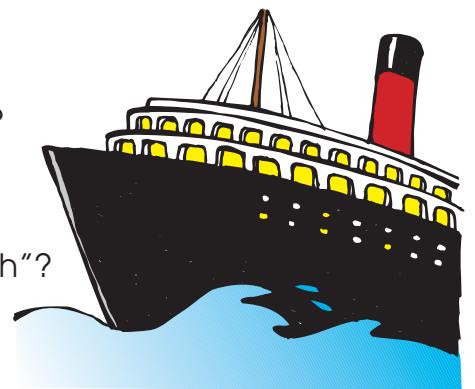
Directions: Write the answers.

11. Which word means "to read carefully"?

12. Which word means "everyone is in agreement"?

13. Which word means "a sea voyage taken for pleasure"?

14. Which word means "to keep eggs warm until they hatch"?



Spelling: / Before E, Except After C

Use an **i** before **e**, except after **c**, or when **e** and **i** together sound like long **a**.

Examples:

relieve
deceive
neighbor

Exceptions: weird, foreign, height, seize

Directions: Write **C** in the blank if the word in bold is spelled correctly. Write **X** in the blank if it is spelled incorrectly. The first one has been done for you.

- C 1. They stopped at the crossing for the **freight** train.
- ___ 2. How much does that **wiegh**?
- ___ 3. Did you **believe** his story?
- ___ 4. He **recieved** an A on his paper!
- ___ 5. She said it was the **nieghborly** thing to do.
- ___ 6. The guards **seized** the package.
- ___ 7. That movie was **wierd**!
- ___ 8. Her **hieght** is five feet, six inches.
- ___ 9. It's not right to **deceive** others.
- ___ 10. Your answers should be **breif**.
- ___ 11. She felt a lot of **grief** when her dog died.
- ___ 12. He is still **greiving** about his loss.
- ___ 13. Did the police catch the **thief**?
- ___ 14. She was their **cheif** source of information.
- ___ 15. Can you speak a **foreign** language?

i before e,
except after c,
or when sounding like a,
as in **neighbor** and **weigh**



Spelling: Words with *ie* and *ei*

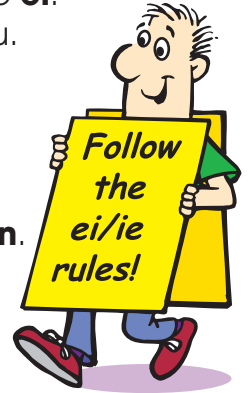
Many people have trouble remembering when to use **ie** and when to use **ei**. The following rules have many exceptions, but they may be helpful to you.

Rule 1: If the two letters are pronounced like **ē** and are preceded by an **s** sound, use **ei**, as in **receive**.

Rule 2: If the two letters are pronounced like **ē** but are not preceded by an **s** sound, use **ie** as in **believe**.

Rule 3: If the two letters are pronounced like **ā**, use **ei** as in **eight** and **vein**.

Rule 4: If the two letters are pronounced like **ī**, use **ei** as in **height**.



The sound **s** could be produced by the letter **s** as in **single** or the letter **c** as in **cease**.

Directions: Write the words from the box on the lines after the spelling rule that applies.

veil	brief	deceive	belief	niece
reindeer	yield	achieve	height	neighbor
grief	ceiling	weight	vein	seize

Rule 1: _____

Rule 2: _____

Rule 3: _____

Rule 4: _____

Directions: Complete the sentences with words that have the vowel sound shown. Use each word from the box only once.

1. My next-door (**ā**) _____ wore a long (**ā**) _____ at her wedding.
2. Will the roof hold the (**ā**) _____ of Santa's (**ā**) _____ ?
3. My nephew and (**ē**) _____ work hard to (**ē**) _____ their goals.
4. I have a strong (**ē**) _____ they would never (**ē**) _____ me.
5. For a (**ē**) _____ moment, I thought Will would (**ē**) _____ the game to me.
6. The blood rushed through my (**ā**) _____ .
7. What is the (**ī**) _____ of this (**ē**) _____ ?

Spelling: Words with *ûr* and *ôr*

The difference between **ûr** and **ôr** is clear in the words **fur** and **for**. The **ûr** sound can be spelled **ur** as in **fur**, **our** as in **journal**, **er** as in **her**, and **ear** as in **search**.

The **ôr** sound can be spelled **or** as in **for**, **our** as in **four**, **oar** as in **soar**, and **ore** as in **more**.

Directions: Write the words from the box on the lines to match the sounds.

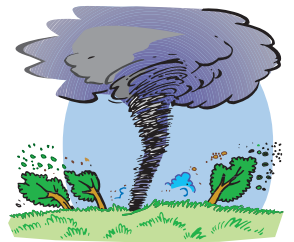
florist	plural	ignore	courtesy	observe
survey	research	furnish	normal	emergency
tornado	coarse	flourish	source	restore

ûr _____

ôr _____

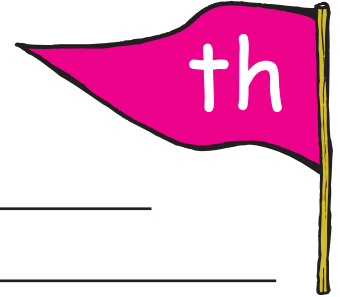
Directions: Complete the sentences with words that have the sound shown. Use each word only once.

1. We all get along better when we remember to use (**ûr**) _____.
2. My brother likes flowers and wants to be a (**ôr**) _____.
3. What was the (**ôr**) _____ of the (**ûr**) _____ for your report?
4. He waved at her, but she continued to (**ôr**) _____ him.
5. For a plural subject, use a (**ûr**) _____ verb.
6. Beneath the dark clouds, a (**ôr**) _____ formed!
7. Firefighters are used to handling an (**ûr**) _____.
8. When will they be able to (**ôr**) _____ our electricity?
9. How are you going to (**ûr**) _____ your apartment?

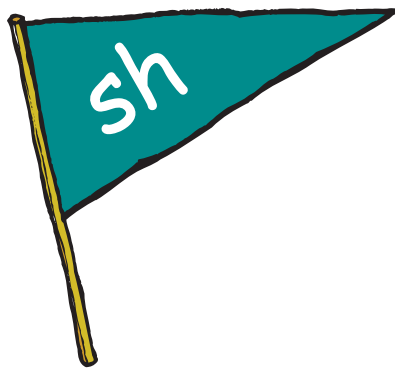


Spelling: Words Beginning with *Sh* and *Th*

Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.



- 1. shallow: _____
- 2. thimble: _____
- 3. shear: _____
- 4. sheriff: _____
- 5. thermal: _____
- 6. throttle: _____
- 7. shingle: _____
- 8. shabby: _____
- 9. thrifty: _____
- 10. shoreline: _____
- 11. threaten: _____
- 12. thyroid: _____



Directions: Use two of the above words in sentences.

- 13. _____

- 14. _____

Spelling: Words Beginning with *Ch*

Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.

1. chimney: _____
2. china: _____
3. cheetah: _____
4. charity: _____
5. channel: _____
6. chandelier: _____
7. challenge: _____
8. chairman: _____
9. champion: _____
10. cheddar: _____
11. chime: _____
12. chisel: _____

Directions: Write the answers.

13. Which word is a tool for shaping wood?

14. Which word is a type of cheese?

15. Which word is an animal?



Spelling: The Letter Q

In English words, the letter **q** is always followed by the letter **u**.

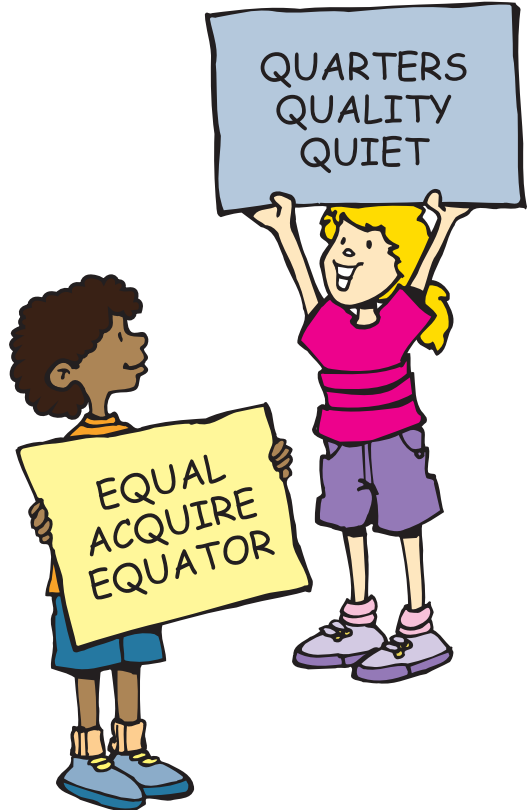
Examples:

- question
- square
- quick

Directions: Write the correct spelling of each word in the blank. The first one has been done for you.

- | | |
|---------------|-------|
| 1. qill | _____ |
| 2. equality | _____ |
| 3. qarrel | _____ |
| 4. qarter | _____ |
| 5. qart | _____ |
| 6. qibble | _____ |
| 7. qench | _____ |
| 8. qeen | _____ |
| 9. qip | _____ |
| 10. qiz | _____ |
| 11. eqipment | _____ |
| 12. qiet | _____ |
| 13. qite | _____ |
| 14. eqity | _____ |
| 15. eqator | _____ |
| 16. eqivalent | _____ |
| 17. eqitable | _____ |
| 18. eqestrian | _____ |
| 19. eqation | _____ |
| 20. qantity | _____ |

quill



Spelling: Words with *kw*, *ks*, and *gz* Sounds

The consonant **q** is always followed by **u** in words and is pronounced **kw**. The letter **x** can be pronounced **ks** as in **mix**. When **x** is followed by a vowel, it is usually pronounced **gz** as in **example**.

Directions: Write the words from the box on the lines to match the sounds shown.

expense	exist	aquarium	acquire	request	exact
expand	exit	quality	excellent	quantity	quiz
exhibit	squirm	expression			

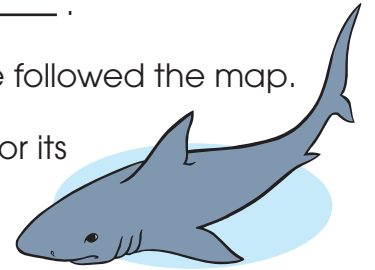
kw _____

ks _____

gz _____

Directions: Complete the sentences with words that have the sound shown. Use words from the box only once.

- We went to the zoo to see the fish (**gz**) _____.
- I didn't know its (**gz**) _____ location, so we followed the map.
- The zoo plans to (**kw**) _____ some sharks for its
(**kw**) _____.
- Taking care of sharks is a big (**ks**) _____, but a number of people
have asked the zoo to (**ks**) _____ its display of fish.
- These people want a better (**kw**) _____ of fish, not a bigger
(**kw**) _____ of them.
- I think the zoo already has an (**ks**) _____ display.
- Some of its rare fish no longer (**gz**) _____ in the ocean.



Spelling: Words with Silent Letters

Some letters in words are not pronounced, like the **b** in **crumb**, the **l** in **yolk**, the **n** in **autumn**, the **g** in **design**, and the **h** in **hour**.

Directions: Write the words from the box on the lines to match the silent letters. Use a dictionary if you are unsure of the meaning or pronunciation of a word.

condemn	yolk	campaign	assign	salmon
hymn	limb	chalk	tomb	foreign
resign	column	spaghetti	rhythm	solemn

n _____

l _____

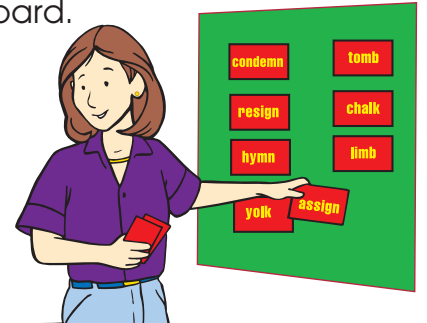
g _____

b _____

h _____

Directions: Write words from the box to complete these sentences.

1. What did the teacher (**g**) _____ for homework?
2. She put words in a (**n**) _____ on the board.
3. When she finished writing, her hands were white with (**l**) _____.
4. The church choir clapped in (**h**) _____ with the (**n**) _____.
5. While I was cracking an egg, the (**l**) _____ slipped onto the floor.
6. Did the explorers find anything in the ancient (**b**) _____?
7. My favorite dinner of all is (**h**) _____ and meatballs.
8. Do not (**n**) _____ me for making one little mistake.



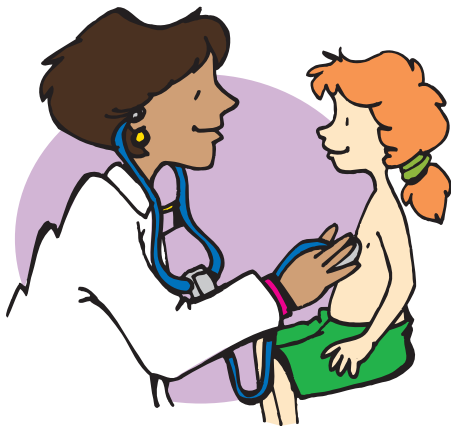
Spelling: Words with *ph* or *kn*

The letters **ph** produce the same sound as the letter **f**. When the letters **kn** are together, the **k** is silent.



Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.

1. photographer: _____
2. knowledge: _____
3. knee: _____
4. telephone: _____
5. knock: _____
6. phonics: _____
7. physician: _____
8. knife: _____
9. pharmacy: _____
10. knight: _____
11. knit: _____
12. pheasant: _____



Directions: Write the answers.

13. Which word is a place to buy medicine?

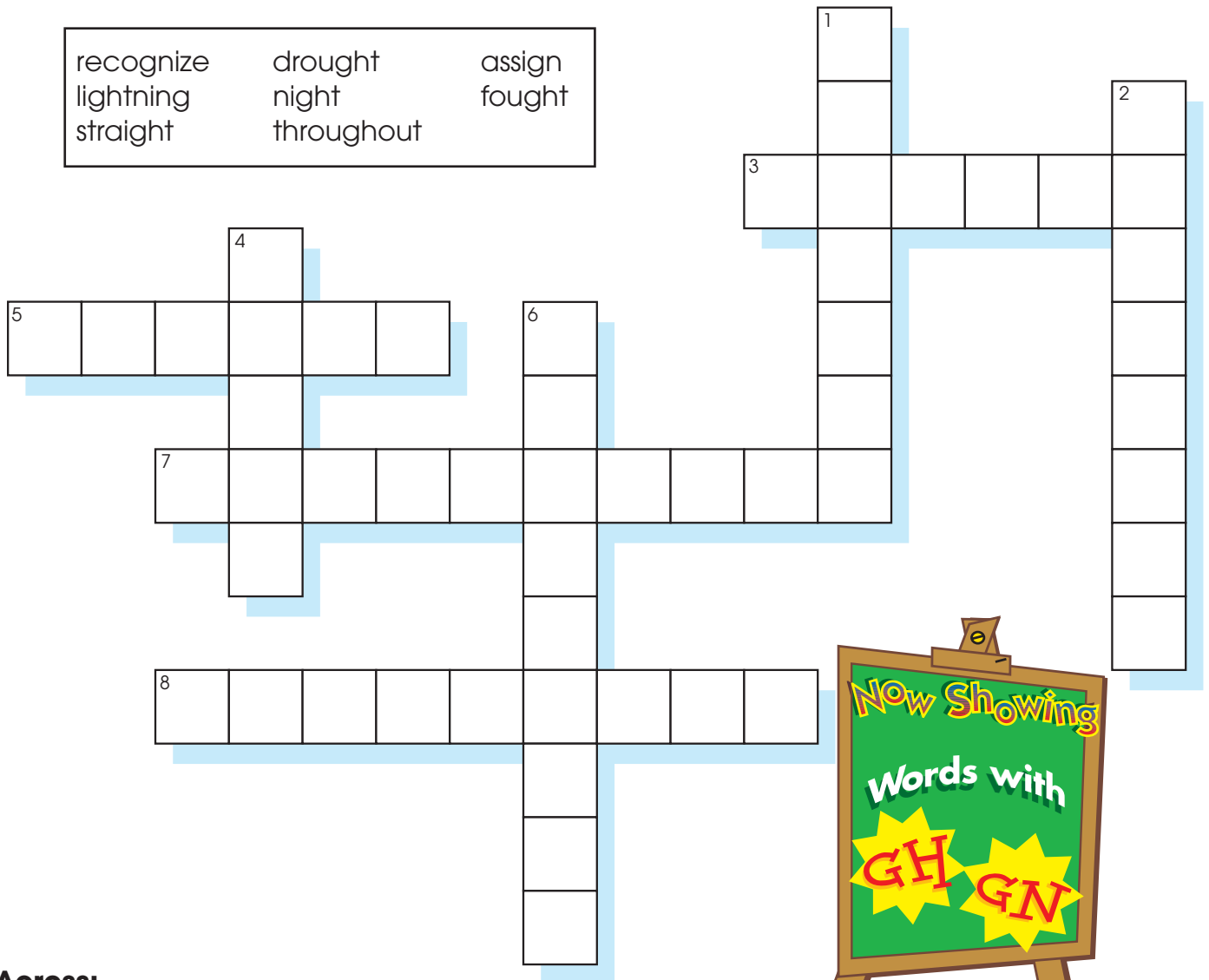
14. Which word is a synonym for **doctor**?

15. Which word names a bird?

Spelling: Words with *gh* or *gn*

Directions: Use the clues and the words in the box to complete the crossword puzzle.

recognize	drought	assign
lightning	night	fought
straight	throughout	



Across:

- 3. My siblings and I _____ occasionally while growing up.
- 5. The teacher will _____ bus seats for the field trip.
- 7. _____ the storm, the rescue squads worked without stopping.
- 8. Do you _____ the woman you are meeting for lunch?

Down:

- 1. The _____ left farmers without crops.
- 2. My brother has _____ hair, but mine is curly.
- 4. Tomorrow _____, we will leave for Florida.
- 6. _____ struck the old barn on Walnut Hill.

Root Words

A **root word** is the common stem that gives related words their basic meanings.

Example: Separate is the root word for **separately, separation, inseparable,** and **separator.**

Directions: Identify the root word in each group of words. Look up the meaning of the root word in the dictionary, and write its definition. The first one has been done for you.

1. colorless, colorful, discolor, coloration

Root word: _____ **color** _____

Definition: any coloring matter, dye,
pigment or paint

2. creator, creation, creating, creative, recreate

Root word: _____

Definition: _____

3. remove, movement, movable, immovable, removable

Root word: _____

Definition: _____

4. contentment, malcontent, discontent, discontentment

Root word: _____

Definition: _____

5. pleasure, displeasure, pleasing, pleasant, unpleasant

Root word: _____

Definition: _____

6. successor, unsuccessful, successful

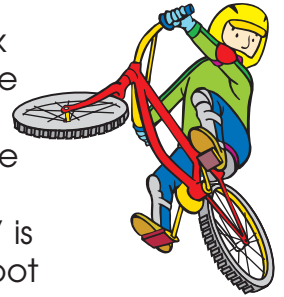
Root word: _____

Definition: _____



Greek and Latin Roots

Many word patterns in the English language are combinations of Greek or Latin words. When you know what part of a word means, you may be able to figure out the meaning of the rest of the word. For example, if **cycle** means "circle or wheel" and **bi** means "two," then you can figure out that **bicycle** means "two wheels." **Root words** are the words that longer words are based on. For example, **duct**, which means "to lead," is the root of **conduct** or **induct**. Look at the chart below. It has several root words and their meanings on it.



Root	Meaning	Example	Definition
act	to do	interact	to act with others
aqua	water	aquatint	dyed water
auto	self	automobile	to move oneself
centi	a hundred	centennial	one hundred years

Directions: Look at each word equation below. The meaning of one part is shown in parentheses. Consult the chart of root words to find the meaning of the other part. Write the meaning in the blank. Combine the two meanings. Write the dictionary definition in the space provided.

1. react re (again) + act _____ to do _____ = _____ to do again _____

Dictionary definition: To act or do again

2. automatic auto _____ + matic (having a mind) = _____

Dictionary definition: _____

3. transact trans (across) + act _____ = _____

Dictionary definition: _____

4. centimeter centi _____ + meter (meter) = _____

Dictionary definition: _____

5. aquanaut aqua _____ + naut (sailor) = _____

Dictionary definition: _____

Root Words

Root	Meaning	Example	Defintion
cede	to go	supercede	to go beyond
cept	seize	intercept	to seize during
duce	lead	deduce	to find the lead
fer	carry	interfere	to carry into
port	carry	transport	to carry across
spect	to look	inspect	to look in
tain	to hold	obtain	to gain by action
vene	to come	convene	to come to start

Directions: Complete the exercises below.

1. precede pre (before) + cede _____ to go _____ = _____ to go before _____

Dictionary definition: _____ to be, go, or come before _____

2. report re (again) + port _____ = _____

Dictionary definition: _____

3. intervene inter (between) + vene _____ = _____

Dictionary definition: _____

4. induce in (in) + duce _____ = _____

Dictionary definition: _____

5. retrospect retro (backward) + spect _____ = _____

Dictionary definition: _____

6. refer re (again) + fer _____ = _____

Dictionary definition: _____

7. retain re (again) + tain _____ = _____

Dictionary definition: _____

8. concept con (with) + cept _____ = _____

Dictionary definition: _____

Prefixes

A **prefix** is a syllable added to the beginning of a word to change its meaning. The prefix **re** means “back” or “again,” as in **return**. **Pre** means “before,” as in **prepare**. **Dis** means “do the opposite,” as in **disappear**. **In** and **im** both mean “not,” as in **impossible**. (These two prefixes also have other meanings.) **Com** and **con** both mean “with,” as in **companion** and **concert**. Use **im** and **com** with words that start with **p**, **b**, or **m**. Use **in** and **con** with words that begin with a vowel or other consonants.

Directions: Match each word from the box to its definition.

disbelieve	recite	connotation	impolite	preview
impatient	distrust	configuration	prevision	incomplete
invisible	dislike	confederate	recover	compassion

- | | |
|-----------------------------------|----------------------|
| 1. share another’s feelings _____ | 9. ally _____ |
| 2. not finished _____ | 10. hate _____ |
| 3. another meaning _____ | 11. look at _____ |
| 4. become normal again _____ | 12. rude _____ |
| 5. take away confidence _____ | 13. in a hurry _____ |
| 6. look to the future _____ | 14. doubt _____ |
| 7. arrangement of parts _____ | 15. not seen _____ |
| 8. say from memory _____ | |

Directions: Add the rest of the word to each prefix in these sentences. Use words from the box only once. Be sure to use the correct form of the word.



16. When he re_____ from his cold, Jeff was im_____ to get back to work.
17. Jonah stared at the ghostly figure with dis_____ and dis_____.
18. I’d like to re_____ that poem, but my memory of it is in_____.
19. She was very im _____ during the movie pre_____.

Prefixes

A **prefix** is a syllable added to the beginning of a word that changes its meaning. The prefixes **in**, **il**, **ir**, and **im** all mean “not.”

Directions: Create new words by adding **in**, **il**, **ir**, or **im** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.



Prefix	Root Word	New Word
1. <u>il</u>	+ logical	= <u>illogical</u>
2. _____	+ literate	= _____
3. _____	+ patient	= _____
4. _____	+ probable	= _____
5. _____	+ reversible	= _____
6. _____	+ responsible	= _____
7. _____	+ active	= _____
8. _____	+ moral	= _____
9. _____	+ removable	= _____
10. _____	+ legible	= _____
11. _____	+ mature	= _____
12. _____	+ perfect	= _____

Prefixes

The prefixes **un** and **non** also mean "not."

Examples:

Unhappy means "not happy."

Nonproductive means "not productive."

Directions: Divide each word into its prefix and root word. The first one has been done for you.



	Prefix	Root Word
1. unappreciated	un	appreciate
2. unlikely	_____	_____
3. unkempt	_____	_____
4. untimely	_____	_____
5. nonstop	_____	_____
6. nonsense	_____	_____
7. nonprofit	_____	_____
8. nonresident	_____	_____

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

9. She didn't reside at school. She was a nonresident.
10. He couldn't stop talking. He talked _____.
11. The company did not make a profit. It was a _____ company.
12. She was not talking sense. She was talking _____.
13. He visited at a bad time. His visit was _____.
14. No one appreciated his efforts. He felt _____.
15. He did not "keep up" his hair. His hair was _____.
16. She was not likely to come. Her coming was _____.

Prefixes

The prefixes **co**, **col**, **com**, **con**, and **cor** mean “with” or “together.” The prefixes **anti**, **contra**, and **ob** mean “against.”

Directions: Write each word’s prefix and root word in the space provided.

Word	Prefix	Root Word
coexist	_____co_____	_____exist_____
concurrent	_____	_____
correlate	_____	_____
codependent	_____	_____
antigravity	_____	_____
contraband	_____	_____

Directions: Use the words from the chart above to complete the sentences.

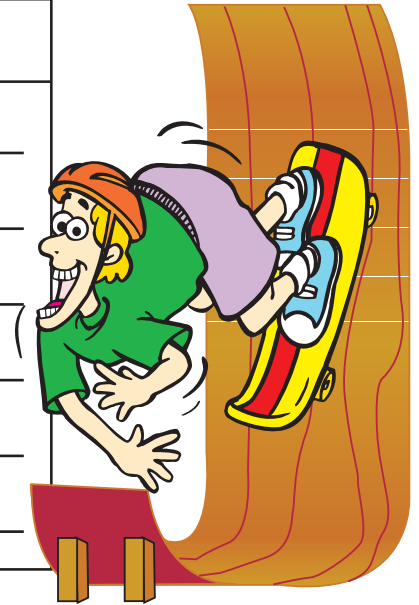
- When airplanes fly very high and then quickly drop down, they cause an _____ effect.
- Materials that are illegal are called _____.
- A dog and a cat can _____ in the same house if they get along well.
- Events that happen at the same time are _____.
- When two people rely on each other, they are said to be _____.
- The textbook will _____ with the teacher’s lectures.

Prefixes

The prefixes **epi**, **hyper**, **over**, and **super** mean “above” or “over.” The prefixes **under** and **sub** mean “under.”

Directions: Write each word’s prefix and root word in the space provided.

Word	Prefix	Root Word
hyperactive	_____ hyper _____	_____ active _____
overanxious	_____	_____
superimpose	_____	_____
epilogue	_____	_____
underestimate	_____	_____
subordinate	_____	_____



Directions: Use the words above to complete the following sentences.

1. A photographer could _____ one image on top of another.
2. The _____ of the book may tell additional information about the story.
3. All the other children settled down for the night except the boy who was _____ .
4. He could not sleep because he was _____ about the upcoming trip.
5. The company’s president told his _____ to take over some of the responsibilities.
6. Just because you think you are weak, don’t _____ how strong you could be.

Numerical Prefixes

Some prefixes are related to numbers. For example, in Latin **uni** means “one.” The prefix **mono** means “one” in Greek. The chart below lists prefixes for numbers one through ten from both the Latin and Greek languages.

Number	Latin	Example	Greek	Example
1	uni	university	mon, mono	monopoly
2	du	duplex	di	digress
3	tri	tricycle	tri	trio
4	quad	quadrant	tetro	tetrameter
5	quin	quintuplets	penta	pentagon
6	sex	sexennial	hex	hexagon
7	sept	septuagenarian	hept	heptagon
8	oct	octopus	oct	octagon
9	nov	novena	enne	ennead (group of nine)
10	dec	decade	dec	decimal

Directions: Complete the exercises below.

1. unicycle uni _____ + cycle (wheel) = _____

Dictionary definition: _____

2. monogram mono _____ + gram (writing) = _____

Dictionary definition: _____

3. sextet sex _____ + tet (group) = _____

Dictionary definition: _____

4. quadrant quad _____ + rant (part) = _____

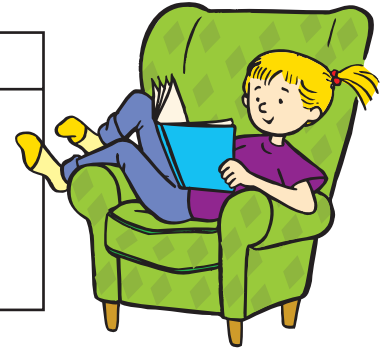
Dictionary definition: _____

5. decigram dec _____ + gram (gram) = _____

Dictionary definition: _____

Review

Roots	Meanings	Prefixes	Meanings
fer	carry	dis	separate
graph	write	epi	upon, above
rupt	break	ex	out
tend	stretch	in	in
vade	go	trans	across



Directions: Complete the exercises below.

1. invade in _____ + vade _____ = _____

Dictionary definition: _____

2. disrupt dis _____ + rupt _____ = _____

Dictionary definition: _____

3. transfer trans _____ + fer _____ = _____

Dictionary definition: _____

4. extend ex _____ + tend _____ = _____

Dictionary definition: _____

5. epigraph epi _____ + graph _____ = _____

Dictionary definition: _____

Directions: The prefixes **mono** and **uni** both mean "one." Write each word's prefix and root in the space provided.

Word	Prefix	Root
monorhyme	_____	_____
monosyllable	_____	_____
unilingual	_____	_____
uniparental	_____	_____
unilateral	_____	_____

Suffixes

A **suffix** is a syllable added to the end of a root word that changes its meaning.

When a word ends in silent **e**, keep the **e** before adding a suffix beginning with a consonant.

Example: amuse + ment = amusement

Exception: argue + ment = argument

When a word ends in silent **e**, drop the **e** before adding a suffix beginning with a vowel.

Example: amuse = amusing

Exceptions: hoeing, shoeing, canoeing



Directions: Write **C** on the blank if the word in bold is spelled correctly. Write **X** in the blank if it is spelled incorrectly. The first one has been done for you.

- C 1. She was a woman of many **achievements**.
2. He hated to hear their **arguments**.
3. Do you want to go **canoeing**?
4. He kept **urging** her to eat more dessert.
5. She was not good at **deceiving** others.
6. He **rarely** skipped lunch.
7. Would you repeat that **announcment**?
8. Bicycle **safety** was very important to him.
9. Their constant **argueing** got on my nerves.
10. He found that **shoeing** horses was not easy.
11. The sun felt hot as they were **hoeing**.
12. She was so **relieveed** that she laughed.

Suffixes: Words Ending in Y

If a word ends in a vowel and **y**, keep the **y** when you add a suffix.

Example:

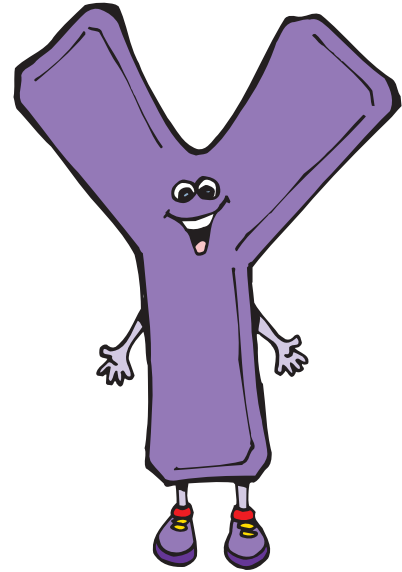
bray + ed = brayed
bray + ing = braying

Exception: lay + ed = laid

If a word ends in a consonant and **y**, change the **y** to **i** when you add a suffix, unless the suffix begins with **i**.

Example:

baby + ed = babied
baby + ing = babying



Directions: Write **C** in the blank if the word in bold is spelled correctly. Write **X** if it is spelled incorrectly. The first one has been done for you.

- C 1. She was a good student who did well at her **studies**.
- 2. Will you please stop **babiing** him?
- 3. She **layed** her purse on the couch.
- 4. Both the **ferrys** left on schedule.
- 5. Could you repeat what he was **saying**?
- 6. He was **triing** to do his best.
- 7. How many **cherries** are in this pie?
- 8. The cat **stayed** away for two weeks.
- 9. He is **saveing** all his money.
- 10. The lake was **muddier** than I remembered.
- 11. It was the **muddiest** lake I've ever seen!
- 12. Her mother **babied** her when she was sick.

Suffixes: Doubling Final Consonants

If a one-syllable word ends in one vowel and consonant, double the last consonant when you add a suffix that begins with a vowel.

Examples: swim + ing = swimming big + er = bigger

Directions: Add the suffixes shown to the root words, doubling the final consonants when appropriate. The first one has been done for you.

- | | | | | |
|------------|---|-----|---|-----------------|
| 1. brim | + | ing | = | <u>brimming</u> |
| 2. big | + | est | = | _____ |
| 3. hop | + | ing | = | _____ |
| 4. swim | + | er | = | _____ |
| 5. thin | + | er | = | _____ |
| 6. spin | + | ing | = | _____ |
| 7. smack | + | ing | = | _____ |
| 8. sink | + | ing | = | _____ |
| 9. win | + | er | = | _____ |
| 10. thin | + | est | = | _____ |
| 11. slim | + | er | = | _____ |
| 12. slim | + | ing | = | _____ |
| 13. thread | + | ing | = | _____ |
| 14. thread | + | er | = | _____ |
| 15. win | + | ing | = | _____ |
| 16. sing | + | ing | = | _____ |
| 17. stop | + | ing | = | _____ |
| 18. thrill | + | ing | = | _____ |
| 19. drop | + | ed | = | _____ |
| 20. mop | + | ing | = | _____ |

Suffixes: Doubling Final Consonants

When two-syllable words have the accent on the second syllable and end in a consonant preceded by a vowel, double the final consonant to add a suffix that begins with a vowel.

Examples: occur + ing = occurring occur + ed = occurred

If the accent shifts to the first syllable when the suffix is added to the two-syllable root word, the final consonant is not doubled.

Example: refer + ence = reference

Directions: Say the words listed to hear where the accent falls when the suffix is added. Then, add the suffix to the root word, doubling the final consonant when appropriate. The first one has been done for you.

- | | | | | |
|-------------|---|------|---|-------------------|
| 1. excel | + | ence | = | <u>excellence</u> |
| 2. infer | + | ing | = | _____ |
| 3. regret | + | able | = | _____ |
| 4. control | + | able | = | _____ |
| 5. submit | + | ing | = | _____ |
| 6. confer | + | ing | = | _____ |
| 7. refer | + | al | = | _____ |
| 8. differ | + | ing | = | _____ |
| 9. compel | + | ing | = | _____ |
| 10. commit | + | ed | = | _____ |
| 11. regret | + | ing | = | _____ |
| 12. depend | + | able | = | _____ |
| 13. upset | + | ing | = | _____ |
| 14. propel | + | ing | = | _____ |
| 15. repel | + | ed | = | _____ |
| 16. prefer | + | ing | = | _____ |
| 17. prefer | + | ence | = | _____ |
| 18. differ | + | ence | = | _____ |
| 19. refer | + | ing | = | _____ |
| 20. control | + | ing | = | _____ |



Suffixes

A **suffix** is a syllable added to the end of a word that changes its meaning. Some suffixes change nouns into adjectives.

Examples: fool — **foolish** nation — **national**

Other suffixes change adjectives into adverbs.

Examples: foolish — **foolishly** national — **nationally**

Directions: Match the root words with words from the box.

personal	stylish	obviously	professional
typical	childish	practical	medical
permanently	ticklish	additional	critical
gradually	physical	musical	



- | | | |
|-----------------|--------------------|-------------------|
| 1. tickle _____ | 6. grade _____ | 11. type _____ |
| 2. critic _____ | 7. practice _____ | 12. music _____ |
| 3. add _____ | 8. physician _____ | 13. style _____ |
| 4. person _____ | 9. permanent _____ | 14. obvious _____ |
| 5. child _____ | 10. medic _____ | 15. profess _____ |

Directions: Circle the word or words in each sentence that are a synonym for a word from the box. Write the word from the box on the line. The first one has been done for you.

16. Knowing how to cook is a useful skill. practical
17. The lake slowly warmed up. _____
18. Clearly, I should have stayed on the path. _____
19. That is a fashionable outfit. _____
20. Wanting your own way all the time is for little kids. _____
21. Getting lost is common for me. _____
22. My grades are a private matter. _____

Suffixes: *ion*, *tion*, and *ation*

The suffixes **ion**, **tion**, and **ation** change verbs into nouns.

Examples: imitate + **ion** = **imitation** combine + **ation** = **combination**



Directions: Match each word from the box with its definition.

celebration	solution	imitation	exploration	selection
reflection	conversation	population	invitation	suggestion
combination	decoration	appreciation	definition	transportation

- | | | | |
|-----------------|-------|------------------|-------|
| 1. a copy | _____ | 9. choice | _____ |
| 2. talking | _____ | 10. a party | _____ |
| 3. a request | _____ | 11. the answer | _____ |
| 4. the meaning | _____ | 12. people | _____ |
| 5. a search | _____ | 13. a joining | _____ |
| 6. mirror image | _____ | 14. new idea | _____ |
| 7. cars, trucks | _____ | 15. thankfulness | _____ |
| 8. ornament | _____ | | |

Directions: Write the correct forms of the words in the sentences. The first one has been done for you.



16. **transport** How are we transporting our project to school?
 Did anyone arrange transportation ?
17. **decorate** Today, we are _____ the classroom.
 We brought the _____ from home.
18. **solve** Have you _____ the problem yet?
 We need a _____ by the end of the day.



Suffixes: *ment* and *ity*

The suffixes **ment** and **ity** change verbs and some adjectives to nouns.

Examples: treat — **treatment** able — **ability**



Directions: Circle the word or words in each sentence that are synonyms for words from the box. Write the word from the box on the line. The first one has been done for you.

equipment	responsibility	activity	
accomplishment	adjustment	ability	treatment
assignment	personality	achievement	appointment
popularity	astonishment	advertisement	curiosity

- The workers are bringing in their (machines.) equipment
- Whose duty is it to take out the trash? _____
- Do you know our homework for tonight? _____
- I could see the surprise in his face. _____
- Ken is happy with his new position. _____
- I was filled with wondering. _____
- She lists one achievement in particular. _____
- Look at the exercise on page 16. _____
- The way you get along with others is part of your character. _____
- I heard that commercial a hundred times. _____
- Linh has a strong athletic skill. _____
- Jason's kindness led to his acceptance by his friends. _____
- I need to make a change in my schedule. _____
- That is quite an accomplishment! _____
- The doctor is trying another way to help my allergies. _____

Suffixes: *less* and *some*

The suffix **less** means “lacking” or “without.” The suffix **some** means “full” or “like.”

Examples:

Hopeless means “without hope.”

Awesome means “filled with awe.”



Directions: Create new words by adding **some** or **less** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.

Root Word		Suffix		New Word
1. heart	+	less	=	heartless
2. trouble	+	_____	=	_____
3. home	+	_____	=	_____
4. humor	+	_____	=	_____
5. awe	+	_____	=	_____
6. child	+	_____	=	_____
7. win	+	_____	=	_____

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

8. Her smile was winning and delightful. She had a winsome smile.
9. The mean man seemed to have no heart. He was _____
10. She never smiled or laughed. She appeared to be _____
11. The solar system fills me with awe. It is _____
12. The couple had no children. They were _____
13. He had no place to live. He was _____
14. The pet caused the family trouble. It was _____

Suffixes: *ship*, *ful*, and *ist*

Directions: Write the meaning of each word on the line. Use a dictionary if you are unsure of the meaning of a word.

1. biologist: _____

2. citizenship: _____

3. companionship: _____

4. archaeologist: _____

5. typist: _____

6. scholarship: _____

7. doubtful: _____

8. hopeful: _____

9. dictatorship: _____

10. chemist: _____

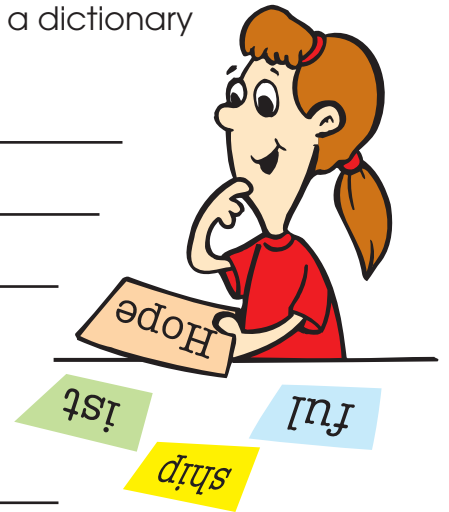
11. principalship: _____

12. artist: _____

13. spiteful: _____

14. professorship: _____

15. geologist: _____



Suffixes: *ance* and *ence*

Directions: Write words from the box to complete the sentences. Use a dictionary if you are unsure of the meaning of a word.



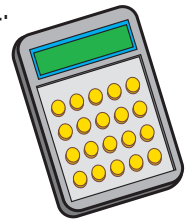
ance

performance	experience
correspondence	reliance
evidence	sequence
maintenance	absence
dependence	insurance



ence

- The daycare position required _____ working with children.
- During her _____, a friend phoned each night with homework assignments.
- My grandmother is known for her self-_____.
- The alphabet is a _____ of 26 letters.
- A letter to my penpal is called long distance _____.
- The circus advertised a 2:00 P.M. _____.
- Many people have a great _____ on calculators for math.
- Fortunately, most homeowners in the flooded area carried _____.
- The police gathered _____ in hopes of solving the burglary.
- _____ of football and baseball fields requires much time and effort.



Suffixes: *ment*, *ible*, and *able*

The suffix **ment** means “the act of” or “state of.” The suffixes **ible** and **able** mean “able to.”

Directions: Create new words by adding **ment**, **able**, or **ible** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.

Root Word		Suffix		New Word
1. rely	+	able	=	reliable
2. retire	+	_____	=	_____
3. sense	+	_____	=	_____
4. commit	+	_____	=	_____
5. repair	+	_____	=	_____
6. love	+	_____	=	_____
7. quote	+	_____	=	_____
8. honor	+	_____	=	_____

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

9. Everyone loved her. She was loveable (also lovable).
10. He had a lot of sense. He was _____.
11. She committed time to the project. She made a _____.
12. He always did the right thing. His behavior was _____.
13. The tire could not be fixed. It was not _____.
14. They would not buy the car. The car was not _____.
15. He gave the reporter good comments. His comments were _____.
16. She was ready to retire. She looked forward to _____.

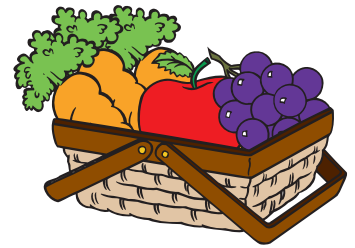
Review

Directions: Add one of the prefixes, suffixes, or combining forms to a word in the box to complete each sentence. Use the definition in parentheses as a clue.

ian ous ship an ist extra trans pre micro super

friend	music	geology	sensory	America
paid	wave	market	atlantic	danger

- The _____ has a huge selection of fruits and vegetables. (large food store)
- The first _____ flight was a remarkable feat in the history of aviation. (across the Atlantic Ocean)
- The woman claimed that she knew the future because of her _____ capabilities. (beyond the normal senses)
- When mailing your payment, please use the _____ envelope. (paid in advance)
- Mrs. Johnson studied the violin for many years to become the accomplished _____ she is today. (person skilled in music)
- The _____ oven is a modern-day convenience. (operating with extremely small electromagnetic waves)
- Lightning is the most _____ part of a storm. (characterized by danger)
- They raised the _____ flag over their campground in a gesture of patriotism. (belonging to America)
- Olivia and I stick together through good times and bad times because we value our _____. (the state of being friends)
- Dr. Stokes is the finest _____ at the university. (one who is skilled at geology, the study of the earth’s crust)



Review

Directions: Add suffixes to change these nouns into adjectives.

1. person _____ music _____ child _____



Directions: Add suffixes to change these adjectives into adverbs.

2. permanent _____ obvious _____ gradual _____

Directions: Add the prefix **pre**, **un**, **in**, **re**, or **con** to each word, and use the word in a sentence.

3. search _____

4. join _____

5. compatible _____

6. wrap _____

7. school _____

Directions: Add the suffix **ish**, **ment**, **ion**, **ship**, or **ful** to each word, and use the word in a sentence.

8. square _____

9. invent _____

10. force _____

11. replace _____

12. chairman _____

Directions: Add suffixes to make the noun forms of these verbs.

13. select _____ 16. imitate _____

14. decorate _____ 17. reflect _____

15. invite _____

Review

Directions: Spell these silent **e** words correctly.

- 1. achievements _____
- 2. canoing _____
- 3. amuseing _____
- 4. urgeing _____

Directions: Add the suffixes to these words ending in **y**, and spell them correctly.

- 5. baby + ies = _____
- 6. stay + ed = _____

Directions: Add the suffixes, and spell these two-syllable words correctly.

- 7. hope + ing = _____
- 8. stop + ing = _____

Directions: Add the suffixes, and spell these three-syllable words correctly.

- 9. recur + ing = _____
- 10. defer + ence = _____

Directions: Spell these words correctly by inserting **ie** or **ei**.

- 11. h ___ ___ ght
- 12. ch ___ ___ f

Directions: Circle the **q** words in each row that are spelled correctly.

- | | | | |
|--------------|---------|--------|-------|
| 13. quip | qeen | qick | quit |
| 14. qestion | equator | quiet | qart |
| 15. squirrel | sqare | squirm | sqeak |

Analyzing Words and Their Parts

A **syllable** is a word or part of a word with only one vowel sound.

Directions: Fill in the missing syllables. Use words from the box. Write the number of syllables after each word. The first one has been done for you.

expense	exist	aquarium	acquire	request
exact	expand	exit	quality	excellent
quiz	quantity	expression	exhibit	squirm

- | | | |
|-----------------------------|----------------------|-----------------------|
| 1. ex <u>c</u> e lent (3) | 6. ac _____ () | 11. _____ quest () |
| 2. _____ squirm () | 7. quali _____ () | 12. ex _____ it () |
| 3. _____ act () | 8. _____ it () | 13. _____ pense () |
| 4. _____ quiz () | 9. ex _____ sion () | 14. _____ pand () |
| 5. aquar _____ um () | 10. _____ ist () | 15. quan _____ ty () |

Directions: Write words that rhyme. Use the words in the box.

- | | | |
|------------------|--------------------------|----------------|
| 16. fizz _____ | 21. it's been sent _____ | 26. fire _____ |
| 17. resist _____ | 22. this is it _____ | 27. best _____ |
| 18. fact _____ | 23. made for me _____ | 28. fit _____ |
| 19. fence _____ | 24. reflection _____ | |
| 20. sand _____ | 25. worm _____ | |

A **root word** is a common stem that gives related words their basic meaning.

Directions: Write the root word for the bold word in each sentence.

29. I know **exactly** what I want. _____
30. Those shoes look **expensive**. _____
31. She didn't like my **expression** when I frowned. _____
32. We went to the train **exhibition** at the park. _____



Dividing Words into Syllables

Directions: Divide these words into syllables by putting a hyphen (-) between each syllable. The first one has done for you.

1. multiplication

mul-ti-pli-ca-tion

2. discover

3. ultimate

4. transfer

5. continent

6. follow

7. British

8. American

9. president

10. discrimination

11. spectacular

12. commercial

13. probability

14. country

15. casual

16. political

17. wrestle

18. basketball

19. particular

20. cereal

21. picture

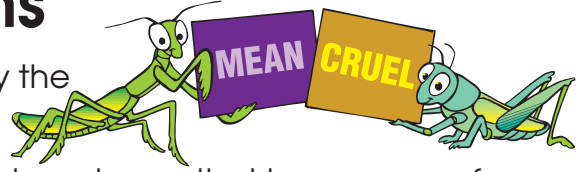
22. plumber

23. personal

24. sentence

Synonyms

A **synonym** is a word that means the same or nearly the same as another word. **Example: mean** and **cruel**



Directions: Circle the word or group of words in each sentence that is a synonym for a word in the box. Write the synonym from the box on the line. The first one has been done for you.

florist	courtesy	research	emergency	flourish
plural	observe	furnish	tornado	source
ignored	survey	normally	coarse	restore

1. The children seemed to thrive in their new school.

flourish

2. Her politeness made me feel welcome.

3. The principal came to watch our class.

4. Are you going to fix up that old house?

5. Six weeks after the disaster, the neighborhood looked as it usually did.

6. What was the origin of that rumor?

7. The cyclone destroyed two houses.

8. She neglected her homework.

9. The material had a rough feel to it.

10. Did you fill out the questionnaire yet?

Directions: Select three words from the box below. Write a sentence for each word that shows you understand the meaning of the word.

plural	flourish	source	restore	observe	furnish	research
--------	----------	--------	---------	---------	---------	----------

Antonyms

An **antonym** is a word that means the opposite of another word.

Example: **hopeful** and **discouraged**

Directions: Circle the word or group of words in each sentence that is an antonym for a word in the box. Write the antonym from the box on the line.

nuisance	considerate
delicate	frivolous
entrance	shiny
divide	parallel
success	valley



1. It seemed as though we'd never make it to the top of the butte.
2. Rosa thought the woman was rude to the store clerk.
3. The two streets run perpendicular to each other.
4. The school carnival was a total failure due to the stormy weather.
5. Be sure to wash this sturdy sweater with other heavy items.
6. The third-grade class worked hard learning to multiply.
7. The exit was blocked by a table.
8. The purchase of the coat was quite practical.
9. The teacher wrote that Colin was a joy to have in class.
10. The stone in her ring was dull and cloudy.

Spelling: Homophones

Homophones are words that sound the same but have different spellings and different meanings.

Examples: **night** and **knight**, **fair** and **fare**, not and **knot**

Directions: Complete each sentence with the correct homophone. Then, write a sentence using the other homophone. Use a dictionary if you don't know the meaning of a word. The first one has been done for you.



1. eight
ate
I ate two strawberries.
Aisha had eight strawberries.
2. vein
vain
Since the newspaper printed his picture, Cam has been self-centered and _____ .

3. weight
wait
We had to _____ a long time for the show to start.

4. weigh
way
He always insists that we do everything his _____ .

5. seize
seas
The explorers charted the _____ .

6. straight
strait
It is sometimes difficult to draw perfectly _____ lines freehand.

7. principle
principal
The _____ summoned the student body to the auditorium for a special program.

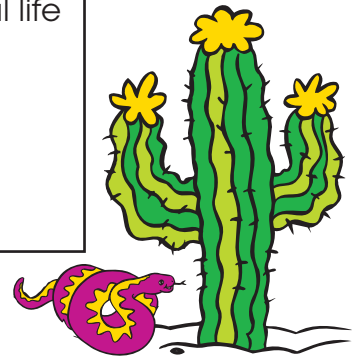
8. their
they're
I'm sure _____ meeting us at the park rather than at home.

Vocabulary Building: Homographs

A **homograph** has the same spelling as another word but a different meaning. The two words are often different parts of speech.

Directions: Write the definition from the box for the bold word in each sentence.

con' tract	n.	an agreement to do something
con tract'	v.	to reduce in size, shrink
des' ert	n.	dry land that can support little plant and animal life
de sert'	v.	to abandon
Po' lish	adj.	of or belonging to Poland
pol' ish	v.	to smooth and brighten by rubbing
proj' ect	n.	a proposal or undertaking
pro ject'	v.	to send forth in thoughts or imagination



1. Iron is one of the metals that **contracts** as it cools.

2. You will have to sign a **contract** before I can begin work on your house.

3. The **desert** seems to come to life in the evening when the animals come out in search of food.

4. I hope you will not **desert** your friends now that they really need your support.

5. She will **polish** the stone and then use it to make a necklace.

6. My grandma is going to teach me to make an authentic **Polish** meal this weekend.

7. **Project** yourself into the world of tomorrow with this amazing invention!

8. I started this **project** on Monday, but it may be weeks before I finish it.

Vocabulary Building: Homographs

Directions: After each sentence, write the meaning of the bold word. Write another sentence using a homograph for the word.

1. The owner of the pet store tied a bright red **bow** around the puppies' necks.

Meaning: _____

Sentence: _____



2. Today, fewer pipes are made from **lead**.

Meaning: _____

Sentence: _____

3. Lia's new house is very **close** to ours.

Meaning: _____

Sentence: _____

4. Please **record** the time and day that we finished the project.

Meaning: _____

Sentence: _____

5. It takes only a **minute** to fasten your seatbelt, but it can save your life.

Meaning: _____

Sentence: _____



6. I cannot **subject** the animal to that kind of treatment.

Meaning: _____

Sentence: _____

Multiple Meanings

Directions: Use a dictionary to write the meaning of the bold word in each sentence. Be sure the meaning fits the context of the sentence and the part of speech. The first one has been done for you.

1. Rosa will **graduate** *summa cum laude*.

to receive an academic degree

2. The **graduate** looked for suitable employment.

3. The woman balanced her purse on the **counter**.

4. The boss **countered** the employee's request for a large raise.

5. Julio Mentarre will **conduct** the orchestra tonight.

6. Metal **conducts** electricity.

7. His **conduct** was questionable in that situation.

8. Please **file** these reports today.

9. The principal asked the students to leave in single **file**.

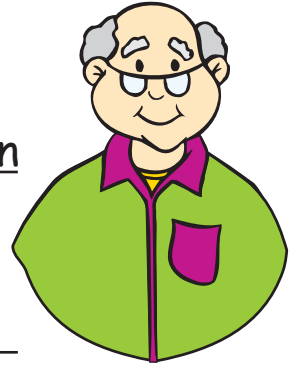
10. "Please hand me a **file**," said the woodworker to his daughter.

Vocabulary Building: Multiple Meanings

Directions: Use a dictionary to choose the correct definition for each bold word. The first one has been done for you.

1. My grandfather always has his **spectacles** perched on his nose.

Meaning: lenses worn in front of the eyes to aid vision



2. The Fourth of July fireworks display was an amazing **spectacle**.

Meaning: _____

3. We enjoy a rugged vacation, staying in a hunting **lodge** rather than a hotel.

Meaning: _____

4. Don't let the baby have hard candy, because it could **lodge** in his throat.

Meaning: _____

5. Termites will **bore** through the rotten wood in our basement if we don't have it replaced.

Meaning: _____

6. That television show could **bore** even a small child!

Meaning: _____

7. Don't **resort** to lies just to get what you want!

Meaning: _____

8. The **resort** is packed with tourists from May to September each year.

Meaning: _____

Vocabulary Building: Multiple Meanings

Directions: Read each sentence, then write another sentence using a different meaning for the bold word.



1. The prince will **succeed** his mother as ruler of the country.

2. All through the national anthem, Johnny was singing in the wrong **key**.

3. There has been only a **trace** of rain this month.

4. I can't get involved in a **cause** in which I don't really believe.

5. It is very important to get plenty of **iron** in your diet.



6. A police officer can **issue** a warning to those disturbing the peace.

7. There is a mayoral candidate from each of the major political **parties**.

8. You can take that **stack** of newspapers to be recycled.

9. The judge will likely **sentence** the offender to a year in prison.



10. The lawyer made a **motion** to have the charges dropped.

Reading Skills: Classifying

Classifying is placing similar things into categories.

Example: **January, May,** and **October** can be classified as months.

Directions: Write a category name for each group of words.

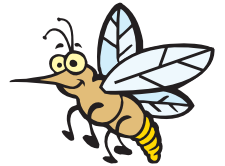
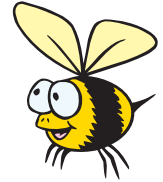
1. accordion clarinet trumpet _____

2. wasp bumblebee mosquito _____

3. antique elderly prehistoric _____

4. chemist astronomer geologist _____

5. nest cocoon burrow _____



Directions: In each row, draw an **X** through the word that does not belong. Then, write a sentence telling why it does not belong.

1. encyclopedia atlas novel dictionary

2. bass offer tuna trout

3. sister grandmother niece uncle

4. bark beech dogwood spruce

5. pebble gravel boulder cement

6. spaniel Siamese collie Doberman

Reading Skills: Classifying

Directions: In each row, draw an **X** through the word that does not belong. Then, write a word that belongs.

- | | | | | | |
|------------|---------|---------|----------|---------|-------|
| 1. monkey | lion | zebra | elephant | dog | _____ |
| 2. daisies | roses | violets | ferns | pansies | _____ |
| 3. paper | pear | pencil | eraser | stapler | _____ |
| 4. sister | cousin | father | aunt | friend | _____ |
| 5. hand | mouth | shirt | foot | elbow | _____ |
| 6. shy | cry | happy | angry | sad | _____ |
| 7. puppy | dog | kitten | cub | lamb | _____ |
| 8. red | blue | color | yellow | purple | _____ |
| 9. Earth | Jupiter | Saturn | Mars | sun | _____ |
| 10. sink | bed | desk | dresser | lamp | _____ |

Directions: Name each category above.

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Reading Skills: Classifying

Directions: Write three things that would belong in each category below. The first one has been done for you.

1. mammals

_____ whale _____ horse _____ elephant

2. rainforest animals

3. capital cities

4. oceans

5. occupations

6. Native American tribes

7. wars

8. planets

9. track and field sports

10. famous Americans

Types of Analogies

An **analogy** shows similarities, or things in common, between a pair of words. The relationships between the words in analogies usually fall into these categories:

1. **Purpose** One word in the pair shows the **purpose** of the other word (scissors: cut).
2. **Antonyms** The words are **opposites** (light: dark).
3. **Part/whole** One word in the pair is a **part**; the other is a **whole** (leg: body).
4. **Action/object** One word in the pair involves an **action** with or to an **object** (fly: airplane).
5. **Association** One word in the pair is what you think of or **associate** when you see the other (cow: milk).
6. **Object/location** One word in the pair tells the **location** of where the other word, an **object**, is found (car: garage).
7. **Cause/effect** One word in the pair tells the **cause**; the other word shows the **effect** (practice: improvement).
8. **Synonyms** The words are **synonyms** (small: tiny).

Directions: Write the relationship between the words in each pair. The first two have been done for you.

- | | |
|---------------------|-----------------|
| 1. cow: farm | object/location |
| 2. toe: foot | part/whole |
| 3. watch: TV | _____ |
| 4. bank: money | _____ |
| 5. happy: unhappy | _____ |
| 6. listen: radio | _____ |
| 7. inning: ballgame | _____ |
| 8. knife: cut | _____ |
| 9. safe: dangerous | _____ |
| 10. carrots: soup | _____ |

Writing Analogies

Once you have determined the relationship between the words in the first pair, the next step is to find a similar relationship between another pair of words.

Examples:

Scissors is to **cut** as **broom** is to **sweep**.

Black is to **white** as **up** is to **down**.

Scissors cut. Brooms sweep. The first analogy shows the purpose of scissors and brooms. In the second example, **up** and **down** are antonyms, as are **black** and **white**.



Directions: Choose the correct word to complete each analogy. The first one has been done for you.

- Sky** is to **blue** as **grass** is to _____

A. earth B. green C. lawn D. yard green
- Snow** is to **winter** as **rain** is to _____

A. umbrella B. wet C. slicker D. spring
- Sun** is to **day** as **moon** is to _____

A. dark B. night C. stars D. blackness
- 5** is to **10** as **15** is to _____

A. 50 B. 25 C. 30 D. 40
- Collie** is to **dog** as **Siamese** is to _____

A. pet B. kitten C. baby D. cat
- Letter** is to **word** as **note** is to _____

A. tuba B. music C. instruments D. singer
- 100** is to **10** as **1,000** is to _____

A. 10 B. 200 C. 100 D. 10,000
- Back** is to **rear** as **pit** is to _____

A. peach B. hole C. dark D. punishment

Analogies of Purpose

Directions: Choose the correct word to complete each analogy of purpose. The first one has been done for you.

1. **Knife** is to **cut** as **copy machine** is to
 A. duplicate B. paper C. copies D. office duplicate

2. **Bicycle** is to **ride** as **glass** is to
 A. dishes B. dinner C. drink D. break _____

3. **Hat** is to **cover** as **eraser** is to
 A. chalkboard B. pencil C. mistake D. erase _____

4. **Mystery** is to **clue** as **door** is to
 A. house B. key C. window D. open _____

5. **Television** is to **see** as **speaker** is to
 A. sound B. hear C. play D. dance _____

6. **Clock** is to **time** as **ruler** is to
 A. height B. length C. measure D. inches _____

7. **Fry** is to **pan** as **bake** is to
 A. cookies B. dinner C. oven D. baker _____

8. **Bowl** is to **fruit** as **wrapper** is to
 A. present B. candy C. paper D. ribbon _____

Antonym Analogies

Directions: Write antonyms for these words.

- | | | | |
|----------------|-------|-------------------|-------|
| 1. run: | _____ | 15. awake: | _____ |
| 2. start: | _____ | 16. begin: | _____ |
| 3. laugh: | _____ | 17. increase: | _____ |
| 4. dependent: | _____ | 18. reverse: | _____ |
| 5. young: | _____ | 19. enlarge: | _____ |
| 6. North: | _____ | 20. East: | _____ |
| 7. sink: | _____ | 21. rural: | _____ |
| 8. success: | _____ | 22. amateur: | _____ |
| 9. combine: | _____ | 23. patient: | _____ |
| 10. innocent: | _____ | 24. rich: | _____ |
| 11. polluted: | _____ | 25. empty: | _____ |
| 12. leader: | _____ | 26. fancy: | _____ |
| 13. fascinate: | _____ | 27. introduction: | _____ |
| 14. man: | _____ | 28. modern: | _____ |

Directions: Write two antonym analogies of your own.

29. _____

30. _____

Part/Whole Analogies

Directions: Determine whether each analogy is whole to part or part to whole by studying the relationship between the first pair of words. Then, choose the correct word to complete each analogy. The first one has been done for you.



hat

1. **Shoestring** is to **shoe** as **brim** is to

- A. cup B. shade C. hat D. scarf

2. **Egg** is to **yolk** as **suit** is to

- A. clothes B. shoes C. business D. jacket

3. **Stanza** is to **poem** as **verse** is to

- A. rhyme B. singing C. song D. music

4. **Wave** is to **ocean** as **branch** is to

- A. stream B. lawn C. office D. tree

5. **Chicken** is to **farm** as **giraffe** is to

- A. animal B. zoo C. tall D. stripes

6. **Finger** is to **nail** as **leg** is to

- A. arm B. torso C. knee D. walk

7. **Player** is to **team** as **inch** is to

- A. worm B. measure C. foot D. short

8. **Peak** is to **mountain** as **crest** is to

- A. wave B. ocean C. beach D. water

Action/Object Analogies

Directions: Determine whether each analogy is action/object or object/object by studying the relationship between the first pair of words. Then, choose the correct word to complete each analogy. The first one has been done for you.



- Mow** is to **grass** as **shear** is to _____

A. cut B. fleece C. sheep D. barber sheep
- Rod** is to **fishing** as **oven** is to _____

A. police B. crime C. bake D. hunting
- Ship** is to **captain** as **airplane** is to _____

A. fly B. airport C. pilot D. passenger
- Car** is to **mechanic** as **body** is to _____

A. patient B. doctor C. torso D. hospital
- Cheat** is to **exam** as **swindle** is to _____

A. criminal B. business C. crook D. crime
- Actor** is to **stage** as **surgeon** is to _____

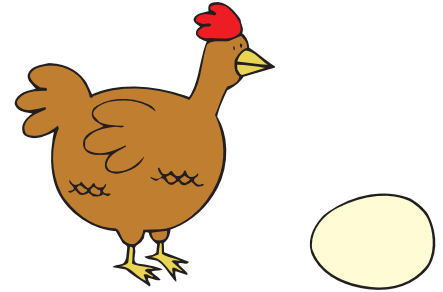
A. patient B. hospital C. operating room D. knife
- Ball** is to **throw** as **knife** is to _____

A. cut B. spoon C. dinner D. silverware
- Lawyer** is to **trial** as **surgeon** is to _____

A. patient B. hospital C. operation D. operating room

Analogies of Association

Directions: Choose the correct word to complete each analogy. The first one has been done for you.



1. **Flowers** are to **spring** as **leaves** are to
 A. rakes B. trees C. fall D. green fall
2. **Ham** is to **eggs** as **butter** is to
 A. fat B. toast C. breakfast D. spread _____
3. **Bat** is to **swing** as **ball** is to
 A. throw B. dance C. base D. soft _____
4. **Chicken** is to **egg** as **cow** is to
 A. barn B. calf C. milk D. beef _____
5. **Bed** is to **sleep** as **chair** is to
 A. sit B. couch C. relax D. table _____
6. **Cube** is to **square** as **sphere** is to
 A. circle B. triangle C. hemisphere D. spear _____
7. **Kindness** is to **friend** as **cruelty** is to
 A. meanness B. enemy C. war D. unkindness _____
8. **Pumpkin** is to **pie** as **chocolate** is to
 A. cake B. dark C. taste D. dessert _____

Object/Location Analogies

Directions: Write a location word for each object.

- | | | | |
|-----------------|-------|-----------------|-------|
| 1. shirt: | _____ | 15. dress: | _____ |
| 2. milk: | _____ | 16. ice cream: | _____ |
| 3. vase: | _____ | 17. table: | _____ |
| 4. screwdriver: | _____ | 18. medicine: | _____ |
| 5. cow: | _____ | 19. dog: | _____ |
| 6. chalkboard: | _____ | 20. basketball: | _____ |
| 7. shower: | _____ | 21. bed: | _____ |
| 8. cucumbers: | _____ | 22. roses: | _____ |
| 9. silverware: | _____ | 23. dishwasher: | _____ |
| 10. car: | _____ | 24. toys: | _____ |
| 11. pages: | _____ | 25. cookies: | _____ |
| 12. bees: | _____ | 26. bird: | _____ |
| 13. money: | _____ | 27. seashells: | _____ |
| 14. salt water: | _____ | 28. asteroids: | _____ |

Synonym Analogies

Directions: Write synonyms for these words.

- | | |
|----------------------|----------------------|
| 1. miniature: _____ | 15. gigantic: _____ |
| 2. wind: _____ | 16. rain: _____ |
| 3. picture: _____ | 17. cabinet: _____ |
| 4. quiet: _____ | 18. loud: _____ |
| 5. run: _____ | 19. leap: _____ |
| 6. cloth: _____ | 20. jeans: _____ |
| 7. mean: _____ | 21. kind: _____ |
| 8. cup: _____ | 22. dish: _____ |
| 9. sweet: _____ | 23. feline: _____ |
| 10. difficult: _____ | 24. simple: _____ |
| 11. obey: _____ | 25. beautiful: _____ |
| 12. plenty: _____ | 26. scorch: _____ |
| 13. scent: _____ | 27. story: _____ |
| 14. sudden: _____ | 28. thaw: _____ |

Directions: Write two synonym analogies of your own.

29. _____

30. _____

Reading Skills: Fact or Opinion?

A **fact** is information that can be proved. An **opinion** is information that tells how someone feels or what he or she thinks about something.

Directions: For each sentence, write **F** for fact or **O** for opinion. The first one has been done for you.

- F 1. Each of the countries in South America has its own capital.
2. All South Americans are good swimmers.
3. People like the climate in Peru better than in Brazil.
4. The continent of South America is almost completely surrounded by water.
5. The only connection with another continent is a narrow strip of land, called the Isthmus of Panama, which links it to North America.
6. The Andes Mountains run all the way down the western edge of the continent.
7. The Andes are the longest continuous mountain barrier in the world.
8. The Andes are the most beautiful mountain range.
9. The Amazon River is the second longest river in the world—about 4,000 miles long.
10. Half of the people in South America are Brazilians.
11. Life in Brazil is better than life in other South American countries.
12. Brazil is the best place for South Americans to live.
13. Cape Horn is at the southern tip of South America.
14. The largest land animal in South America is the tapir, which reaches a length of 6 to 8 feet.

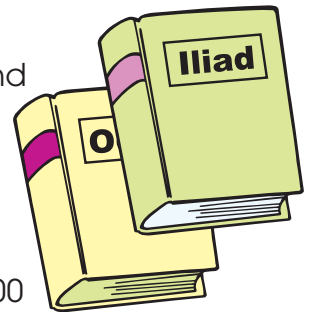
Reading Skills: Fact or Opinion?

Directions: Read the paragraphs below. For each numbered sentence, write **F** for fact or **O** for opinion. Write the reason for your answer. The first one has been done for you.

(1) The two greatest poems in the history of the world are the *Iliad* and the *Odyssey*. **(2)** The *Iliad* is the story of the Trojan War; the *Odyssey* tells about the wanderings of the Greek hero Ulysses after the war. **(3)** These poems are so long that they each fill an entire book.

(4) The author of the poems, according to Greek legend, was a blind poet named Homer. **(5)** Almost nothing is known about Homer. **(6)** This indicates to me that it is possible that Homer never existed. **(7)** Maybe Homer existed but didn't write the *Iliad* and the *Odyssey*.

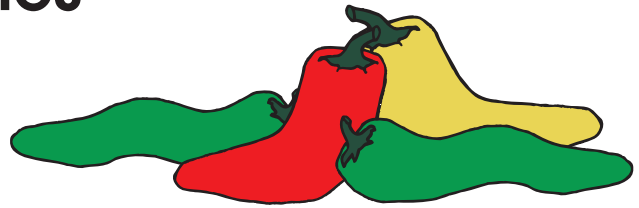
(8) Whether or not there was a Homer does not really matter. We have these wonderful poems, which are still being read more than 2,500 years after they were written.



1. Reason: This cannot be proven. People have different opinions about which are the greatest poems.
2. _____ Reason: _____
3. _____ Reason: _____
4. _____ Reason: _____
5. _____ Reason: _____
6. _____ Reason: _____
7. _____ Reason: _____
8. _____ Reason: _____

Chilies

Directions: Read about chilies. Find the one opinion in each passage, and write it on the lines.



Chilies are hot or sweet peppers. They are part of the “nightshade” family of plants that also includes potatoes and tomatoes. Potatoes and tomatoes taste better than chilies, though.

Opinion: _____

Chilies were originally grown in Central and South America. By the 15th century, Europeans were cooking with them and drying them to use as a spice. European dishes taste better now than they did before chilies were used in them.

Opinion: _____

Although it is really a Mexican recipe, every intelligent American loves *chili con carne*. It is made with spicy meat, beans, and chilies. Today, most Americans call that dish “chili.”

Opinion: _____

Some people think that all chilies are hot. Therefore, they never eat any of them. What a silly belief! There are many different kinds of red, yellow, and green chilies. Even red chilies can be sweet.

Opinion: _____

Carol's Country Restaurant

Directions: Write in the corresponding numbered blank below whether each numbered sentence gives a fact or an opinion.

(1) I have visited Carol's Country Restaurant seven times in the past two weeks.

(2) The meals there are excellent. **(3)** They often feature country dishes such as meatloaf, ham with scalloped potatoes, and fried chicken.

(4) Owner Carol Murphy makes wonderful vegetable soup that includes all home-grown vegetables. **(5)** It's simmered with egg noodles. **(6)** Another of my favorite dishes is Carol's chili. **(7)** I'm sure it is the spiciest chili this side of the Mississippi River. **(8)** Carol says she uses secret ingredients in all her dishes.

(9) Whether ordering a main dish or a dessert, you can't go wrong at Carol's.

(10) Everything is superb.

(11) Carol's Country Restaurant is on Twig Street in Freeport. **(12)** Prices for main entrees range from \$5.95 to \$12.95.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____



Review

Directions: Write 5 sentences that are facts and 5 that are opinions.

Facts:

- 1. _____

- 2. _____

- 3. _____

- 4. _____

- 5. _____

Opinions:

- 6. _____

- 7. _____

- 8. _____

- 9. _____

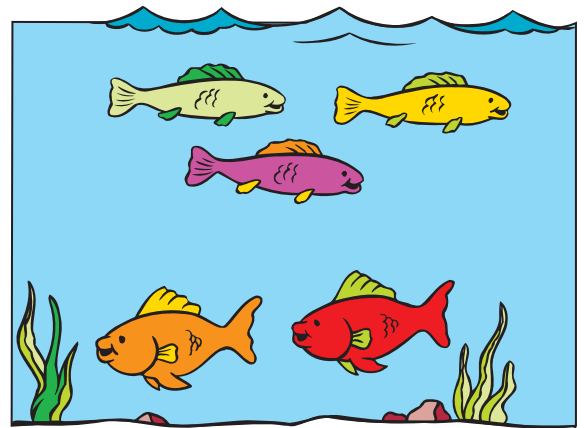
- 10. _____

Reading Skills: Cause and Effect

A **cause** is the reason something happens. The **effect** is what happens as the result of the cause.

Directions: Read the paragraphs below. For each numbered sentence, circle the cause or causes, and underline the effect or effects. The first one has been done for you.

(1) All living things in the ocean are endangered by (humans polluting the water.) Pollution occurs in several ways. One way is the dumping of certain waste materials, such as garbage and sewage, into the ocean. **(2)** The decaying bacteria that feed on the garbage use up much of the oxygen in the surrounding water, so other creatures in the area often don't get enough.



Other substances, such as radioactive waste material, can also cause pollution. These materials are often placed in the water in securely sealed containers. **(3)** But after years of being exposed to the ocean water, the containers may begin to leak.

Oil is another major source of concern. **(4)** Oil is spilled into the ocean when tankers run aground and sink or when oil wells in the ocean cannot be capped. **(5)** The oil covers the gills of fish and smothers them. **(6)** Diving birds get the oil on their wings and are unable to fly. **(7)** When they clean themselves, they are often poisoned by the oil.

Rivers also can contribute to the pollution of oceans. Many rivers receive the runoff water from farmlands. **(8)** Fertilizers used on the farms may be carried to the ocean, where they cause a great increase in the amount of certain plants. Too much of some plants can actually be poisonous to fish.

Worse yet are the pesticides carried to the ocean. These chemicals slowly build up in shellfish and other small animals. These animals then pass the pesticides on to the larger animals that feed on them. **(9)** The buildup of these chemicals in the animals can make them ill or harm their young.

Reading Skills: Cause and Effect

Directions: Read the following cause-and-effect statements. If you think the cause and effect are properly related, write **true**. If not, explain why not. The first one has been done for you.

1. The best way to make it rain is to wash your car.

It does not rain every time you wash your car.



2. Getting a haircut really improved Randy's grades.

3. Michael got an A in geometry because he spent a lot of time studying.

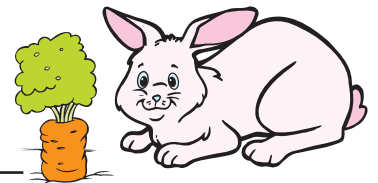
4. Yesterday, I broke a mirror, and today, I slammed my thumb in the door.

5. Natalia isn't allowed to go to the dance tonight because she broke her curfew last weekend.

6. Emily drank a big glass of orange juice, and her headache went away.

7. The Akitas had their tree cut down because it had Dutch elm disease.

8. We can't grow vegetables in our backyard because the rabbits keep eating them.



Review

Directions: Write **fact** or **opinion** to describe each sentence.

- _____ 1. Hurricanes are also known as typhoons.
- _____ 2. Hurricanes are the worst natural disasters.
- _____ 3. All hurricanes begin over the ocean near the equator.
- _____ 4. All people are concerned about pollution.
- _____ 5. Pesticides should never be used.
- _____ 6. Many colonists died due to lack of food and sickness.
- _____ 7. Kites are the best gift to give a child.
- _____ 8. The names of Columbus's three ships were the *Niña*, the *Pinta*, and the *Santa Maria*.



Directions: If the sentence demonstrates a logical cause and effect relationship, write **yes** on the line. If the sentence is illogical, write **no**.

- _____ 1. I ate fish and got sick, so all fish will make me sick.
- _____ 2. The farmer began practicing crop rotation, and his crop yield improved.
- _____ 3. I know how to swim, so I cannot possibly drown.
- _____ 4. While learning to ski, Connor broke his leg.
- _____ 5. The river overflowed its banks and caused much damage.
- _____ 6. The Cincinnati Reds won 100 games last year, so they probably will this year.
- _____ 7. Because I started using a new toothpaste, I will make more friends.



Reading Skills: Personification

When an author gives an object or animal human characteristics, it is called **personification**.

Example: The dragon quickly thought out its next move in the attack on the village.

Thought is a human process and not associated with mythical creatures; therefore, the dragon is personified in that sentence.

Directions: In the following sentences, underline the personification.

1. The cave’s gaping mouth led to internal passageways.
2. The tractor sprang to life with a turn of the key.
3. The lights blinked twice and then died.
4. Crops struggled to survive in the blistering heat, hoping for rainfall.
5. The engine of the car coughed and sputtered as if it wanted to breathe but couldn’t.
6. The arrow flew through the air, eyeing its target.
7. Snowmen smile from the safety of their yards.
8. Stephanie’s doll sipped tea delicately.



Directions: Write a sentence that personifies the following objects.

1. flower _____
2. stuffed animal _____
3. car _____

Reading Skills: Symbolism

Symbolism is the use of something to stand for (symbolize) something else.

Example:

The elderly woman held the pearl necklace in her wrinkled hand and thought back on her life. Many years had gone by since her husband had given her the necklace, as many years as there were pearls. Some of the pearls, she noticed, were darker than others, just as some years in her life had been darker than other years.

The pearl necklace symbolizes the life of the elderly woman. Each pearl stands for a year in her life, and the necklace represents the many years that have passed.

Directions: Write what is being symbolized in the paragraph on the lines below.

The refugees boarded the small ship with high hopes. They had to believe that their destiny was to find the New World and seek shelter there. A few dared to dream of the riches to be found. For them, the boat itself looked like a treasure chest waiting to be discovered.

For 12-year-old Sam, the basketball court was the best place to be. In Sam's neighborhood, crime ran rampant, and the court was the one safe place for kids like Sam to play. Sam spent most nights there, practicing lay-ups, jump shots, and three-point shots. Sam worked hard because for him it wasn't just a sport, it was a golden key.

Reading Skills: Idioms

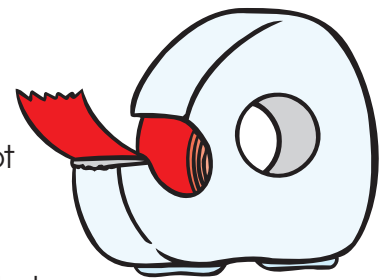
An **idiom** is a phrase that says one thing but actually means something quite different.

Example: Now that's a horse of a different color! There is not literally a horse of a different color. The idiom means "a different matter altogether."

Directions: Write the letter of the correct meaning for the bold words in each sentence. The first one has been done for you.

- | | |
|---|------------------------------------|
| a. forgive and make up | f. pressed tightly together |
| b. fact kept secret for fear of disgrace | g. relatives and ancestors |
| c. something that dampens excitement | h. rudely ignored |
| d. get acquainted, become less formal | i. excessive paperwork |
| e. treated like royalty | j. people were gossiping |

- g 1. There are a pirate and a president in our **family tree**.
- _____ 2. The Rosenbergs went through a lot of **red tape** to adopt their baby.
- _____ 3. Sophia gave me the **cold shoulder** when I tried to talk to her this morning.
- _____ 4. The big homework assignment threw a **wet blanket** over my plans for an exciting weekend.
- _____ 5. At a party, Madison likes to **break the ice** by having her guests play games.
- _____ 6. **Tongues were wagging** when the principal called Luis into his office.
- _____ 7. There were five people **sandwiched** into the back seat of the car.
- _____ 8. It was obvious that the character in my book was hiding **a skeleton in her closet**.
- _____ 9. Let's forget our past mistakes and **bury the hatchet**.
- _____ 10. When the mayor came to visit our school, we **rolled out the red carpet**.



Reading Skills: Idioms

Directions: Use the following idioms in a sentence of your own. Then, tell what the phrase means in your own words.

1. raining cats and dogs

a. _____

b. _____

2. going to the dogs

a. _____

b. _____

3. barking up the wrong tree

a. _____

b. _____

4. hit the nail on the head

a. _____

b. _____

5. went out on a limb

a. _____

b. _____

6. all in the same boat

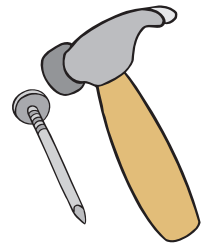
a. _____

b. _____

7. keep up with the Joneses

a. _____

b. _____



Reading Skills: Denotations and Connotations

Sometimes two words can be similar, yet you would not substitute one for the other because they each suggest different feelings.

Denotation is the literal or dictionary definition of a word.

Connotation is the meaning of a word including all the emotions associated with it.

For example, **job** and **chore** are synonyms, but because of their connotations, most people would choose to do a job instead of a chore.

Directions: Circle the word in each group with the most positive connotation.

Example:

task

job

chore

old

mature

antiquated

retort

respond

react



remainder

remnants

residue

haughty

cheeky

proud

conversational

wordy

talkative

excessively

grossly

abundantly

relaxed

lazy

inactive

shack

hovel

hut



curious

prying

nosy

swift

hasty

speedy

scamp

rascal

hoodlum

Reading Skills: Denotations and Connotations

Directions: Replace the bold word in each sentence with a word that has a more positive connotation.

Example:

He ~~shut~~ **slammed** the door when he left.

The dog's energy was **uncontrollable**.

We hoped to settle our **fight** peacefully.

The mother **reprimanded** the children when people began to look at them.

The children **gossiped** at lunchtime.

The girl **scribbled** a hasty note to leave behind.

Our conversation ended **abruptly** when the phone rang.

The principal was a **severe** man.

The boy **snatched** the toy from his baby brother.

The couple **rejected** their offer of help.

Dad reminded me to clean my **disastrous** room.



Similes and Metaphors

A **simile** compares two unlike things using the word **like** or **as**.

Example: The fog was **like** a blanket around us. The fog was **as** thick **as** a blanket.

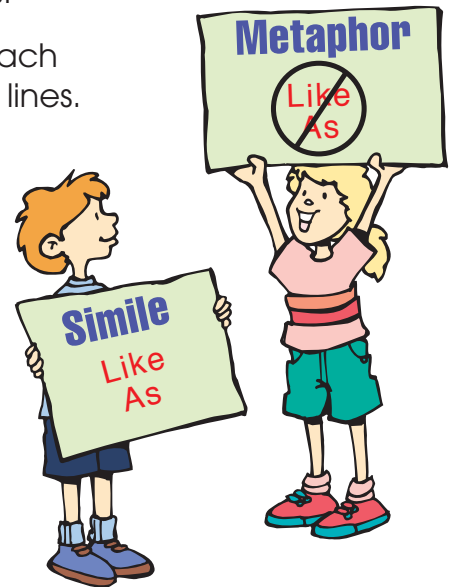
A **metaphor** compares two unlike things without using the word **like** or **as**.

Example: The fog was a blanket around us.

“The fog was thick” is not a simile or a metaphor. **Thick** is an adjective. Similes and metaphors compare two unlike things that are both nouns.

Directions: Underline the two things being compared in each sentence. Then, write **S** for simile or **M** for metaphor on the lines.

- _____ 1. The florist’s shop was a summer garden.
- _____ 2. The towels were as rough as sandpaper.
- _____ 3. The survey was a fountain of information.
- _____ 4. Her courtesy was as welcome as a cool breeze on a hot day.
- _____ 5. The room was like a furnace.



Directions: Use similes to complete these sentences.

- 6. The tornado was as dark as _____
- 7. His voice was like _____
- 8. The emergency was as unexpected as _____
- 9. The kittens were like _____

Directions: Use metaphors to complete these sentences.

- 10. To me, research was _____
- 11. The flourishing plants were _____
- 12. My observation at the hospital was _____

Vocabulary Building: Similes

A **simile** is a figure of speech comparing two things using **like** or **as**.

Example: The child was as quiet as a mouse.

Directions: Read the following paragraph. Underline the similes.

The kittens were born on a morning as cold as ice. Although it was late spring, the weather hadn't quite warmed up. There were five kittens in the litter, each quite different from its siblings. The oldest was black as deepest night. There was a calico that looked like Grandma's old quilt. One was as orange as a fall pumpkin, and another was orange and white. The runt was a black and gray tiger. She was as little as a baseball and as quick as lightning to fight for food. The kittens will soon become accepted by the other animals as members of the farm.



Directions: Using the following words, create similes of your own.

Example: piano—The piano keys tinkled like a light rain on a tin roof.

1. fire _____

2. thunderstorm _____

3. ocean _____

4. night _____

5. rainforest _____

6. giraffe _____

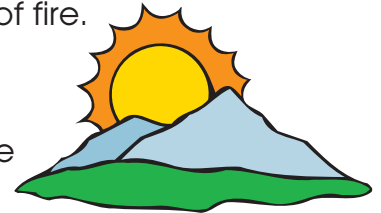
Vocabulary Building: Metaphors

A **metaphor** is a figure of speech that directly compares one thing with another.

Example: As it set, the sun was a glowing orange ball of fire.

The sun is being compared to a glowing orange ball of fire.

sun glowing orange ball of fire



Directions: Underline the metaphor in each sentence. Then, write the two things that are being compared on the lines.

1. The ocean, a swirling mass of anger, released its fury on the shore.

2. He was a top spinning out of control.

3. The heat covered the crowd, a blanket smothering them all.

4. I fed my dog a steak, and it was a banquet for her senses.

5. The flowers in the garden were a stained glass window.



Vocabulary Building: Metaphors and Similes

Directions: Underline the metaphors in the following sentences. Then, rewrite each sentence using a simile.

1. She is a playful child, a real kitten!

2. Life today is a merry-go-round.

3. His emotions were waves washing over him.

4. His childhood was an image in a rearview mirror.



Directions: Write the meanings of the following sentences.

1. His mind was as changeable as spring weather.

2. His demand was like a clap of thunder.

3. There was joy written on the children's faces on Christmas morning.

Reading Skills: Generalizations

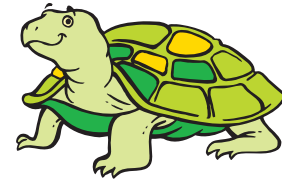
A **generalization** is a statement or rule that applies to many situations or examples.

Example: All children get into trouble at one time or another.

Directions: Read each paragraph, and then circle the generalization that best describes the information given.

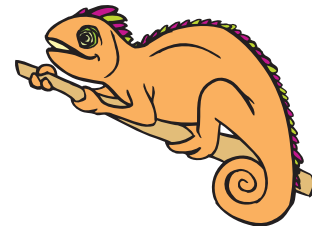
Although many people think of reptiles as slimy, snakes and other reptiles are covered with scales that are dry to the touch. Scales are outgrowths of the animal’s skin. Although in some species they are nearly invisible, in most they form a tile-like covering. The turtle’s shell is made up of hardened scales that are fused together. The crocodile has a tough but more flexible covering.

- Every reptile has scales.
- The scales of all reptiles are alike.
- There are many different kinds of scales.



The reptile’s scales help to protect it from its enemies and conserve moisture in its body. Some kinds of lizards have fan-shaped scales that they can raise up to scare away other animals. The scales also can be used to court a mate. A reptile called a gecko can hang from a ceiling because of specialized scales on its feet. Some desert lizards have other kinds of scales on their feet that allow them to run over the loose sand.

- Scales have many functions.
- Scales scare away other animals.
- Scales help reptiles adapt to their environments.



A snake will periodically shed its skin, leaving behind a thin impression of its body—scales and all. A lizard sheds its skin, too, but it tears off in smaller pieces rather than in one big piece. Before a snake begins this process, which is called molting, its eyes cloud over. The snake will go into hiding until they clear. When it comes out again, it brushes against rough surfaces to pull off the old skin.

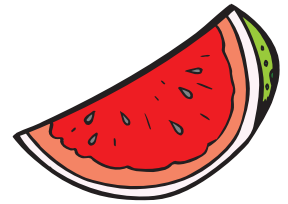
- Snakes go into hiding before they molt.
- Reptiles periodically shed their skin.
- A lizard’s skin molts in smaller pieces.



Reading Skills: Generalizations

Directions: Identify which statements below are generalizations and which are specific. Write **G** for generalization and **S** for specific.

- _____ 1. We want to have lots of good food for the party.
- _____ 2. Jenna gave me three pink shirts and two pairs of jeans.
- _____ 3. Americans are generous and friendly.
- _____ 4. There are 10 more female teachers than male teachers at our school.
- _____ 5. She wants me to buy watermelon at the grocery store.
- _____ 6. She will never believe anything I say.
- _____ 7. I got poison ivy because I didn't watch out for the foliage on our hike.
- _____ 8. My mom is the best mom in the world.
- _____ 9. I get depressed every time the weather turns bad.
- _____ 10. The team is so good because they work out and practice every day.
- _____ 11. Cats are so bad-tempered.
- _____ 12. My dog has a good temperment because he's had lots of training.
- _____ 13. Our football team is the best this county has ever seen.
- _____ 14. I love the feel of rain on my skin because it's cool.
- _____ 15. That classroom is always out of control.



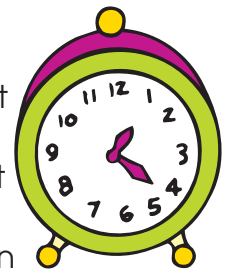
Reading Skills: Skimming and Scanning

Skimming is reading quickly to get a general idea of what a reading selection is about. When skimming, look for headings and key words to give you an overall idea of what you are reading.

Scanning is looking for certain words to find facts or answer questions. When scanning, read or think of questions first.

Directions: Scan the paragraphs below to find the answers to the questions. Then, look for specific words that will help you locate the answers. For example, in the second question, scan for the word **smallest**.

There are many different units to measure time. Probably the smallest unit that you use is the second, and the longest unit is the year. While 100 years seems like a very long time to us, in the history of Earth, it is a smaller amount of time than one second is in a person’s entire lifetime.



To describe the history of Earth, scientists use geologic time. Even a million years is a fairly short period of time in geologic time. Some scientists believe that our planet is about 4,600 million years old. Since a thousand million is a billion, Earth is believed to be 4.6 billion years old.

1. What kind of time is used to describe the history of Earth?

2. For the average person, what is the smallest unit of time used?

3. In millions of years, how old do some scientists believe Earth is?

4. How would you express that in billions of years?

The Author's Purpose

Authors write to entertain, inform, or persuade. To entertain means "to hold the attention of or to amuse someone." A fiction book about outer space entertains its reader, as does a joke book.

To inform means "to give factual information." A cookbook informs the reader of new recipes. A newspaper tells what is happening in the world.

To persuade people means "to convince them." Newspaper editorial writers try to persuade readers to accept their opinions. Doctors write health columns to persuade readers to eat nutritious foods or to exercise regularly.

Directions: Read each of the passages below. Tell whether they entertain, inform, or persuade. (They may do more than one.) Give the reasons why.

George Washington was born in a brick house near the Potomac River in Virginia on February 11, 1732. When he was 11 years old, George went to live with his half-brother, Lawrence, at Mount Vernon.

Author's Purpose: _____

Reason: _____

When George Washington was a child, he always measured and counted things. Maybe that is why he became a surveyor when he grew up. Surveyors like to measure and count things, too.

Author's Purpose: _____

Reason: _____

George Washington was the best president America has ever had. He led a new nation to independence. He made all the states feel as if they were part of the United States. All presidents should be as involved with the country as George Washington was.

Author's Purpose: _____

Reason: _____

Llamas



Directions: Read each paragraph. Tell whether it informs, entertains, or persuades. One paragraph does more than one. Then, write your reason on the line below.

A llama (LAH'MAH) is a South American animal that is related to the camel. It is raised for its wool. Also, it can carry heavy loads. Some people who live near mountains in the United States train llamas to go on mountain trips. Llamas are sure-footed because they have two long toes and toenails.

Author's Purpose: _____

Reason: _____

Llamas are the best animals to have if you're planning to backpack in the mountains. They can climb easily and carry your supplies. No one should ever go for a long hiking trip in the mountains without a llama.

Author's Purpose: _____

Reason: _____

Llamas can be stubborn animals. Sometimes, they suddenly stop walking for no reason. People have to push them to get them moving again. Stubborn llamas can be frustrating when hiking up a steep mountain.

Author's Purpose: _____

Reason: _____

Greg is an 11-year-old boy who raises llamas to climb mountains. One of his llamas is named Dallas. Although there are special saddles for llamas, Greg likes to ride bareback.

Author's Purpose: _____

Reason: _____

Now, use a separate sheet of paper to inform readers about llamas.

Roller Coasters

Directions: Read each paragraph, and determine the author's purpose. Then, write down your reason on the line below.

Roller coaster rides are thrilling. The cars chug up the hills and then fly down them. People scream and laugh. They clutch their seats and sometimes raise their arms above their heads.

Author's Purpose: _____

Reason: _____

The first roller coasters were giant slides made of ice in Russia. That was more than 300 years ago! The slides were about 70 feet high, and people had to climb steep ladders to reach their tops. Riders got into carts and slid down very fast. Then, they climbed the ladders again. Early roller coasters were more work than fun.

Author's Purpose: _____

Reason: _____

The first roller coaster in America was built in 1884. It cost only a nickel to ride the "Switchback Gravity Pleasure Railway" at Coney Island in New York. Roller coasters did not become very popular until the late 1920s.

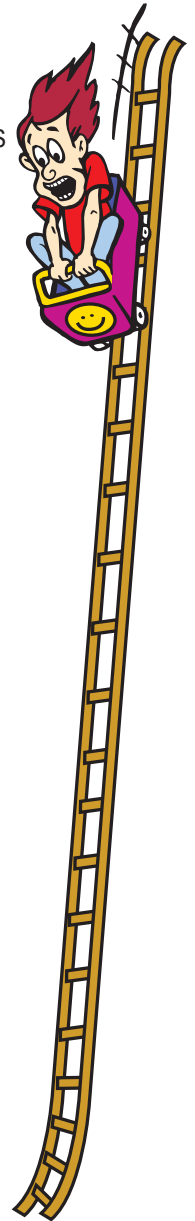
Author's Purpose: _____

Reason: _____

Have you ever ridden a giant roller coaster? Some of the most famous ones in the world include the "Bizarro" at Six Flags New England; the "Intimidator 305" at Kings Dominion in Doswell, Virginia; and the "Millennium Force" at Cedar Point in Sandusky, Ohio. Roller coasters are fun because they have thrilling twists and turns. Some go very high, and some turn upside down. Everyone should go on a roller coaster at least once in his or her life.

Author's Purpose: _____

Reason: _____



Now, use a separate sheet of paper to persuade people to ride roller coasters.

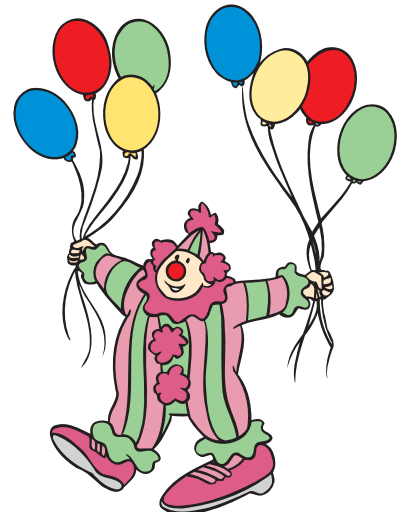
Review

Directions: Follow the instructions for each section.

1. Write an informative paragraph about a sport.

2. Write an entertaining paragraph about the circus.

3. Write a persuasive paragraph about the desire for a later bedtime.



Multiple Choice

Multiple-choice questions are frequently asked on tests. Such questions include three or four possible answers. When answering a multiple-choice question, first read the question carefully. Then, read all the answers that are offered. If you do not know the correct answer, eliminate some of the ones you know are wrong until you have only one left. Remember these points when taking multiple-choice tests:



1. Answers that contain phrases such as **all people**, **no one**, or **everybody** are probably not correct. For example, a statement such as "all children like candy" is probably not correct because it allows for no exceptions. If there is one child who does not like candy, the statement is not correct. However, if you know that more than one answer is correct and the last choice in the group is "all of the above," then that phrase is probably the correct answer.
2. Answers that contain words you have never seen before probably are not correct. Teachers don't expect you to know material you haven't studied.
3. Answers that are silly usually aren't correct.
4. When two of the answers provided look nearly the same, one of them is probably correct.
5. Always check your answers if there is time.

Directions: Answer the questions about multiple-choice tests.

1. The first thing you should do during a multiple-choice test is _____

2. When you are reading the possible answers to a multiple-choice question and you know the first one is right, should you immediately mark it without reading the other answers? _____
Why or why not? _____
3. Write three phrases that might tell you that an answer is probably not correct.

True/False

True/false tests include several statements. You must read each one carefully to determine if it is right or wrong. Remember these tips:

1. Watch for one word in the sentence that can change the statement’s meaning from true to false or vice versa.
2. Words such as **all**, **none**, **everybody**, or **nobody** should alert you that the answer may be false. Using these words means that there are no exceptions.
3. There are usually more true answers on a test than false ones. Therefore, if you have to guess an answer, you have a better chance of answering right by marking it “true.”
4. Always check your answers if there is time.



Directions: Answer the questions about true/false tests.

1. List four words that can alert you that a question is false.

2. One word in a sentence can

3. If you must guess an answer, is it wiser to guess true or false? _____

4. True/false tests are made up of several _____.

5. Can you do well on a true/false test by only skimming each statement? _____

6. If the word **everybody** is in the statement, is the answer probably true or false? _____

7. When the word **all** appears in the statement, is the answer probably true or false? _____

8. What should you do last when taking a true/false test?

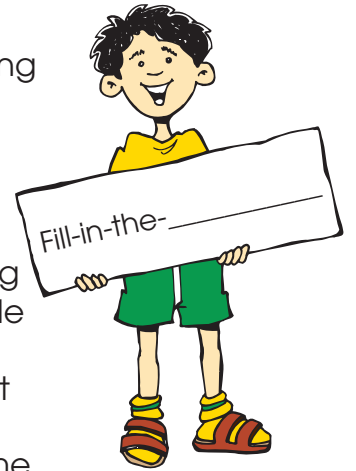
Fill in the Blank

Fill-in-the-blank tests are more difficult than true/false or multiple-choice tests. However, there may be clues in each sentence that help determine the answer. Look at this example:

The _____ of the United States serves a _____ -year term.

Can you tell that the first blank needs a person? (The answer is “president.”) The second blank needs a number because it refers to years. (“Four” is the answer.) Think about these other tips for taking fill-in-the-blank tests:

1. Always plan your time wisely. Don't waste too much time on one question. Check the clock or your watch periodically when taking a test.
2. First, read through the entire test. Then, go back to the beginning and answer the questions that you know. Put a small mark beside the questions you are not sure about.
3. Go back to the questions you were not sure of or that you didn't know. Carefully read each one. Think about possible answers. If you think it could be more than one answer, try to eliminate some of the possible answers.
4. Save the most difficult questions to answer last. Don't waste time worrying if you don't know the answer to a question.
5. Sometimes, you should guess at an answer because it may be right. There are some tests, though, that deduct points if your answer is wrong, but not if it is left blank. Make sure you know how the test will be scored.
6. Review your test. Make sure you have correctly read the directions and each question. Check your answers.



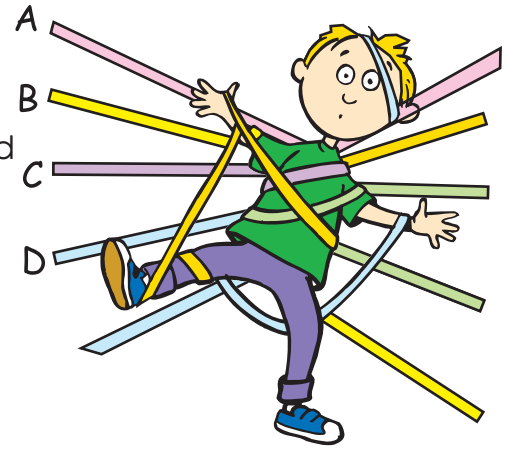
Directions: Answer the questions about fill-in-the-blank tests.

1. Fill-in-the-blank tests may have _____ in each sentence that help you figure out the answer.
2. Always plan your _____ wisely when taking a test.
3. Should you try to answer a question as soon as you read it? _____
4. Should you answer the hard or easy questions first? _____
5. If you are not sure of a question, you should _____ beside it.

Matching

Matching tests have two columns of information. A word or fact from one column matches information in the other. Read these tips to help with matching tests:

1. Look at one question at a time. Start with the first word or phrase in one of the columns. Then, look at the possible answers in the other column until you find the correct one. Then, go to the next word or phrase in the first column. If you don't know the answer to one question, skip it and go back to it later.
2. If there are several words in one column and several definitions in the other column, it is often easier to read the definition first and then find the word that goes with it.
3. Carefully read the directions. Sometimes, one column on a matching test is longer than the other. Find out if there is one answer that won't be used or if an answer in the opposite column can be used twice.
4. Check your answers if there is time.



Directions: Answer the questions about matching tests.

1. Matching tests have how many columns of information? _____
2. If one column has words in it and the other column has definitions in it, which one should you look at first to make the test easier? _____
3. To eliminate confusion, you should look at _____ question at a time.
4. Do the columns on a matching test always have the same number of things in them? _____
5. Are there ever items left unmatched on a matching test? _____
6. Does it matter if you look at the right or left column of a matching test first? _____

Review

Directions: Complete each question about tests.

1. Four steps for writing an answer for an essay test include:
 - a) _____
 - b) _____
 - c) _____
 - d) _____

2. In a matching test, it is sometimes easier to read the _____ and then match it with a word from the opposite column.

3. One column on a _____ may be longer than the other.

4. Tests that require you to fill in the blanks may provide _____ in each statement.

5. Always _____ answers if there is time.

6. Certain words, such as **none** and **all**, should alert you that an answer may be _____.

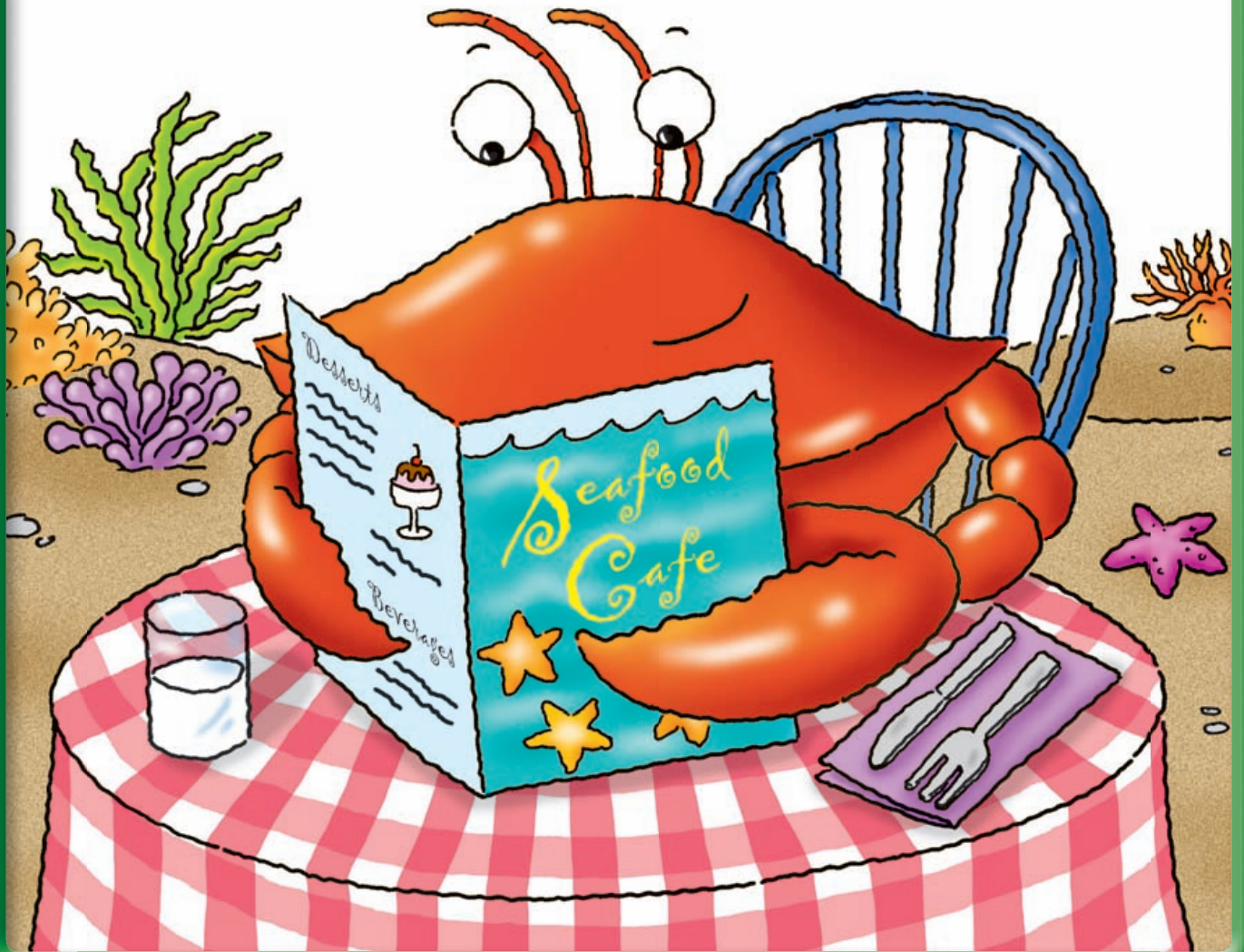
7. There are usually, but not always, more _____ statements on a true/false test.

8. If **everybody** or **everything** is used in one of the answers for a _____, it is likely that that answer is not right.

9. If two possible answers for a multiple-choice question sound nearly the _____, one of them is probably correct.

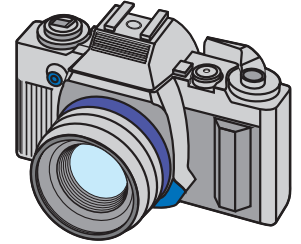
10. If two answers to a multiple-choice question appear to be correct, the answer could be one that says _____.

READING COMPREHENSION



Comprehension: Ansel Adams

One of the world's most well-known photographers is Ansel Adams. You may not recognize his name, but you would probably recognize his photos. Adams was known for his love of nature and his stunning black-and-white landscape photographs. Although photography ended up becoming a passion for Adams, his earlier ambitions were in a completely different area.



Ansel Adams was born in 1902 in California. He was an only child, and he grew up with a rather shy and nervous personality. He did not do particularly well in school. As a result, he learned much on his own and from tutors. As a boy, Adams discovered a love of music. For a number of years, he planned on pursuing a career as a professional pianist.

In addition to his love of piano, Adams was passionate about nature and its preservation. He became involved with the Sierra Club as a teenager. This interest in the environment would last him throughout his life. When Adams was 14, he and his parents took a trip to Yosemite National Park. His parents gave him a Kodak Brownie box camera to use during the trip, and Adams's love of photography was born.

Throughout his life, Adams published a number of books featuring his photos. His pictures of the national parks were among the most famous. Adams lived long before digital cameras were available. He spent many hours in the darkroom, working painstakingly to print an image that matched the one in his mind's eye. Adams died in 1984, but he lives on in his photographs of the natural world he loved so much.

Directions: Answer these questions about Ansel Adams.

1. For what kind of photos was Ansel Adams best known? _____
2. How was Adams's education different from a typical education? _____

3. What similarities are there between a career as a photographer and a pianist? _____

4. How was Adams's love of nature reflected in his photography? _____

5. Why did Adams's parents give him a camera? _____

Comprehension: Photography Terms



Like other good professionals, photographers make their craft look easy. Their skill—like that of the graceful ice skater—comes from years of practice. Where skaters develop a sense of balance, photographers develop an “eye” for pictures. They can make important technical decisions about photographing, or “shooting,” a particular scene in the twinkling of an eye.

It’s interesting to know some of the technical language that professional photographers use. “Angle of view” refers to the angle from which a photograph is taken. “Depth of field” is the distance between the nearest point and the farthest point that is in focus in a photo.

“Filling the frame” refers to the amount of space the object being photographed takes up in the picture. A close-up picture of a dog, flower, or person would fill the frame. A far-away picture would not.

Two elements that photographers work with are shutter speed and aperture. Shutter speed refers to how quickly the camera's shutter opens and closes. The longer the shutter stays open, the more light it allows in. The more quickly the shutter opens and closes, the better the photographer can capture an action shot. Shutter speed must work together with the aperture, which is the opening that controls the amount of light passing through the lens. A photographer who learns to properly balance shutter speed and aperture can take wonderful, sharp pictures that skillfully capture his or her subjects.

Directions: Answer these question about photography terms.

- Name another term for photographing. _____
- This is the distance between the nearest point and the farthest point that is in focus in a photo.

- What is aperture? _____
- A close-up picture of someone’s face would

<input type="checkbox"/> provide depth of field.	<input type="checkbox"/> appear far away.	<input type="checkbox"/> fill the frame.
--	---	--
- Shutter speed and aperture work together.

<input type="checkbox"/> True	<input type="checkbox"/> False
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Comprehension: Photographing Animals

Animals are a favorite subject of many young photographers. Cats, dogs, hamsters, and other pets top the list, followed by zoo animals and the occasional lizard.



Because it's hard to get pets to sit still and "perform on command," some professional photographers refuse to photograph them. There are ways around the problem of short attention spans, however.

One way to get an appealing portrait of a cat or dog is to hold a biscuit or treat above the camera. The animal's longing look toward the food will be captured by the camera as a soulful gaze. Because it's above the camera—out of the camera's range—the treat won't appear in the picture. When you show the picture to your friends afterwards, they will be impressed by your pet's loving expression.

You can also try taking a series of good, quick shots of a pet by simply snapping several pictures right after calling its name. You'll get a different expression from your pet using this technique. Depending on your pet's disposition, the pictures will capture an inquisitive expression or possibly a look of annoyance, especially if you've awakened Rover from a nap!

Taking pictures of zoo animals requires a little more patience. After all, you can't wake up a lion! You may have to wait for a while until the animal does something interesting or moves into a position for you to get a good shot. When photographing zoo animals, don't get too close to the cages, and never tap on the glass or throw things between the bars of a cage! Concentrate on shooting some good pictures, and always respect the animals you are photographing.

Directions: Answer these questions about photographing animals.

1. Why do some professionals dislike photographing animals? _____

2. Does the author suggest taking a single photo of a pet or several quick photos in a row? Why? _____
3. To capture a pet's loving expression, hold this out of camera range. _____
4. Compared to taking pictures of pets, what does photographing zoo animals require?

Generalization: Taking Pictures

A **generalization** is a statement that applies to many different situations.

Directions: Read each passage, and circle the valid generalization.

1. Most people can quickly be taught to use a simple camera. However, it takes time, talent, and a good eye to learn to take professional-quality photographs. Patience is another quality that good photographers must possess. Those who photograph nature often will wait hours to get just the right light or shadow in their pictures.
 - a. Anyone can learn to use a camera.
 - b. Any patient person can become a good photographer.
 - c. Good photographers have a good eye for pictures.
2. Photographers such as Diane Arbus, who photographed strange or odd people, also must wait for just the right picture. Many “people photographers” stake out a busy city sidewalk and study faces in the crowd. Then, they must leap up quickly and ask to take a picture or take one without being observed. Either way, it’s not an easy task!
 - a. Staking out a busy sidewalk is a boring task.
 - b. “People photographers” must be patient people and good observers.
 - c. Taking someone's photo without his or her permission is not a nice thing to do to strangers.
3. Whether the subject is nature or humans, many photographers insist that dawn is the best time to take pictures. The light is clear at this early hour, and mist may still be in the air. The mist gives these early morning photos a haunting, “other world” quality that is very appealing.
 - a. Morning mist gives an unusual quality to most outdoor photographs.
 - b. Photographers all agree that dawn is the best time to take pictures.
 - c. Misty light is always important in taking pictures.



Generalization: Food Photography

Directions: Read each passage, and circle the valid generalization.

1. Taking good photographs of food is more difficult than it seems. Anyone can snap a photo of a bowl of soup or a basket of apples. The goal is to convey the food's best traits. If the soup is steaming hot and full of chunks of savory veggies, the photo needs to show that to the viewer. If the apples are crisp, sweet, and juicy, the photo should make the viewer want to pick one up and take a bite. A photo taken from a bad angle or with poor lighting won't make food look appealing to anyone.



- a. It is not easy to take a photo of a basket of apples.
 - b. The goal of food photography is to make the food look appealing to the viewer.
 - c. Only professional photographers should take photos of food.
2. Indirect daylight is the best lighting for food photography. Good light is important in making the food look appetizing. Photos of food can often look flat, with a yellowish tone to the picture. The best possible lighting is a shady spot that is surrounded by natural light. Bright, direct sunlight is too harsh. It can create shadows and bleach out bright colors and whites.
- a. No one should ever take photos of food on a bright, sunny day.
 - b. Never use artificial lighting when taking photos of food.
 - c. Good lighting, such as indirect daylight, is essential to taking appetizing photos of food.
3. Using props and styling the food can make a dish look much more attractive. Think of a bowl of chili. Shown on its own, it may not look very appealing. If you were to add a pretty placemat or napkin, the photo would look more interesting. Adding some cheese or a dollop of sour cream to the chili would certainly make the viewer want to dig in! A cutting board, patterned napkins, and garnishes like chopped herbs or cheese can help food look much more appealing in a photo.
- a. Props and food styling can help food appear more appealing in photos.
 - b. You should always photograph chili with garnishes.
 - c. The food is more important than the props and styling in a photograph.

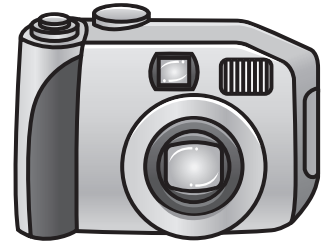
Generalization: Choosing a Camera

Photography is an important part of American culture today. Digital cameras have made pictures incredibly easy to take. Many people have phones that can take photos, and it's also easy to share them instantly via the Internet. When it comes to buying a camera, though, there are still many options.

For the casual photographer, a point-and-shoot digital camera is a good choice. This type of camera is easy for almost anyone to use. You don't need to have a great knowledge of how cameras work or the finer points of photography. That's how these cameras got their nickname—all you need to do is point the camera and shoot your picture. The settings are mostly automatic, and the camera makes the decisions for you. Most point-and-shoot cameras allow you to make some adjustments if you like. You can change the setting to do things like take an action shot, photograph fireworks, or take a picture of a sunny day at the beach.

For more serious photographers, a DSLR camera is a likely choice. **DSLR** stands for digital single-lens reflex. A photographer using this type of camera has much more control over the camera's settings. He or she needs to know more about photography in order to manually do what other cameras do automatically. The benefit is that the DSLR photographer can often capture things that a photographer with a point-and-shoot camera cannot. DSLR cameras tend to be quite a bit more expensive than point-and-shoot cameras. In addition, the various lenses are also expensive. Serious photographers accept the added work and expense because they can have so much more control over their photos.

Directions: Answer these questions about choosing a camera.



1. Which generalization is correct?
 - a. Point-and-shoot cameras cost less than DSLR cameras.
 - b. A DSLR camera is good choice for serious photographers who want to have a lot of control over the photos they take.
 - c. Most of the settings are automatic in point-and-shoot cameras.

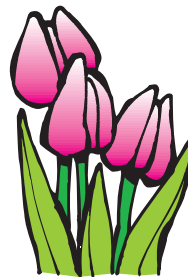
2. How are point-and-shoot cameras and DSLR cameras different from one another?

3. If you were to buy a camera, which kind would you choose? Explain why.

Review

Directions: Circle the missing word for each sentence.

1. Ansel Adams was known for his beautiful _____ photos.
 - a. pianist
 - b. amateur
 - c. landscape
2. The distance between the nearest point and the farthest point in a photo is called the _____.
 - a. graphic
 - b. shooting
 - c. depth of field
3. _____ refers to the angle from which a photograph is taken.
 - a. Photos
 - b. Angle of view
 - c. Lens
4. Shutter speed refers to how quickly a camera's shutter _____.
 - a. opens and closes
 - b. flashes
 - c. focuses
5. The _____ of the camera collects the light rays and draws them together at the center.
 - a. shutter
 - b. lens
 - c. aperture
6. Taking a picture is often referred to as _____.
 - a. shooting
 - b. graphic
 - c. speed



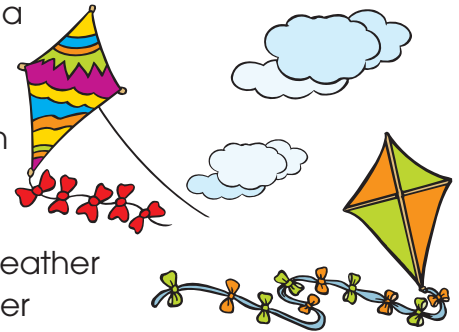
Main Idea/Recalling Details: Kites

Kites are a familiar sight on breezy fall days. They come in a great variety of sizes, colors, and designs. It is not known who invented kites, but kites have been flown since the beginning of recorded history. While today children and adults use them for recreation, throughout history kites have had other uses.

In the United States, kites have been used in weather and other scientific research experiments. Before airplanes and weather balloons, the National Weather Service had kites carry weather instruments as high as 4 miles above Earth. In addition, the United States military used kites for observing the enemy and sending messages between troops.

In other countries, kites had cultural and religious importance. The ancient Chinese flew kites over their homes to drive out evil spirits. The Chinese still enjoy kites so much that one day each year they celebrate Kites' Day.

On some Pacific islands, kites were thought to have spiritual qualities. They were believed to symbolize both sides of nature—life and death. On some Polynesian islands, kites were used as protection against evil. These kites were often shaped like birds and used as soaring messengers to the heavens. In Hawaii, kites were also used to establish land ownership. A kite was released in the air, and a claim was given for the area where it came down.



Directions: Answer these questions about kites.

1. The main idea is:

- Kites come in a great variety of sizes, colors, and designs.
- While today kites are used for recreation, throughout history they have had other uses.

2. Besides recreation, name two ways kites have been used in the United States.

a) _____

b) _____

3. What country celebrates a holiday called Kites' Day? _____

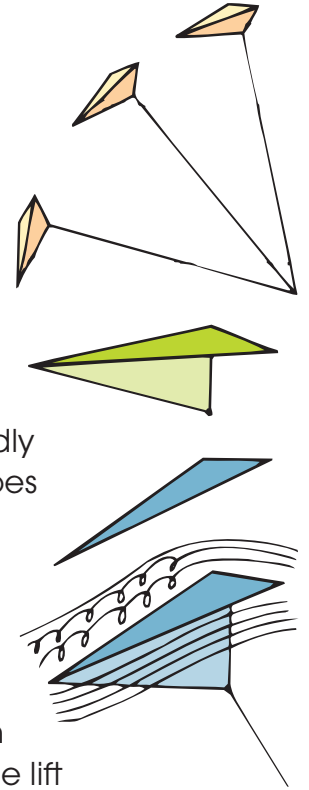
4. How did Hawaiians use kites to decide land ownership? _____

Comprehension: Aerodynamics

Kites are able to fly because of the principle of **aerodynamics**. Aerodynamics is the study of forces that are put into action by moving air. Three main forces work to keep a heavier-than-air kite flying—lift, gravity, and drag.

This is how it works: The flying lines, or strings, are attached to the kite to hold it at a slant. The wind pushes against the underside of the kite. At the same time, the wind rushes around the edges of the kite and “drags” some of the air from the upper side. This creates a partial vacuum there. The push of the air underneath is greater than the push of the air from the top, so the kite is held in the air. An airplane is held in the air in much the same way, except that it must keep moving rapidly to make the pressure above and below its wings different. The wind does this for the kite. In a steady airstream, a kite doesn’t move backward or forward. It seems to be unaffected by gravity. This is possible because the lifting force of the wind overcomes the downward force of gravity.

If you have ever ridden a bicycle into a strong wind, you may have felt some of the forces of aerodynamics. If you held your hand out to your side, you could feel the air stream flowing around your hand. With your fingers pointed into the wind and your hand held level, there is little lift or drag. But if you raised your fingers slightly, the wind lifted your hand upwards. Raising your hand higher increases the drag and decreases the lift. Your hand is pushed downward. A kite flying in the sky is subject to these same forces.



Directions: Answer these questions about aerodynamics.

1. What is aerodynamics? _____

2. What three forces are at work to hold a kite in the air?

a) _____ b) _____ c) _____

3. An airplane is held in the air in much the same way, except that it must keep moving rapidly to keep the air above and below its wings different.

True False

Comprehension: Getting Your Kite to Fly

There are some basic things to know about kite flying that can help you enjoy the sport more. Here are a few of the most important ones.

First, if you have ever seen someone flying a kite in a movie, you probably saw him or her get the kite off the ground by running into the wind. However, this is not the way to launch a kite. Most beginners will find a “high-start” launch to be the easiest. For a high-start launch, have a friend stand about 100 feet away, facing into the wind. Your friend should face you and hold the kite gently. Place some tension on the flying line by pulling gently on it. With a steady breeze behind you, tug gently on the line, and the kite will rise. If your kite begins to dive, don’t panic or pull on the line. Dropping the reel will cause it to spin out of control and could cause someone to be hurt. Simply let the line go slack. This usually will right the kite in midair.



For a kite that is pulling hard away from you, have a friend stand behind you and take up the slack line as you bring it in. Hand over hand, pull down the kite. It is very important to have gloves on to do this, or you may burn or cut your hands. It is recommended that you always wear gloves while kite flying.

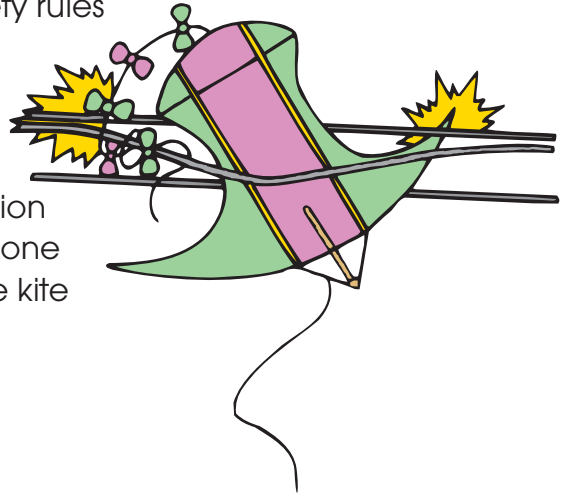
When two kite lines get crossed, pulling may cause enough friction to cut one or both of the lines. Instead of pulling, both fliers should walk toward one another until their lines uncross as they pass.

Directions: Circle **True** or **False** for these statements about kite flying.

- | | | |
|--|------|-------|
| 1. To launch a kite, run into the wind holding the kite behind you. | True | False |
| 2. In a high-start launch, a friend stands about 100 feet away from you, holding the kite. | True | False |
| 3. If your kite begins to dive from the sky, immediately drop the reel. | True | False |
| 4. It is recommended that you always wear gloves when kite flying. | True | False |

Recalling Details: Kite Safety Rules

Because kite flying is a relaxed, easygoing sport, it is easy to have the mistaken belief that there are no dangers involved. However, like any sport, kite flying must be approached with care. Here are some important safety rules you should always follow while kite flying:



- **Don't** fly a kite in wet or stormy weather or use wet flying line.
- **Don't** fly a kite near electrical power lines, transmission towers, or antennae. If your kite does get caught in one of these, walk away and leave it! If you must get the kite back, contact your local electric company.
- **Don't** use wire for flying line.
- **Don't** use metal for any part of the kite.
- **Don't** fly a kite near a street or in crowded areas.
- **Don't** fly a kite in a field or other area that has rocks or other objects you could trip over.
- **Don't** walk backwards without looking behind you.
- **Don't** fly a kite around trees. (If your kite does happen to get caught in a tree, let the line go slack. Sometimes the wind can work it free.)
- **Don't** fly a kite using unfamiliar equipment. A reel spinning out of control can be quite dangerous.
- **Don't** fly a kite near an airport.
- **Don't** fly a very large kite without proper guidance.
- **Do** wear protective gloves to avoid burns on your hands from rapidly unwinding line.
- **Do** use flying line that has been tested for the type and size of kite you are using.

Directions: Answer these questions about kite safety.

1. List three things you should never fly a kite around.
 a) _____ b) _____ c) _____
2. What should you do if your kite gets caught in a tree? _____

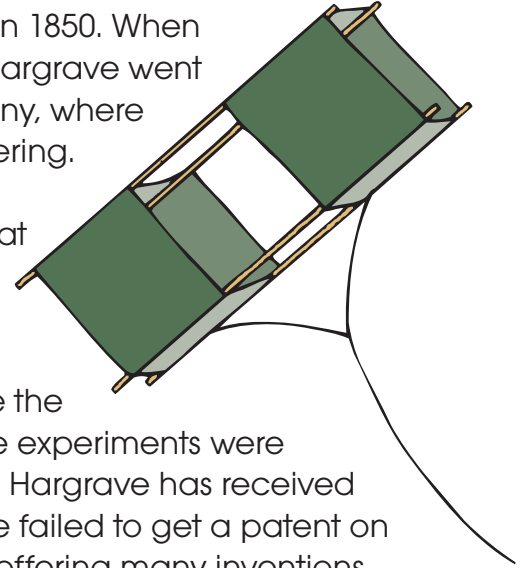
3. What material should you never use in any part of your kite? _____

Recalling Details: Aviation Pioneer

Lawrence Hargrave was born in Middlesex, England, in 1850. When he was a teenager, his family moved to Australia. There, Hargrave went to work for the Australian Stream and Navigation Company, where he spent 5 years gaining practical experience in engineering. He soon became interested in artificial flight.

Hargrave wanted to develop a stable lifting surface that could be used for flying. This goal led to his invention of the box kite, one of the seven basic models. In 1894, he carried out kite experiments along the beaches near his home. One day, in front of onlookers, he was lifted above the beach and out over the sea by four of his box kites. These experiments were very important to the development of air travel, although Hargrave has received little credit for it. In fact, because of his modesty, Hargrave failed to get a patent on his box kite. He spent more than 30 years studying flying, offering many inventions, including a rotary engine.

In 1906, Hargrave began looking for a home for his collection of nearly 200 models of kites and flying machines. After being rejected by several governments, his collection was accepted at a technological museum in Munich, Germany. Unfortunately, many of these models were destroyed during World War I.



Directions: Answer these questions about Lawrence Hargrave.

1. For what kite design was Lawrence Hargrave known? _____
2. What was Hargrave trying to create when he made this kite?

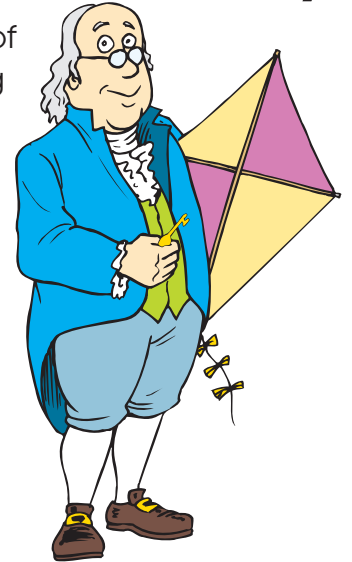
3. What was one of the inventions Hargrave contributed to aviation? _____

4. Where was Hargrave's collection of kites and flying machines finally housed?

Main Idea/Recalling Details: A Kite in History

In June 1752, Benjamin Franklin proved that lightning was a type of electricity by flying a kite with a key tied to the bottom of the line during a thunderstorm. Before his experiment, many people thought that lightning was a supernatural power.

After the success of his experiment, Franklin figured that if lightning could be drawn to a kite in a storm, it could be safely redirected into the ground by a metal rod attached to a house. His idea was met with much doubt, but lightning rods were soon seen on buildings in many of the colonies and later in Europe. During the years between 1683 and 1789, studying the universe and laws of nature was of tremendous importance. It was during this Age of Reason, as it was known, that Franklin’s kite experiment gained him international fame and respect. He was elected to the Royal Society of London and the French Academy of Sciences, among other honors.



More than 20 years after his bold experiment, American patriots were enduring many hardships in their struggles for freedom from England. The colonial troops had shortages of guns, gunpowder, and food. France was sending supplies but not as much as was needed. Benjamin Franklin was chosen to go to France to persuade the French to aid the American cause. Franklin’s reputation as a brilliant scientist earned him a hero’s welcome there. The French people were so impressed by him that they wanted to help the colonies, even during a time when they could barely afford it. The supplies sent by the French were instrumental to the colonists in winning the war. And it all started with a kite.

Directions: Answer these questions about Ben Franklin and his historical kite.

1. The main idea is:

- A kite played a role in the American Revolution and gained a spot in history books.
- Benjamin Franklin proved that lightning was a type of electricity by flying a kite with a key tied to the bottom of the line during a storm.

2. From his kite and key experiment, what did Franklin invent? _____

3. What was the era between 1683 and 1789 known as? _____

4. Why was Franklin sent to France in 1776? _____

Summarizing: Pioneers

Directions: Think about the lives and accomplishments of Ben Franklin and Lawrence Hargrave. Write one paragraph about each, summarizing what you have learned about these two men.

Ben Franklin

Lawrence Hargrave

Writing Checklist

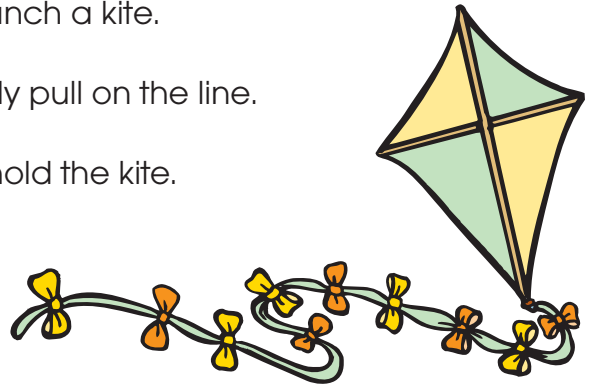
Reread your paragraphs carefully.

- | | |
|--|--|
| <input type="checkbox"/> My paragraphs make sense. | <input type="checkbox"/> I used correct spelling. |
| <input type="checkbox"/> I used correct punctuation. | <input type="checkbox"/> My paragraphs are well-organized. |
| <input type="checkbox"/> I have a good opening and ending. | <input type="checkbox"/> My paragraphs are interesting. |

Review

Directions: Number in order the steps for how to launch a kite.

- _____ With a steady breeze behind you, gently pull on the line.
- _____ Have your friend face you and gently hold the kite.
- _____ Your kite will rise.
- _____ Have your friend face into the wind.
- _____ Place some tension on the flying line by pulling on it.
- _____ Have a friend stand about 100 feet away from you.

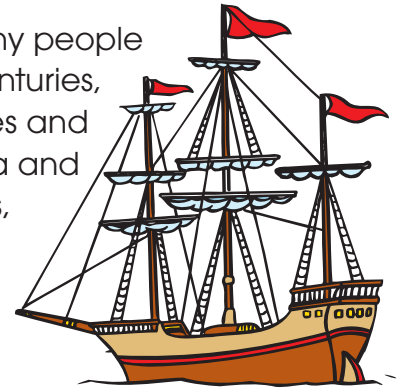


Directions: Write **true** or **false** for these statements about kite safety.

- _____ 1. You should not use wire for flying line.
- _____ 2. Fly any size kite you wish as long as you have the right flying line.
- _____ 3. If your kite gets caught in a tree, let the line go slack.
- _____ 4. It's okay to fly a kite in the rain.
- _____ 5. You should not fly a kite in crowded areas.
- _____ 6. You can use metal on your kite as long as it's not the flying line itself.
- _____ 7. You don't need to wear gloves unless you're flying a very large kite.
- _____ 8. You should not fly a kite around an airport.
- _____ 9. If your kite gets caught in power lines, just tug the line gently until it works free.
- _____ 10. The best place to fly a kite is in a large field.

Comprehension: Colonists Come to America

After Christopher Columbus voyaged to America in 1492, many people wanted to come live in the new land. During the 17th and 18th centuries, a great many Europeans, especially the English, left their countries and settled along the Atlantic Coast of North America between Florida and Canada. Some came to make a better life for themselves. Others, particularly the Pilgrims, the Puritans, and the Quakers, came for religious freedom.



A group of men who wanted gold and other riches from the new land formed the London Company. They asked the king of England for land in America and for permission to found a colony. They founded Jamestown, the first permanent English settlement in America, in 1607. They purchased ships and supplies, and located people who wanted to settle in America.

The voyage to America took about eight weeks and was very dangerous. Often, fierce winds blew the wooden ships off course. Many were wrecked. The ships were crowded and dirty. Frequently, passengers became ill, and some died. Once in America, the early settlers faced even more hardships.

Directions: Answer these questions about the colonists coming to America.

1. How long did it take colonists to travel from England to America? _____
2. Name three groups that came to America to find religious freedom.
a) _____ b) _____ c) _____
3. Why was the London Company formed? _____

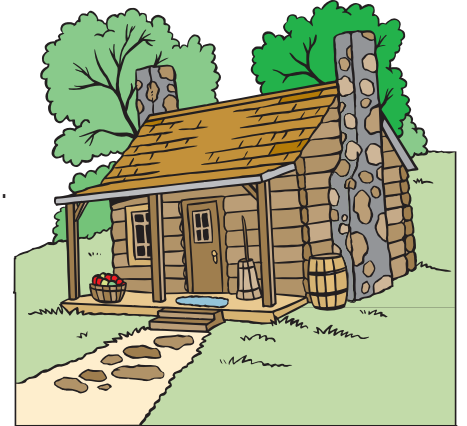
4. What was Jamestown? _____

5. Why was the voyage to America dangerous? _____

Recalling Details: Early Colonial Homes

When the first colonists landed in America, they had to find shelter quickly. Their first homes were crude bark and mud huts, log cabins, or dugouts, which were simply caves dug into the hillsides. As soon as possible, the settlers sought to replace these temporary shelters with comfortable houses.

Until the late 17th century, most of the colonial homes were simple in style. Almost all of the New England colonists—those settling in the northern areas of Massachusetts, Connecticut, Rhode Island, and New Hampshire—used wood in building their permanent homes. Some of the buildings had thatched roofs. However, they caught fire easily, and so were replaced by wooden shingles. The outside walls also were covered with wooden shingles to make the homes warmer and less drafty.



In the middle colonies—New York, Pennsylvania, New Jersey, and Delaware—the Dutch and German colonists often made brick or stone homes that were two-and-a-half or three-and-a-half stories high. Many southern colonists—those living in Virginia, Maryland, North Carolina, South Carolina, and Georgia—lived on large farms called plantations. Their homes were usually made of brick.

In the 18th century, some colonists became wealthy enough to replace their simple homes with mansions, often like those being built by the wealthy class in England. They were called Georgian houses because they were popular during the years that Kings George I, George II, and George III ruled England. Most were made of brick. They usually featured columns, ornately carved doors, and elaborate gardens.

Directions: Answer these questions about early colonial homes.

1. What were the earliest homes of the colonists?

2. What were the advantages of using wooden shingles?

3. What did Dutch and German colonists use to build their homes?

4. What were Georgian homes?

Recalling Details: The Colonial Kitchen

The most important room in the home of a colonial family was the kitchen. Sometimes it was the only room in the home. The most important element of the kitchen was the fireplace. Fire was essential to the colonists, and they were careful to keep one burning at all times. Before the man of the house went to bed, he would make sure that the fire was carefully banked so it would burn all night. In the morning, he would blow the glowing embers into flame again with a bellows. If the fire went out, one of the children would be sent to a neighbor's for hot coals. Because there were no matches, it would sometimes take a half hour to light a new fire, using flint, steel, and tinder.



The colonial kitchen, quite naturally, was centered around the fireplace. One or two large iron broilers hung over the hot coals for cooking the family meals. Above the fireplace, a large musket and powder horn were kept for protection in the event of an attack and to hunt deer and other game. Also likely to be found near the fireplace was a butter churn, where cream from the family's cow was beaten until yellow flakes of butter appeared.

The furniture in the kitchen—usually benches, a table, and chairs—were made by the man or men in the family. It was very heavy and not very comfortable. The colonial family owned few eating utensils—no forks and only a few spoons, also made by members of the family. The dishes included pewter plates, trenchers (wooden bowls with handles), and wooden mugs.

Directions: Answer these questions about the colonial kitchen.

1. What was the most important element of the colonial kitchen? _____
2. In colonial days, why was it important to keep a fire burning in the fireplace?

3. Name two uses of the musket.
a) _____ b) _____
4. Who made most of the furniture in the early colonial home?

Sequencing: Spinning

Most of the colonists could not afford to buy clothes sent over from Europe. Instead, the women and girls, particularly in the New England colonies, spent much time spinning thread and weaving cloth to make their own clothing. They raised sheep for wool and grew flax for linen.

In August, the flax was ready to be harvested and made into linen thread. The plants were pulled up and allowed to dry. Then, the men pulled the seed pods from the stalks, bundled the stalks, and soaked them in a stream for about five days. The flax next had to be taken out, cleaned, and dried. To get the linen fibers from the tough bark and heavy wooden core, the stalks had to be pounded and crushed. Finally, the fibers were pulled through the teeth of a brush called a "hatchel" to comb out the short and broken fibers. The long fibers were spun into linen thread on a spinning wheel.



The spinning wheel was low, so a woman sat down to spin. First, she put flax in the hollow end of a slender stick, called the spindle, at one end of the spinning wheel. It was connected by a belt to a big wheel at the other end. The woman turned the wheel by stepping on a pedal. As it turned, the spindle also turned, twisting the flax into thread. The woman constantly dipped her fingers into water to moisten the flax and keep it from breaking. The linen thread came out through a hole in the side of the spindle. It was bleached and put away to be woven into pieces of cloth.

Directions: Number in order the steps to make linen thread from flax.

- _____ The woman sat at the spinning wheel and put flax in the spindle.
- _____ Seed pods were pulled from the stalks; stalks were bundled and soaked.
- _____ In August, the flax was ready to be harvested and made into thread.
- _____ The stalks were pounded and crushed to get the linen fibers.
- _____ The thread was bleached and put away to be woven into cloth.
- _____ The short fibers were separated out with a "hatchel."
- _____ The woman dipped her fingers into water to moisten the flax.
- _____ The long fibers were spun into linen thread on a spinning wheel.
- _____ The woman turned the wheel by stepping on a pedal, twisting the flax into thread.
- _____ The plants were pulled up and allowed to dry.
- _____ The linen thread came out through a hole in the side of the spindle.

Recalling Details: Clothing in Colonial Times

The clothing of the colonists varied from the North to the South, accounting for the differences not only in climate, but also in the religions and ancestries of the settlers. The clothes seen most often in the early New England colonies where the Puritans settled were very plain and simple. The materials—wool and linen—were warm and sturdy.

The Puritans had strict rules about clothing. There were no bright colors, jewelry, ruffles, or lace. A Puritan woman wore a long-sleeved gray dress with a big white collar, cuffs, apron, and cap. A Puritan man wore long woolen stockings and baggy leather breeches, which were knee-length trousers. Adults and children dressed in the same style of clothing.

In the middle colonies, the clothing ranged from the simple clothing of the Quakers to the colorful, loose-fitting outfits of the Dutch colonists. Dutch women wore more colorful outfits than Puritan women, with many petticoats and fur trim. The men had silver buckles on their shoes and wore big hats decked with curling feathers.

In the southern colonies, where there were no religious restrictions against fancy clothes, wealthy men wore brightly colored breeches and coats of velvet and satin sent from England. The women's gowns also were made of rich materials and were decorated with ruffles, ribbons, and lace. The poorer people wore clothes similar to the simple dress of the New England Puritans.



Directions: Answer these questions about clothing in colonial times.

1. Why did the clothing of the colonists vary from the North to the South?

2. Why did the Puritans wear very plain clothing?

3. What was the nationality of many settlers in the middle colonies?

4. From what country did wealthy southern colonists obtain their clothing?

Recalling Details: Venn Diagrams

A **Venn diagram** is used to chart information that shows similarities and differences between two things. The outer part of each circle shows the differences. The intersecting part of the circles shows the similarities.

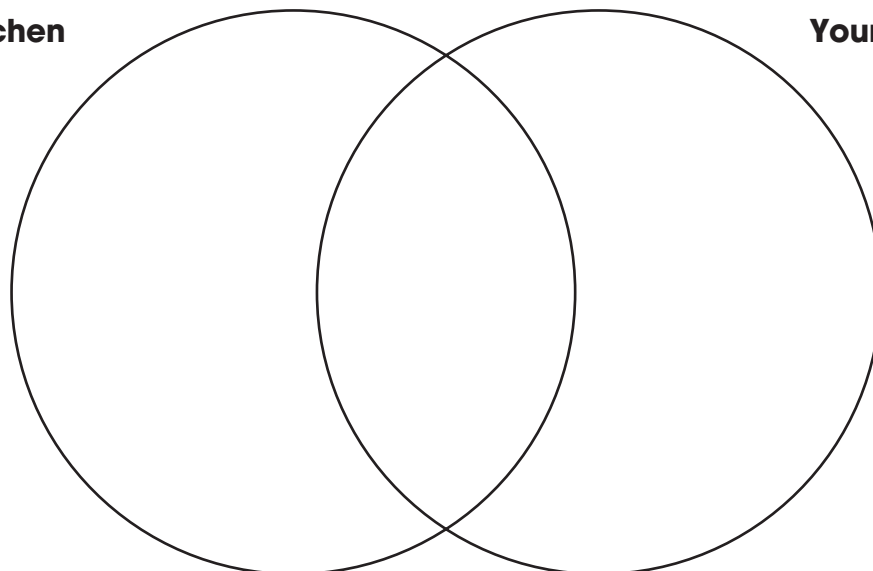
Example:



Directions: Complete the Venn diagram below. Think of at least three things to write in the outer part of each circle (differences) and at least three things to write in the intersecting part (similarities).

Colonial Kitchen

Your Kitchen



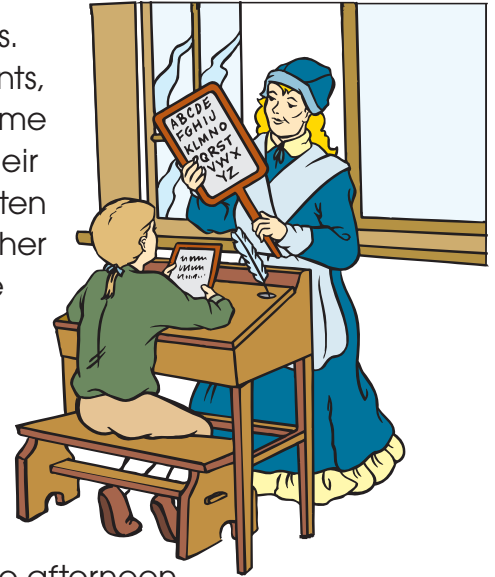
Comprehension: Colonial Schools

In early colonial days, there were no schools or teachers. Children learned what they could at home from their parents, but often their parents couldn't read or write either. Later, some women in the New England colonies began teaching in their homes. These first schools were known as "dame schools." Often the books used in these schools were not books at all, but rather "hornbooks"—flat, paddle-shaped wooden boards with the alphabet or Lord's Prayer on the front.

In 1647, a law was passed in the New England colonies requiring every town of 50 or more families to establish an elementary school. By the 1700s, one-room log schoolhouses were common. Children of all ages studied together under one strict schoolmaster. They attended school six days a week, from 7:00 or 8:00 in the morning until 4:00 or 5:00 in the afternoon.

Their only textbooks were the Bible and the *New England Primer*, which contained the alphabet, spelling words, poems, and questions about the Bible.

Like the New England colonies, the middle colonies also established schools. However, there were few schools in the southern colonies, where most of the people lived on widely separated farms. Wealthy plantation owners hired private teachers from England to teach their children, but the children of poor families received no education.



Directions: Answer these questions about colonial schools.

1. What was a hornbook? _____

2. What was required by the law passed in the New England colonies in 1647?

3. During the 1700s, what textbooks were used in the New England schools?

4. Why was it hard to establish schools in the southern colonies?

Compare/Contrast: Schools

Directions: Think about the differences and similarities between colonial and modern schools. Use the chart below to help organize your ideas. Then, write a paragraph discussing the similarities and a paragraph discussing the differences. The topic sentences have been written for you.

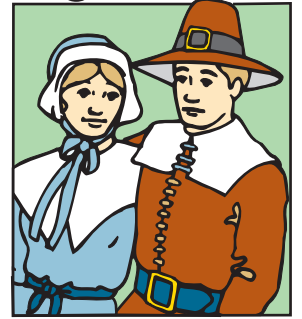
Similarities	Differences

There are several similarities between colonial schools and schools today.

Although there are similarities between colonial schools and modern schools, there are also many differences.

Comprehension: Religion in New England

Many New England colonists had come to America for religious freedom. Religion was very important to them. One of the first buildings erected in any new settlement was a church, or meetinghouse. They were generally in the center of town and were used for public meetings of all kinds. These early meetinghouses were plain, unpainted wood buildings. Later churches were larger and more elaborate. They were usually painted white and had tall, graceful bell towers rising from the roof.



Although they came to America to have freedom of worship, the Puritans thought that everyone in the colonies should worship the same way they did. Because there were so many of them, the Puritans controlled the government in much of New England. They were the only ones allowed to vote, and they passed very strict laws. Lawbreakers received harsh punishments. For example, someone caught lying might be forced to stand in the town square for hours locked in a pillory—wooden boards with holes cut in them for the head and hands. For other minor offenses, the offender was tied to a whipping post and given several lashes with a whip.

Except in cases of extreme illness, everyone in the New England colonies had to attend church on Sunday. The minister stood in a pulpit high above the pews to deliver his sermon, which could last four or five hours. The people sat on hard, straight-backed pews. In the winter, there was no heat, so church members brought foot warmers from home to use during the long services. In many churches, a “tithingman” walked up and down the aisles carrying a long stick. On one end there were feathers attached; the other end had a knob. If anyone dozed off, the tithingman would tickle him or her with the feathers. If this did not rouse the offender, he would thump them soundly with the knob.

Directions: Answer these questions about religion in the colonies.

1. The main idea is:

- Many New England colonists had come to America for religious freedom, and religion was very important to them.
- One of the first buildings erected in any new settlement was a church.

2. Which religious group exercised a lot of power in the New England colonies?

3. What was a pillory? _____

4. What was the only acceptable excuse for missing Sunday church services in the New England colonies? _____

5. What was the job of the tithingman? _____

Writing: Problem and Solution

Directions: Follow the instructions below.

1. Think of a problem the colonial Americans may have encountered. Write a paragraph about this problem. In the paragraph, be sure to state the problem, and then discuss why it would have been a problem for the colonists.

2. Think about a solution to the problem above. Write a paragraph outlining your ideas for the solution. Remember to state the solution to the problem and then your ideas to solve the problem.

Review

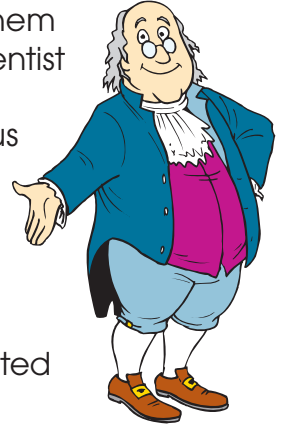
Many great colonists made an impact on American history. Among them was Benjamin Franklin, who left his mark as a printer, author, inventor, scientist and statesman. He has been called “the wisest American.”

Franklin was born in Boston in 1706, one of 13 children in a very religious Puritan household. Although he had less than two years of formal education, his tremendous appetite for books served him well. At age 12, he became an apprentice printer at *The New England Courant* and soon began writing articles that poked fun at Boston society.

In 1723, Franklin ran away to Philadelphia, where he started his own newspaper. He was very active in the Philadelphia community. He operated a bookstore and was named postmaster. He also helped to establish a library, a fire company, a college, an insurance company, and a hospital. His well-known *Poor Richard's Almanac* was first printed in 1732.

Over the years, Franklin maintained an interest in science and mechanics, leading to such inventions as a fireplace stove and bifocal lenses. In 1752, he gained world fame with his kite-and-key experiment, which proved that lightning was a form of electricity.

Franklin was an active supporter of the colonies throughout the Revolutionary War. He helped to write and was a signer of the Declaration of Independence in 1776. In his later years, he skillfully represented America in Europe, helping to work out a peace treaty with Great Britain.



Directions: Answer these questions about Benjamin Franklin.

1. The main idea is:

- Many great colonists made an impact on American history.
- Benjamin Franklin was a great colonist who left his mark as a printer, author, inventor, scientist, and statesman.

2. How did Benjamin Franklin gain world fame? _____

3. What did Franklin sign and help to write? _____

4. Number in order the following accomplishments of Benjamin Franklin.

- _____ Served as representative of America in Europe
- _____ Began printing *Poor Richard's Almanac*
- _____ Experimented with electricity
- _____ Started his own newspaper
- _____ Helped to write and sign the Declaration of Independence
- _____ Served as apprentice printer at *The New England Courant*

Review

Directions: Match each item with its description. If necessary, review the section on colonial times.

a. hornbooks

b. 1647

c. pillory

d. Ben Franklin

e. plantations

f. 1776

g. tithingman

h. spinning wheel

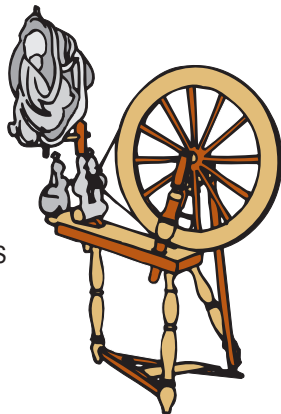
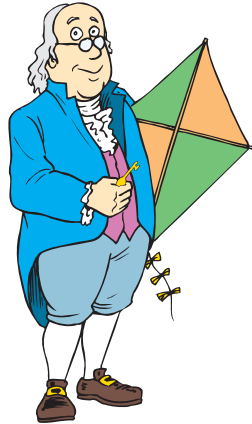
i. hatchel

j. 1492

k. trenchers

l. flax

m. dame schools



_____ year Columbus sailed to America

_____ schools where New England women taught in their homes

_____ man who kept worshippers awake during Sunday services

_____ plants harvested for linen

_____ paddle-shaped wooden boards with text on them

_____ law written in this year required towns of 50 or more to establish a school

_____ punishment rack with holes for head and hands

_____ wooden bowls with handles

_____ author of *Poor Richard's Almanac*

_____ large farms in the South

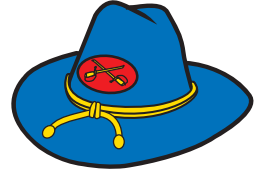
_____ wooden machine used to spin wool or flax into thread

_____ used to comb out the short and broken flax fibers

_____ year Declaration of Independence was signed

Using Prior Knowledge: Abraham Lincoln and the Civil War

Directions: Before reading about Abraham Lincoln and the Civil War in the following section, answer these questions.



1. The Civil War began because _____

2. Abraham Lincoln is famous today because _____

3. What brought about the end of slavery in the United States? _____

4. The Gettysburg Address begins with the famous line: "Four score and seven years ago. . . ." What does this mean?

5. How did Abraham Lincoln die? _____

Main Idea: The Gettysburg Address

On November 19, 1863, President Abraham Lincoln gave a short speech to dedicate a cemetery for Civil War soldiers in Gettysburg, Pennsylvania, where a famous battle was fought. He wrote five drafts of the Gettysburg Address, one of the most stirring speeches of all time.

Four score and seven years ago, our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting place for those who here gave their lives that this nation might live. It is altogether fitting and proper that we should do this.

But, in a larger sense, we cannot dedicate—we cannot consecrate—we cannot hallow—this ground. The brave men, living and dead, who struggled here have consecrated it far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave their last full measure of devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom—and that government of the people, by the people, for the people shall not perish from this earth.

Directions: Answer the questions about the Gettysburg Address.

1. Circle the main idea:

This speech will be long remembered as a tribute to those who died fighting in the Civil War.

This speech is to honor the soldiers who gave their lives so that the nation could have freedom for all citizens.



2. What happened on the ground where the cemetery stood? _____

Comprehension: The Gettysburg Address

Directions: Use context clues or a dictionary to answer these questions about the Gettysburg Address.

1. What is the correct definition of **conceived**? _____

2. What is the correct definition of **consecrate**? _____

3. What is the correct definition of **hallow**? _____

4. What is the correct definition of **devotion**? _____

5. What is the correct definition of **resolve**? _____

6. What is the correct definition of **vain**? _____

7. What is the correct definition of **perish**? _____

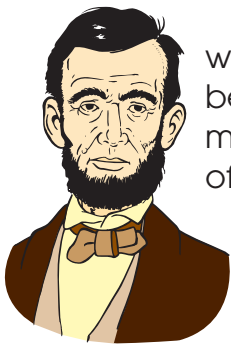
8. What is the correct definition of **civil**? _____

9. In your own words, what point was President Lincoln trying to make? _____



Comprehension: The Emancipation Proclamation

On September 22, 1862, a year before delivering the Gettysburg Address, President Lincoln delivered the Emancipation Proclamation, which stated that all slaves in Confederate states should be set free. Since the Confederate states had already seceded (withdrawn) from the Union, they ignored the proclamation. However, the proclamation did strengthen the North’s war effort. About 200,000 black men—mostly former slaves—enlisted in the Union Army. Two years later, the 13th Amendment to the Constitution ended slavery in all parts of the United States.



I, Abraham Lincoln, do order and declare that all persons held as slaves within said designated States and parts of States are, and henceforward shall be, free; and that the Executive Government of the United States, including military and naval authorities thereof, shall recognize and maintain the freedom of said persons.

And I hereby enjoin upon the people so declared to be free to abstain from all violence, unless in necessary self-defense; and I recommend to them that, in all cases where allowed, they labor faithfully for reasonable wages.

And I further declare and make known that such persons of suitable condition will be received into the armed forces of the United States to garrison forts, positions, stations, and other places, and to man vessels of all sorts in said service.

(This is not the full text of the Emancipation Proclamation.)

Directions: Answer the questions about the Emancipation Proclamation.

1. How did the Emancipation Proclamation strengthen the North’s war effort?

2. Which came first, the Emancipation Proclamation or the Gettysburg Address?

3. Which amendment to the Constitution grew out of the Emancipation Proclamation?

4. **Secede** means to quit. fight. withdraw.

Comprehension: The Emancipation Proclamation

Directions: Use context clues or a dictionary to answer these questions about the Emancipation Proclamation.

1. What is the correct definition of **designated**? _____

2. What is the correct definition of **military**? _____

3. What is the correct definition of **naval**? _____

4. What is the correct definition of **abstain**? _____

5. What is the correct definition of **suitable**? _____

6. What is the correct definition of **garrison**? _____

7. What is the correct definition of **vessels**? _____

8. In your own words, what did the Emancipation Proclamation accomplish?

Comprehension: Lincoln and the South

Many people think that Abraham Lincoln publicly came out against slavery from the beginning of his term as president. This is not the case. Whatever his private feelings, he did not criticize slavery publicly. Fearful that the southern states would secede, or leave, the Union, he pledged to respect the southern states’ rights to own slaves. He also pledged that the government would respect the southern states’ runaway slave laws. These laws required all citizens to return runaway slaves to their masters.

Clearly, Lincoln did not want the country torn apart by a civil war. In the following statement, written in 1861 shortly after he became president, he made it clear that the federal government would do its best to avoid conflict with the southern states.

I hold that, in contemplation of the universal law and the Constitution, the Union of these states is perpetual. . . . No state, upon its own mere motion, can lawfully get out of the Union. . . . I shall take care, as the Constitution itself expressly enjoins upon me, that the laws of the Union be faithfully executed in all the states. . . . The power confided to me will be used to hold, occupy, and possess the property and places belonging to the government, and to collect the duties and imposts. . . .

In your hands, my dissatisfied fellow-countrymen, and not in mine, is the momentous issue of civil war. The government will not assail you. You can have no conflict without yourselves being the aggressors. You have no oath registered in heaven to destroy the government, while I shall have the most solemn one to “preserve, protect, and defend” it.

Directions: Use context clues for these definitions.

1. What is the correct definition of **assail**? _____

2. What is the correct definition of **enjoin**? _____

3. What is the correct definition of **contemplation**? _____

Directions: Answer these questions about Lincoln and the southern states.

4. Lincoln is telling the southern states that the government

- does want a war. doesn't want a war. will stop a war.

5. As president, Lincoln pledged to “preserve, protect and defend”

- slavery. the northern states. the Union.

Comprehension: Away Down South in Dixie

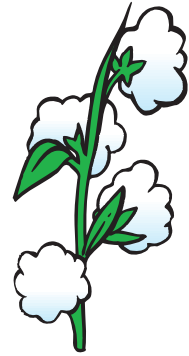
Although many southerners disapproved of slavery, the pressure to go along with the majority who supported slavery was very strong. Many of those who thought slavery was wrong did not talk about their opinions. It was dangerous to do so!

The main reason the southern states seceded from the Union in 1861 was because they wanted to protect their right to own slaves. They also wanted to increase the number of slaves so they could increase production of cotton and other crops that slaves tended. Many Civil War monuments in the South are dedicated to a war that was described as "just and holy."

"Dixie," a song written in 1859 that is still popular in the South, sums up the attitude of many southerners. As the song lyrics show, southerners' loyalties lay not with the Union representing all the states, but with the South and the southern way of life.

Dixie

I wish I was in Dixie, Hoo-ray! Hoo-ray!
 In Dixie land I'll take my stand
 To live and die in Dixie.
 Away, away, away down south in Dixie!
 Away, away, away down south in Dixie!
 (This is not the full text of the song.)



Directions: Answer these questions about southerners and "Dixie."

1. Why did southerners who disapproved of slavery keep their opinions to themselves?

2. Why did southerners want more slaves? _____

3. What are the words on some southern Civil War monuments? _____

4. What "stand" is referred to in "Dixie"?

stand for slavery

stand against slavery

stand for cotton

Fact and Opinion

Directions: Read each sentence. Then, draw an **X** in the box to tell whether it is a fact or opinion.

- | | | |
|--|-------------------------------|----------------------------------|
| 1. "Dixie" is a beautiful song! | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 2. It was written in 1859 by a man named Daniel Emmett, who died in 1904. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 3. The song became a rallying cry for southerners, because it showed where their loyalties were. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 4. I think their loyalty to slavery was absolutely wrong! | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 5. These four states where people owned slaves did not secede from the Union: Delaware, Maryland, Kentucky, and Missouri. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 6. The people in these states certainly made the right moral choice. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 7. The ownership of one human being by another is absolutely and totally wrong under any circumstances. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 8. In the states that did not secede from the Union, some people fought for the Union, and others fought for the Confederacy of Southern States. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 9. Sometimes brothers fought against brothers on opposite sides of the war. | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |
| 10. What a horrible situation to be in! | <input type="checkbox"/> Fact | <input type="checkbox"/> Opinion |



Recalling Details: The Civil War

Although they were outnumbered, most southerners were convinced they could win the Civil War. The white population of the southern states that had seceded from the Union was 5.5 million. The population was 18.9 million in the 19 states that stayed with the Union. Despite these odds, southerners felt history was on their side.

After all, the colonists had been the underdogs against the British and had won the War of Independence. Europeans also felt that Lincoln could not force the South to rejoin the Union. The United Netherlands had successfully seceded from Spain. Greece had seceded from Turkey. Europeans were laying odds that two countries would take the place of what had once been the United States.

Directions: Answer these questions, and complete the puzzle about the Civil War.

1. What was the difference in population between the Union and the Confederate states?

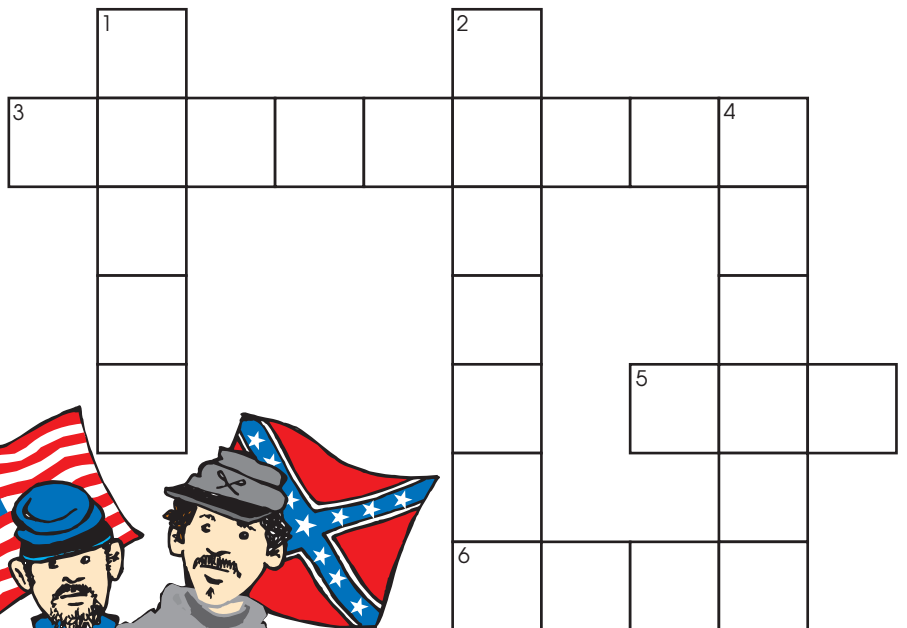
2. Circle the main idea:

Although they were outnumbered, many people here and abroad felt the South would win the Civil War.

Because they were outnumbered, southerners knew that winning the Civil War was a long shot.

Across:

- 3. They won the War of Independence against England.
- 5. Did Europeans believe the South would win the war?
- 6. ___teen states belonged to the Union.



Down:

- 1. Slave owners lived in this area of the country.
- 2. The president during the Civil War
- 4. To withdraw from the Union



Recalling Details: Abraham Lincoln

Directions: Complete the following exercises.

1. Describe two accomplishments of Abraham Lincoln. _____

2. Complete the time line by writing and illustrating the events.

--	--	--	--	--

1861

1862

1863

1864

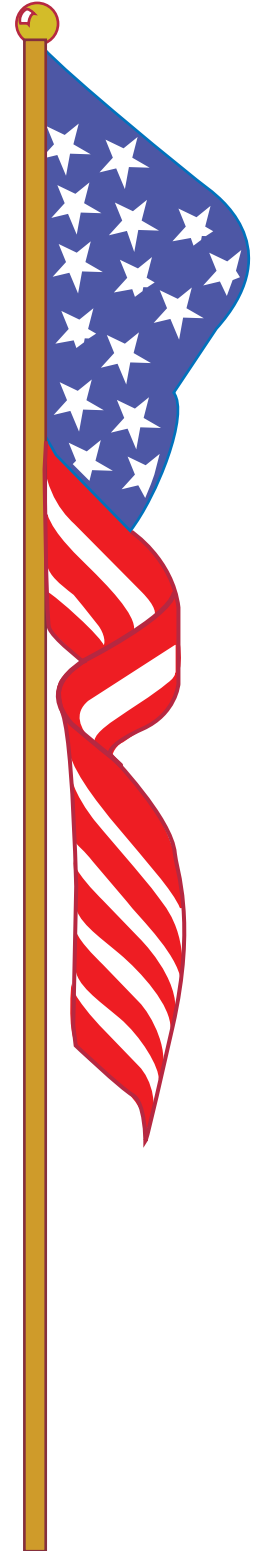
1865

3. In your opinion, what could Lincoln have done differently to end the Civil War sooner?

Fact and Opinion

Directions: Read each sentence. Then, draw an **X** in the box to tell whether it is a fact or an opinion.

1. Lincoln warned the southern states that they could not legally leave the Union. Fact Opinion
2. I believe Lincoln thought the northern states were the best because they did not have slaves. Fact Opinion
3. I think Lincoln did the right thing, don't you? Fact Opinion
4. The issues that sparked the Civil War were complicated and difficult ones. Fact Opinion
5. It would take a historian to really understand them! Fact Opinion
6. The "dissatisfied fellow-countrymen" Lincoln refers to in his statement lived in the southern states. Fact Opinion
7. As president, Lincoln took an oath to "preserve, protect, and defend" the Union, which included all the states. Fact Opinion
8. Lincoln did his personal best to hold the country together, but it didn't do one bit of good. Fact Opinion
9. The Confederate States of America had already been organized in February 1861, a month before Lincoln was sworn in as president. Fact Opinion
10. Poor Abraham Lincoln—what a crummy start to his presidency! Fact Opinion



Using Prior Knowledge: Anthems and Songs

Directions: Before reading about anthems and songs in the following section, answer these questions.

1. How do national anthems help pull a country together? _____

2. Describe what you know about how and why "The Star-Spangled Banner" was written.

3. What is your favorite anthem or song? _____

4. What images do the words of your favorite anthem or song bring to mind? Why do you like it?



Comprehension: Our National Anthem

Written in 1814 by Francis Scott Key, our American national anthem is stirring, beautiful, and difficult to sing. Key wrote the song while aboard a ship off the coast of Maryland, where one long night he watched the gunfire from a British attack on America's Fort McHenry. The following morning, he wrote "The Star-Spangled Banner" when, to his great joy, he saw the American flag still flying over the fort—a sign that the Americans had not lost the battle.

The Star-Spangled Banner

Oh say, can you see, by the dawn's early light,
 What so proudly we hail'd at the twilight's last gleaming?
 Whose broad stripes and bright stars, thro' the perilous fight,
 O'er the ramparts we watch'd were so gallantly streaming?
 And the rockets' red glare, the bombs bursting in air,
 Gave proof thro' the night that our flag was still there.
 Oh say, does that star-spangled banner yet wave
 O'er the land of the free and the home of the brave?

Oh, the shore dimly seen thro' the mists of the deep,
 Where the foe's haughty host in dread silence reposes,
 What is that which the breeze, o'er the towering steep,
 As it fitfully blows, half conceals, half discloses?
 Now it catches the gleam of the morning's first beam,
 In full glory reflected, now shines on the stream:
 'Tis the star-spangled banner: O, long may it wave
 O'er the land of the free and the home of the brave!



Directions: Answer these questions about the first two verses of "The Star-Spangled Banner."

1. Who wrote "The Star-Spangled Banner"? _____
2. What is "The Star-Spangled Banner"? _____
3. In what year was the song written? _____
4. At what time of day was the song written? _____
5. Tell what is meant by the lines ". . . the rockets' red glare, the bombs bursting in air/Gave proof through the night that our flag was still there."

Comprehension: “The Star-Spangled Banner”

Directions: Use context clues or a dictionary to answer these questions about “The Star-Spangled Banner.”

1. What is the correct definition of **spangled**? _____

2. What is the correct definition of **twilight**? _____

3. What is the correct definition of **ramparts**? _____

4. What is the correct definition of **gallantly**? _____

5. What is the correct definition of **haughty**? _____

6. What is the correct definition of **reposes**? _____

7. Why do you think United States citizens only sing the first verse of “The Star-Spangled Banner”?

8. What war was being fought when this song was written?

9. Have you ever heard the second verse of “The Star-Spangled Banner”? Knowing the tune, can you sing the second verse?

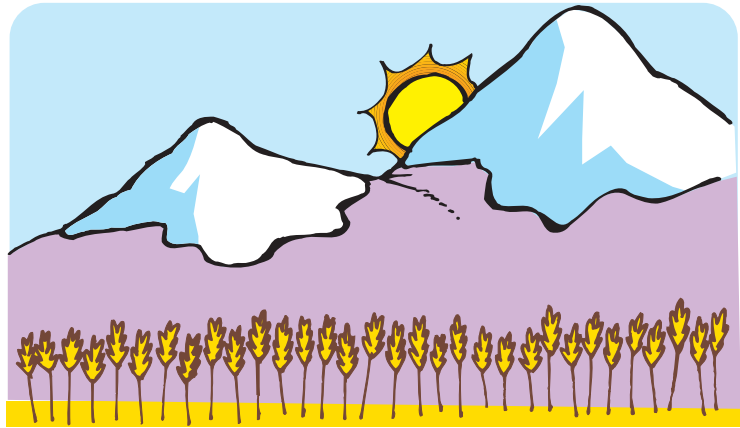


Comprehension: “America the Beautiful”

Written in 1895 by Katherine Lee Bates, “America the Beautiful” is another very popular patriotic song. It is so popular, in fact, that some people would like to see it replace “The Star-Spangled Banner” as the United States’ national anthem. Ms. Bates was inspired to write the song while visiting Colorado, where she was struck by the splendor of the mountains. Today, “America the Beautiful” remains a tribute to our country’s natural beauty.

America the Beautiful

Oh beautiful for spacious skies,
 For amber waves of grain,
 For purple mountains majesties
 Above the fruited plain!
 America! America!
 God shed His grace on thee,
 And crown thy good
 With brotherhood
 From sea to shining sea!



Directions: Use context clues or a dictionary to answer these questions about “America the Beautiful.”

1. What is the correct definition of **tribute**? _____

2. What is the correct definition of **amber**? _____

What other word might you use for **amber** in the song? _____

3. What is the singular form of **majesties**? What does it mean in the song? _____

4. “From sea to shining sea” means the oceans to the east and west of the United States. What are their names?

5. Do you think “America the Beautiful” should be our national anthem? Why or why not?

Comprehension: Civil War Marching Song

When soldiers march, they sometimes sing a song to help them keep in step. One of the most famous marching songs of the Civil War was the "Battle Hymn of the Republic," written in 1861 by Julia Ward Howe. Mrs. Howe wrote the song after visiting a Union army camp in the North. The words are about how God is on the side of the soldiers.

Battle Hymn of the Republic

Mine eyes have seen the glory of the coming of the Lord,
 He is trampling out the vintage where the grapes of wrath are stored,
 He has loosed the fateful lightning of his terrible swift sword,
 His truth is marching on.

Glory, glory hallelujah! Glory, glory hallelujah!
 Glory, glory hallelujah! His truth is marching on.

I have seen him in the watchfires of a hundred circling camps,
 I have builded him an altar in the evening dews and damps,
 I can read his righteous sentence by the dim and flaring lamps,
 His day is marching on.

Glory, glory hallelujah! Glory, glory hallelujah!
 Glory, glory hallelujah! His truth is marching on.



Directions: Answer these questions about the "Battle Hymn of the Republic."

1. Who wrote the "Battle Hymn of the Republic"? _____
2. When was the song written? _____
3. What war was in progress at the time? _____
4. Why did soldiers sing while they marched? _____

5. What marches on along with the soldiers? _____
6. What did the soldiers sing about building in the evening?

Review

National anthems, work songs, and marching songs share some common characteristics. Perhaps the most important characteristic is that the words strike an emotional response in singers and listeners alike.

Have you ever sung “The Star-Spangled Banner” at a baseball game or other large public event? The next time you do, look around as you sing. You will see that Americans from all walks of life and all races sing the song proudly. The words to the national anthem help create a feeling of unity among people who may not have much in common. The same is true of the national anthems of France, England, and other countries.

Another characteristic of these types of songs is that the words are simple, the message is clear, and the tune should be easy to carry. This is not always true, of course. Many people’s voices crack during the high notes of “The Star-Spangled Banner.” But attempts to change the national anthem to “America the Beautiful” or another song with a simpler tune have always met with dismal failure. It may be hard to sing, but most Americans wouldn’t trade it for any other tune. It’s a long-held American tradition, and nearly everyone knows the words. Americans love what this song stands for. They are proud to live in a country that is the “land of the free.”



Directions: Answer these questions about the characteristics of national anthems, work songs, and marching songs.

1. Explain what goes into writing a good national anthem. _____

2. What does our national anthem help do? _____

3. What happens each time someone tries to change the national anthem to “America the Beautiful” or another song?

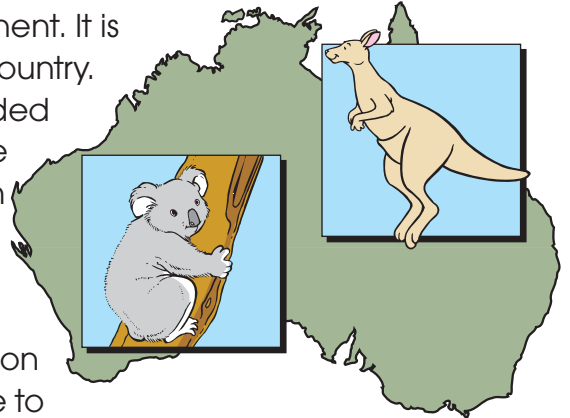
4. Why do people stick with “The Star-Spangled Banner” as our national anthem?

Recalling Details: The Island Continent

Australia is the only country that fills an entire continent. It is the smallest continent in the world but the sixth largest country. Australia, called the island continent, is totally surrounded by water—the Indian Ocean on the west and south, the Pacific Ocean on the east, and the Arafura Sea, which is formed by these two oceans coming together, to the north.

The island continent is, in large part, a very dry, flat land. Yet it supports a magnificent and unusual collection of wildlife. Because of its remoteness, Australia is home to plants and animals that are not found anywhere else in the world. Besides the well-known kangaroo and koala, the strange animals of the continent include the wombat, dingo, kookaburra, emu, and, perhaps the strangest of all, the duckbill platypus.

There are many physical features of Australia that also are unique, including the central part of the country known as the Outback, which consists of three main deserts—the Great Sandy, the Gibson, and the Great Victoria. Because much of the country is desert, more than half of all Australians live in large, modern cities along the coast. There are also many people living in the small towns on the edge of the Outback, where there is plenty of grass for raising sheep and cattle. In fact, there are about five times as many sheep in Australia as there are people!



Directions: Answer these questions about Australia.

1. What are the three large bodies of water that surround Australia?

a) _____ b) _____ c) _____

2. Besides the kangaroo and the koala, name three other unusual animals found only in Australia.

a) _____ b) _____ c) _____

3. What three deserts make up the Outback?

a) _____ b) _____ c) _____

Comprehension: The Aborigines

The native, or earliest known, people of Australia are the Aborigines (ab-ur-IJ-uh-neeZ). They arrived on the continent from Asia more than 20,000 years ago. Before the Europeans began settling in Australia during the early 1800s, there were about 300,000 Aborigines. But the new settlers brought diseases that killed many of these native people. Today, there are only about 125,000 Aborigines living in Australia, many of whom now live in the cities.

The way of life of the Aborigines, who still live like their ancestors, is closely related to nature. They live as hunters and gatherers and do not produce crops or raise livestock. The Aborigines have no permanent settlements, only small camps near watering places. Because they live off the land, they must frequently move about in search of food. They have few belongings and little or no clothing.

Some tribes of Aborigines, especially those who live in the desert, may move 100 times in a year. They might move more than 1,000 miles on foot during that time. These tribes set up temporary homes, such as tents made of bark and igloo-like structures made of grass.

The Aborigines have no written language, but they have developed a system of hand signals. These are used during hunting when silence is necessary and during their elaborate religious ceremonies when talking is forbidden.



Directions: Circle **True** or **False** for these statements about Aborigines.

1. The Aborigines came from Europe to settle in Australia. True False
2. The Aborigines live as hunters and gatherers rather than as farmers. True False
3. The tribes move about often to find jobs. True False
4. The people move often to help them raise their livestock. True False
5. Aborigine tribes always move 200 times a year. True False

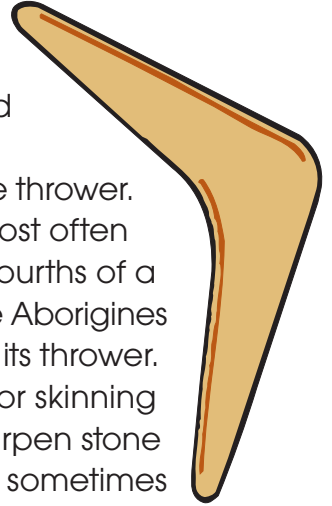
Main Idea/Comprehension: The Boomerang

The Aborigines have developed a few tools and weapons, including spears, flint knives, and the boomerang. The boomerang comes in different shapes and has many uses. This curved throwing stick is used for hunting, playing, digging, cutting, and even making music.

You may have seen a boomerang that, when thrown, returns to the thrower. This type of boomerang is sometimes used in duck hunting, but it is most often used as a toy and for sporting contests. It is lightweight—about three-fourths of a pound—and has a big curve in it. However, the boomerang used by the Aborigines for hunting is much heavier and is nearly straight. It does not return to its thrower.

Because of its sharp edges, the boomerang makes a good knife for skinning animals. The Aborigines also use boomerangs as digging sticks, to sharpen stone blades, to start fires, and as swords and clubs in fighting. Boomerangs sometimes are used to make music—two clapped together provide rhythmic background for dances. Some make musical sounds when they are pulled across one another.

To throw a boomerang, the thrower grasps it at one end and holds it behind his head. He throws it overhanded, adding a sharp flick of the wrist at the last moment. It is thrown into the wind to make it come back. A skillful thrower can do many tricks with his boomerang. He can make it spin in several circles, or make a figure eight in the air. He can even make it bounce on the ground several times before it soars into the air and returns.



Directions: Answer these questions about boomerangs.

1. The main idea is:

The Aborigines have developed a few tools and weapons, including spears, flint knives, and the boomerang.

The boomerang comes in different shapes and has many uses.

2. To make it return, the thrower tosses the boomerang

into the wind. against the wind.

3. List three uses for the boomerang.

a) _____

b) _____

c) _____

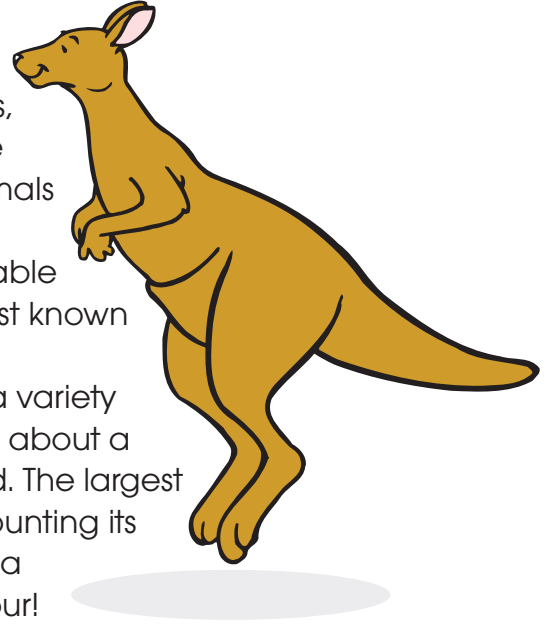
Comprehension: The Kangaroo

Many animals found in Australia are not found anywhere else in the world. Because the island continent was separated from the rest of the world for many years, these animals developed in different ways. Many of the animals in Australia are marsupials. Marsupials are animals whose babies are born underdeveloped and are then carried in a pouch on the mother's body until they are able to care for themselves. The kangaroo is perhaps the best known of the marsupials.

There are 45 kinds of kangaroos, and they come in a variety of sizes. The smallest is the musky rat kangaroo, which is about a foot long, including its hairless tail. It weighs only a pound. The largest is the gray kangaroo, which is more than 9 feet long, counting its tail, and can weigh 200 pounds. When moving quickly, a kangaroo can leap 25 feet and move at 30 miles an hour!

A baby kangaroo, called a joey, is totally helpless at birth. It is only three-quarters of an inch long and weighs a fraction of an ounce. The newly born joey immediately crawls into its mother's pouch and remains there until it is old enough to be independent—which can be as long as eight months.

Kangaroos eat grasses and plants. They can cause problems for farmers and ranchers in Australia because they compete with cattle for pastures. During a drought, kangaroos may invade ranches and even airports looking for food.



Directions: Answer these questions about kangaroos.

1. What are marsupials? _____

2. What is the smallest kangaroo? _____
3. What is a baby kangaroo called? _____
4. Why did Australian animals develop differently from other animals? _____

Comprehension: The Koala

The koala lives in eastern Australia in the eucalyptus (you-ca-LIP-tes) forests. These slow, gentle animals hide by day, usually sleeping in the trees. They come out at night to eat. Koalas eat only certain types of eucalyptus leaves. Their entire way of life centers on this unique diet. The koala's digestive system is specially adapted for eating eucalyptus leaves. In fact, to other animals, these leaves are poisonous!

The woolly, round-eared koala looks like a cuddly teddy bear, but it is not related to any bear. It is a marsupial like the kangaroo. And, like the joey, a baby koala requires a lot of care. It will remain constantly in its mother's pouch until it is six months old. After that, a baby koala will ride piggyback on its mother for another month or two, even though it is nearly as big as she is. Koalas have few babies—only one every other year. While in her pouch, the baby koala lives on its mother's milk. After it is big enough to be on its own, the koala will almost never drink anything again.

Oddly, the mother koala's pouch is backwards—the opening is at the bottom. This leads scientists to believe that the koala once lived on the ground and walked on all fours. But at some point, the koala became a tree dweller. This makes an upside-down pouch very awkward! The babies keep from falling to the ground by holding on tightly with their mouths. The mother koala has developed strong muscles around the rim of her pouch that also help to hold the baby in.



Directions: Answer these questions about koalas.

1. What is the correct definition for **eucalyptus**?

- enormous a type of tree rain

2. What is the correct definition for **digestive**?

- the process in which food is absorbed in the body
 the process of finding food
 the process of tasting

3. What is the correct definition for **dweller**?

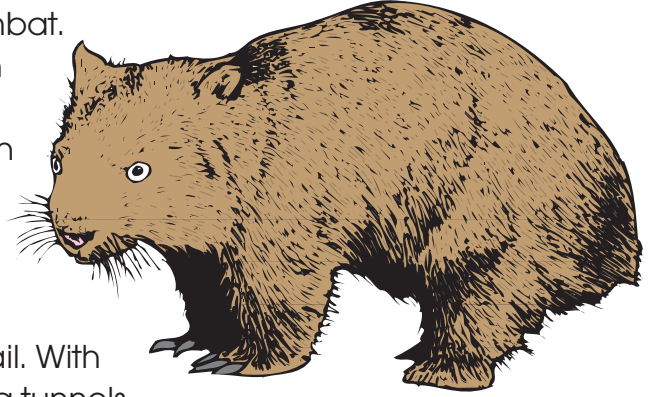
- one who climbs one who eats one who lives in

Comprehension: The Wombat

Another animal unique to Australia is the wombat. The wombat has characteristics in common with other animals. Like the koala, the wombat is also a marsupial with a backwards pouch. The pouch is more practical for the wombat, which lives on the ground rather than in trees. The wombat walks on all fours, so the baby is in less danger of falling out.

The wombat resembles a beaver without a tail. With its strong claws, it is an expert digger. It makes long tunnels beneath cliffs and boulders in which it sleeps all day. At night, it comes out to look for food. It has strong, beaver-like teeth to chew through the various plant roots it eats. A wombat's teeth have no roots, like a rodent's. Its teeth keep growing from the inside as they are worn down from the outside.

The wombat, which can be up to 4 feet long and weighs 60 pounds when full grown, eats only grass, plants, and roots. It is a shy, quiet, and gentle animal that would never attack. But when angered, it has a strong bite and very sharp teeth! And, while wombats don't eat or attack other animals, the many deep burrows they dig to sleep in are often dangerous to the other animals living nearby.



Directions: Answer these questions about the wombat.

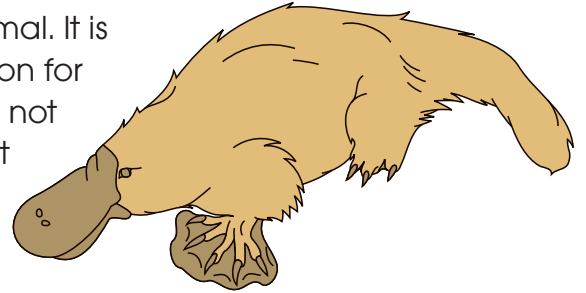
1. How is the wombat similar to the koala? _____

2. How is the wombat similar to the beaver? _____

3. How is the wombat similar to a rodent? _____

Comprehension: The Duckbill Platypus

Australia’s duckbill platypus is a most unusual animal. It is very strange-looking and has caused a lot of confusion for people studying it. For many years, even scientists did not know how to classify it. The platypus has webbed feet and a bill like a duck. But it doesn’t have wings, has fur instead of feathers, and has four legs instead of two. The baby platypus gets milk from its mother, like a mammal, but it is hatched from a tough-skinned egg, like a reptile. A platypus also has a poisonous spur on each of its back legs that is like the tip of a viper’s fangs. Scientists have put the platypus—along with another strange animal from Australia called the spiny anteater—in a special class of mammal called “monotremes.”



The platypus has an amazing appetite! It has been estimated that a full-grown platypus eats about 1,200 earthworms, 50 crayfish, and numerous tadpoles and insects every day. The platypus is an excellent swimmer and diver. It dives under the water of a stream and searches the muddy bottom for food.

A mother platypus lays one or two eggs, which are very small—only about an inch long—and leathery in appearance. During the seven to 14 days it takes for the eggs to hatch, the mother never leaves them, not even to eat. The tiny platypus, which is only a half-inch long, cuts its way out of the shell with a sharp point on its bill. This point is known as an “egg tooth,” and it will fall off soon after birth. (Many reptiles and birds have egg teeth, but they are unknown in other mammals.) By the time it is 4 months old, the baby platypus is about a foot long—half its adult size—and is learning how to swim and hunt.

Directions: Answer these questions about the duckbill platypus.

1. In what way is a duckbill platypus like other mammals? _____

2. In what way is it like a reptile? _____
3. What other animal is in the class of mammal called “monotremes”?

4. What makes up the diet of a platypus? _____
5. On what other animals would you see an “egg tooth”? _____

Recalling Details: Animals of Australia

Directions: Complete the chart with information from the selection on Australian animals.



	Gray Kangaroo	Koala	Wombat	Platypus
What are the animal's physical characteristics?				
What is the animal's habitat?				
What does the animal eat?				

Main Idea/Recalling Details: Land Down Under

Australia and New Zealand are often referred to as the “land down under.” The name, made popular by American soldiers stationed there during World War II, grew out of the idea that these two countries are opposite or below Europe on the globe. While Australia and New Zealand are often linked, they are individual countries, separated by more than 1,000 miles of ocean.



Their landscapes are quite different. New Zealand is made up of two main islands, North and South Island, which are nearly covered by snowy mountains. One of the most unusual and beautiful areas of New Zealand is the volcanic region around Lake Taupo on North Island. There, you will see boiling springs, pools of steaming mud, hot-water geysers, small lakes with beds of brightly colored rocks, and waterfalls. While most of the people of New Zealand live and work in the industrialized cities, dairy farming is most important to the country’s economy. New Zealanders eat a great deal of meat and butter, and they sell huge amounts to other countries.

As in Australia, many of the customs in New Zealand would be familiar to a traveler from America because the two countries were settled by British settlers hundreds of years ago. However, the native islanders have descended from Asian ancestors, so the remnants of ancient Eastern practices exist alongside the European way of life.

Directions: Answer these questions about New Zealand and Australia.

1. The main idea is:

- Australia and New Zealand are often referred to as the “land down under.”
- While Australia and New Zealand are often linked, they are individual countries.

2. What is the correct definition for **landscape**?

- natural scenery and features
- mountainsides
- natural resources

3. What is the correct definition for **economy**?

- thrifty
- money management
- countryside

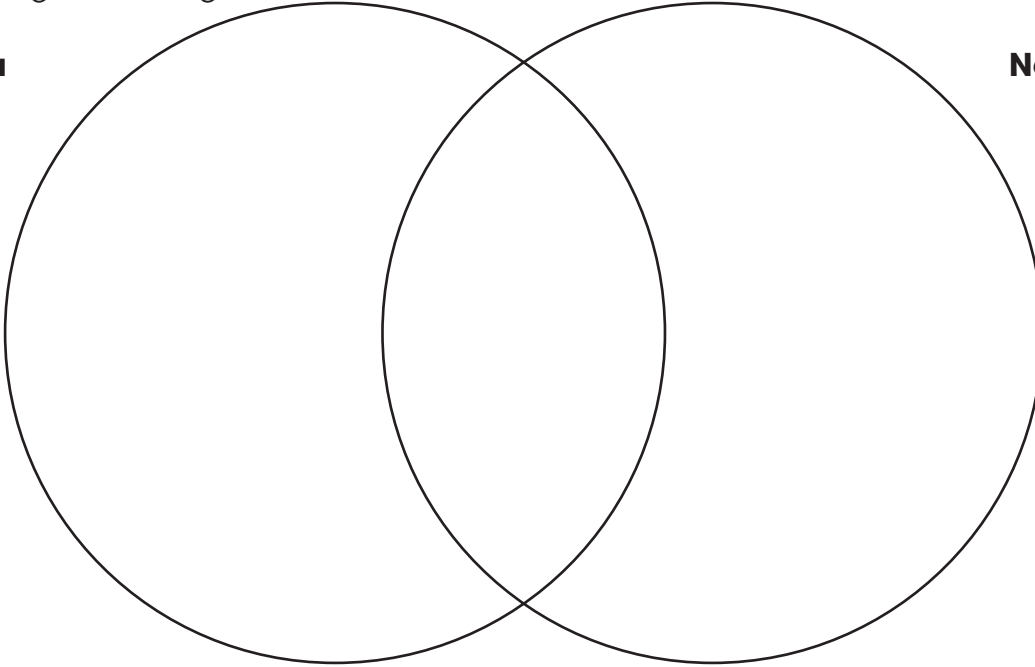
4. What is the nickname for Australia and New Zealand? _____

5. What business is most important to the New Zealand economy? _____

Venn Diagrams: Australia and New Zealand

Directions: Although Australia and New Zealand are close geographically to each other, they have many differences. After reading the selection, "Land Down Under," complete the following Venn diagram.

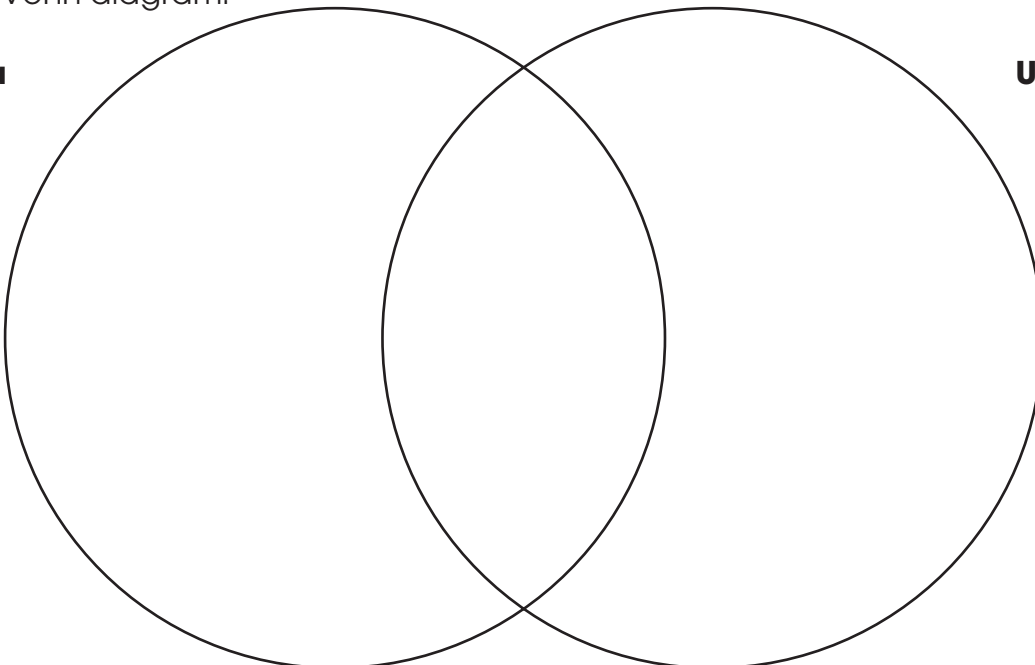
Australia



New Zealand

Directions: Using your knowledge of the United States and Australia, complete the following Venn diagram.

Australia



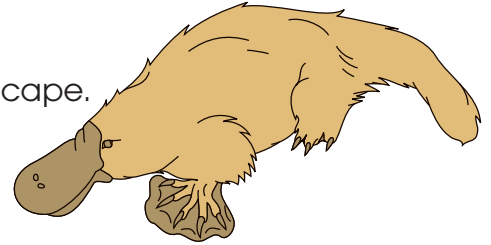
United States

Review

Directions: Write **T** for true and **F** for false.

_____ 1. Australia and New Zealand are similar in landscape.

_____ 2. Australia is home to the duckbill platypus.



_____ 3. The wombat resembles a beaver without a tail.

_____ 4. The platypus is a special mammal called a monotreme.

_____ 5. A kangaroo is a marsupial.

_____ 6. Baby kangaroos are independent at birth.

_____ 7. Koalas are related to bears.

_____ 8. Female koalas and kangaroos both have pouches.

_____ 9. Koalas eat all types of leaves.

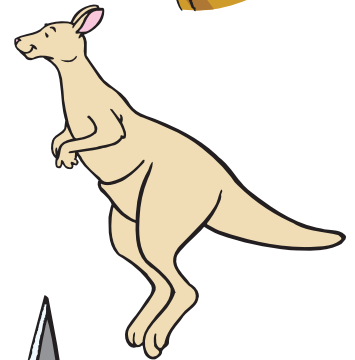
_____ 10. There are over 40 kinds of kangaroos.

_____ 11. The Australian Outback is located in the central part of the country.

_____ 12. Australia is known for its great number of sheep.

_____ 13. Aborigines arrived in Australia over 20,000 years ago.

_____ 14. Aborigines live in one central place.



Using Prior Knowledge: World Cities

Directions: Before reading about world cities in the following section, write one or two sentences telling what you know about each city below.

London, England _____

Berlin, Germany _____

Sydney, Australia _____

Cairo, Egypt _____

Washington, D.C., United States _____

Ottawa, Canada _____

Creative Writing: London

- London is the capital of England.
- Over 8 million people live in London.
- Among cities its size, London is the greenest city in the world.
- London is one of Europe’s largest seaports.
- London has many historic sites, including Westminster Abbey, Houses of Parliament, Big Ben, and Buckingham Palace.
- Buckingham Palace is the residence of the queen of England, Queen Elizabeth II.



Directions: Using the above information, create a tourist article describing London. Do some research, and add other interesting information.

When you think of England, what comes to mind? _____

Would you like to visit London? Why or why not? _____

Creative Writing: Berlin

- Berlin is the capital of Germany.
- The population of Berlin is over 3.5 million people.
- Berlin’s Inland Harbor is connected to the Baltic Sea.
- Germany was once divided into East and West Germany after World War II. East Germany was Communist, and West Germany was a democracy.
- Berlin has more museums (175) than rainy days per year.
- Interesting sites in Berlin include the Brandenburg Gate, the State Opera House, Tiergarten Park, and the Philharmonic Concert Hall.



Directions: Using the above information, create a tourist article describing Berlin. Do some research, and add other interesting information.

When you think of Germany, what comes to mind? _____

Would you like to visit Berlin? Why or why not? _____

Making Inferences: Sydney

- Sydney is the capital of New South Wales, Australia.
- Manufacturing is a strong industry in Sydney. The city is also the headquarters of many large companies.
- Sydney is the major port of southeastern Australia.
- Sydney is Australia’s largest city.
- The discovery of gold in 1851 increased Sydney’s population. The population today is over 4.5 million people.
- Interesting sites in Sydney include the Sydney Opera House, the Sydney Harbour Bridge, and the Australia Square Tower.



Directions: Answer these questions about Sydney.

1. Why is manufacturing a strong industry in Sydney, as well as other major cities?

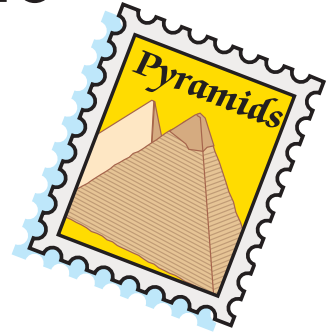
2. Gold was discovered in Australia in what year? _____

3. What two states in the United States were overrun by gold diggers at about the same time?

4. When you think of Australia, what comes to mind? _____

5. Would you like to visit Sydney? Why or why not? _____

Making Inferences: Cairo



- Cairo is the capital of Egypt.
- Cairo is the largest city of not only Egypt but also the Middle East.
- The population of Cairo is almost 8 million people.
- Cairo is the cultural center for the Islamic religion.
- Cairo is a major industrial site for Egypt.
- Cairo is a port on the Nile River near the head of the Nile delta.
- Interesting sites include the Egyptian Museum, the Sphinx, the pyramids, and the City of the Dead.

Directions: Answer these questions about Cairo.

1. All the major cities discussed so far, including Cairo, have a seaport. Historically speaking, what is the importance of having access to the sea?

2. Cairo has a population of almost 8 million people. What are three problems that could arise from having such a large population?

a) _____

b) _____

c) _____

3. Would you like to visit Cairo? Why or why not? _____

Creative Writing: Washington, D.C.

- Washington, D.C., is the capital of the United States.
- The population of Washington, D.C., is over 600,000 people in the city itself. Many people who work in Washington, D.C., reside in suburbs of the city in Virginia and Maryland. The population of the Washington, D.C. metropolitan area is 5.4 million.
- It's no surprise that the federal government is one of the largest employers in Washington, D.C.
- The Potomac and Anacostia rivers join in Washington, D.C.
- Interesting sites include the White House, the Vietnam Veterans Memorial, the Lincoln Memorial, the Washington Monument, and the United States Capitol Building.



Directions: Using the above information, create a tourist article describing Washington, D.C. Do some research, and add other interesting information.

When you think of Washington, D.C., what comes to mind? _____

Would you like to visit Washington, D.C.? Why or why not? _____

Making Inferences: Ottawa

- Ottawa is the capital of Canada and is located in Ontario.
- The federal government employs most people in the city. Manufacturing is another large employer.
- The Rideau Canal connects Ottawa to Lake Ontario.
- The population of Ottawa is over 850,000 people.
- Points of interest include the Peace Tower, Parliament Buildings, the Royal Canadian Mint, and the Canadian Museum of Nature.



Directions: Answer these questions about Ottawa.

1. Who employs the most people in Ottawa, Canada? _____
2. What body of water connects Ottawa to Lake Ontario? _____
3. In order from largest to smallest, list the six cities you have read about and their populations.

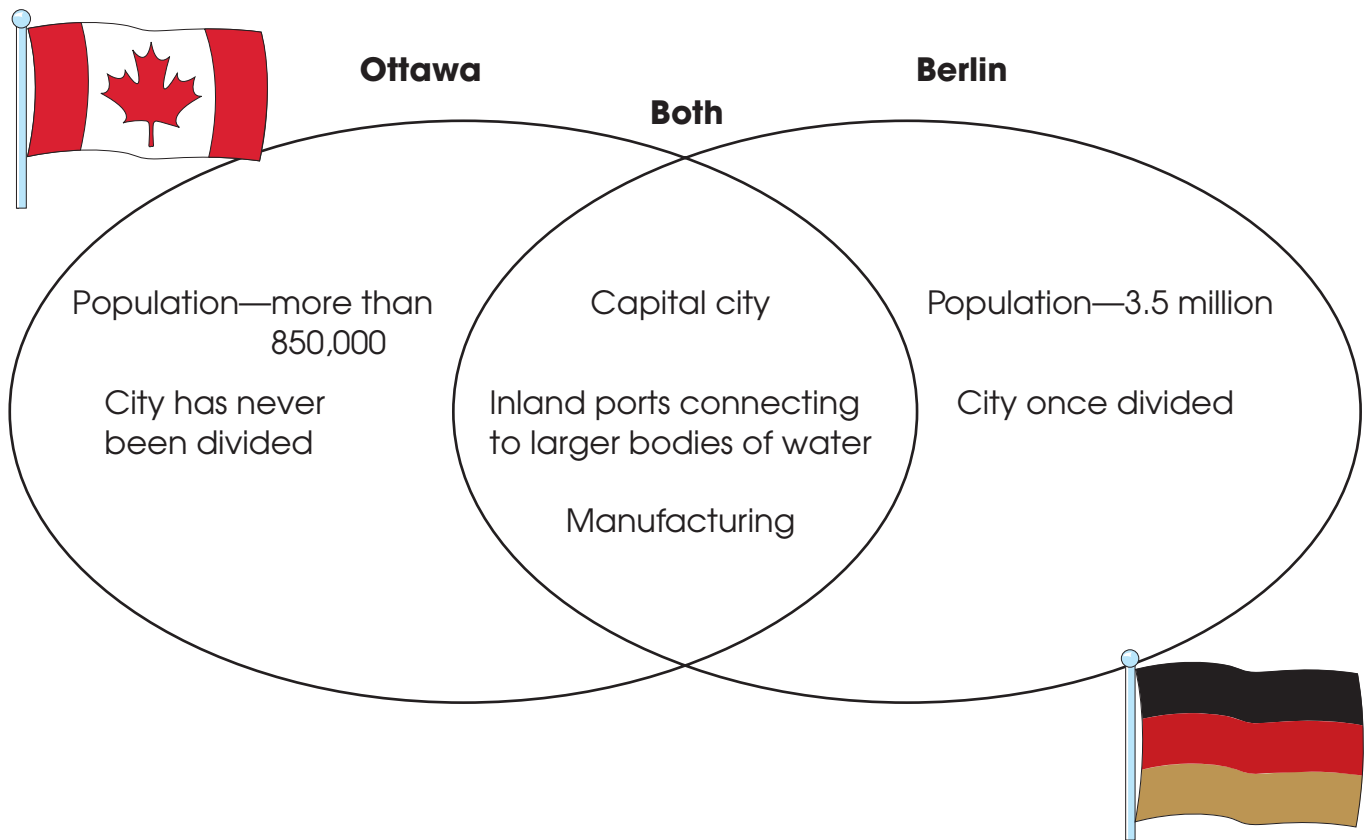
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

4. Canada is the United States' neighbor to the north. What problems could arise due to a shared border?

Compare/Contrast: Venn Diagram

A **Venn diagram** is used to chart information that shows similarities and differences between two things. You can use a Venn diagram as an organizational tool before writing a compare/contrast essay.

Directions: Review the completed Venn diagram and the compare/contrast essay below.



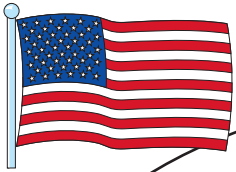
Compare/Contrast Essay

Ottawa, Canada, and Berlin, Germany, share important characteristics. Ottawa and Berlin are both capital cities in their countries. This means that both cities house the country’s federal government. Ottawa has access to Lake Ontario through the Rideau Canal. Inland Harbor in Berlin provides that city’s access to the Baltic Sea. Finally, both Ottawa and Berlin are sites for major manufacturing industries that help the economy.

Although Ottawa and Berlin are alike in some ways, in other ways, they are very different. The most obvious difference is in population. Ottawa has fewer than 900,000 people, while over 3.5 million reside in Berlin. Also, Berlin was once divided into East and West sections after World War II, with separate governments and facilities. Ottawa has never been divided.

Review

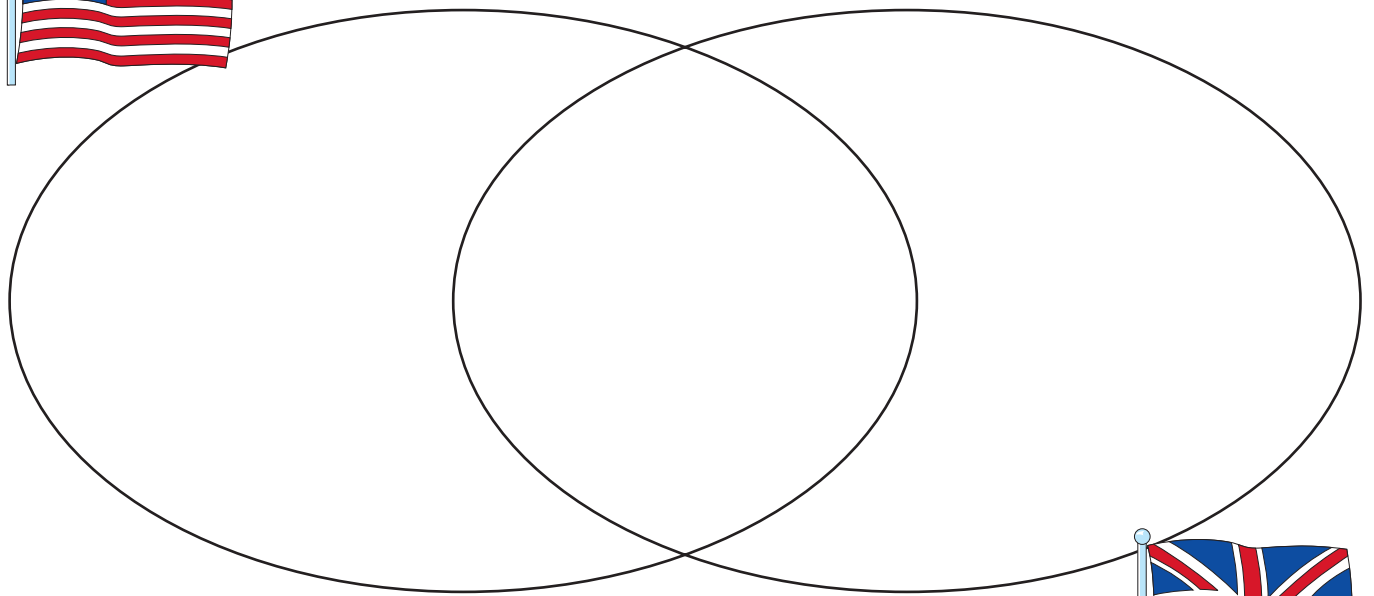
Directions: Using page 162 as a guide, complete the Venn diagram comparing Washington, D.C., and London, England. Then, write a two-paragraph compare/contrast essay.



Washington, D.C.

Both

London, England



Compare/Contrast Essay

Review

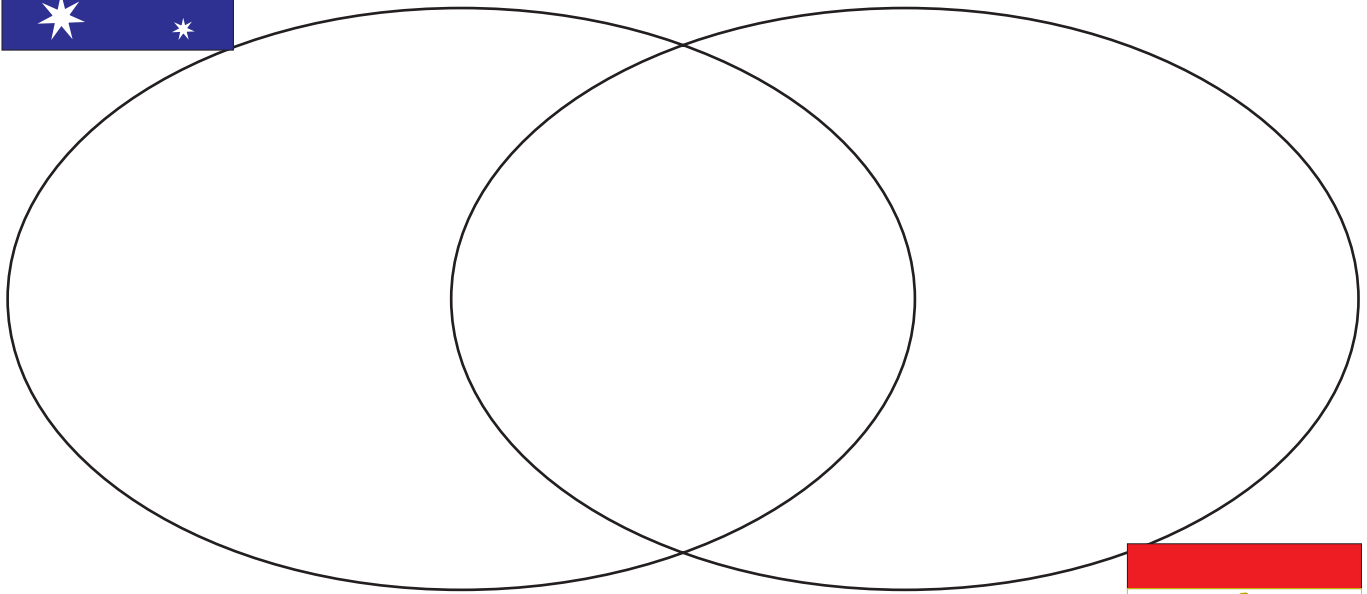
Directions: Using page 162 as a guide, complete the Venn diagram comparing Sydney, Australia, and Cairo, Egypt. Then, write a two-paragraph compare/contrast essay.



Sydney, Australia

Both

Cairo, Egypt



Compare/Contrast Essay

Using Prior Knowledge: Dinosaurs

Everyone is intrigued by dinosaurs. Their size, ferocity, and sudden disappearance have fueled scientific investigations for well over a century.

Directions: Before reading about dinosaurs in the following section, answer these questions.

1. Describe what you know about meat-eating dinosaurs. _____

2. Describe what you know about plant-eating dinosaurs. _____

3. Which dinosaur most intrigues you? Why? _____

Main Idea: Small Dinosaurs

When most people think of dinosaurs, they visualize enormous creatures. Actually, there were many species of small dinosaurs—some were only the size of chickens.

Like the larger dinosaurs, the Latin names of the smaller ones usually describe the creature. A small but fast species of dinosaur was *Saltopus*, which means “leaping foot.” An adult *Saltopus* weighed only about 2 pounds and grew to be approximately 2 feet long. Fossils of this dinosaur, which lived about 200 million years ago, have been found only in Scotland.

Another small dinosaur with an interesting name was *Compsognathus*, which means “pretty jaw.” About the same length as *Saltopus*, *Compsognathus* weighed about three times more. It’s unlikely that these two species knew one another, since *Compsognathus* remains have been found only in France and Germany.

A small dinosaur whose remains have been found in southern Africa is *Lesothosaurus*, which means “Lesotho lizard.” This lizard-like dinosaur was named only partly for its appearance. The first half of its name is based on the place its remains were found—Lesotho, in southern Africa.

Directions: Answer these questions about small dinosaurs.

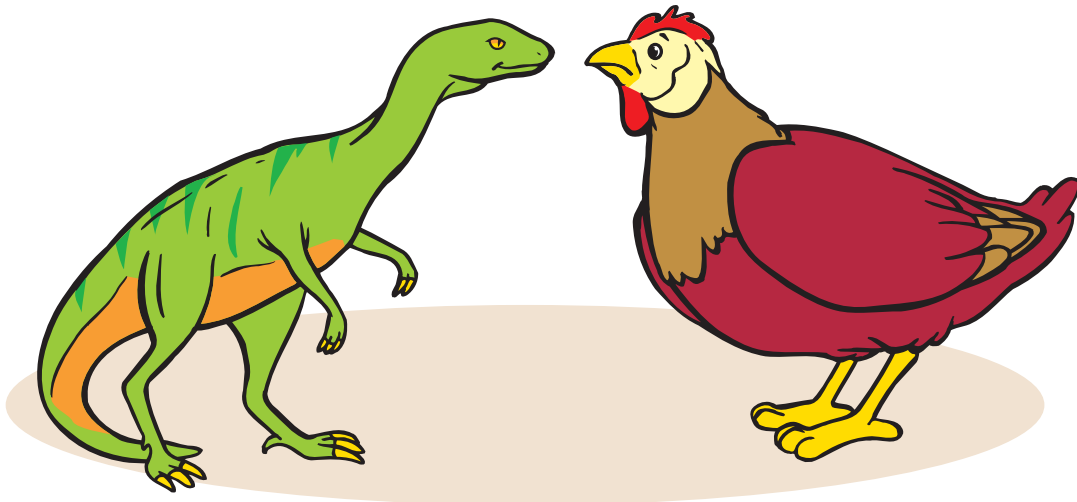
1. Circle the main idea:

People who think dinosaurs were big are completely wrong.

There are several species of small dinosaurs, some weighing only 2 pounds.

2. How much did *Saltopus* weigh? _____

3. Which dinosaur’s name means “pretty jaw”? _____



Comprehension: Dinosaur History

Dinosaurs are so popular today that it's hard to imagine this not always being the case. The fact is, no one had any idea that dinosaurs ever existed until about 150 years ago.

In 1841, a British scientist named Richard Owen coined the term **Dinosauria** to describe several sets of recently discovered large fossil bones. **Dinosauria** is Latin for "terrible lizards," and even though some dinosaurs were similar to lizards, modern science now also links dinosaurs to birds. Today's birds are thought to be the closest relatives to the dinosaurs.

Like birds, most dinosaurs had fairly long legs that extended straight down from beneath their bodies. Because of their long legs, many dinosaurs were able to move fast. They were also able to balance themselves well. Long-legged dinosaurs, such as *Iguanodon*, needed balance to walk upright.

Iguanodon walked on its long hind legs and used its stubby front legs as arms. On the end of its arms were five hoof-like fingers, one of which functioned as a thumb. Because it had no front teeth for tearing meat, scientists believe *Iguanodon* was a plant eater. Its large, flat back teeth were useful for grinding tender plants before swallowing them.

Directions: Answer these questions about the history of dinosaurs.

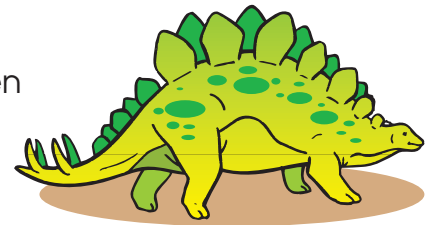
1. How were dinosaurs like today's birds? _____

2. This man coined the term **Dinosauria**.

Owen Richards Richard Owens Richard Owen

3. Which of these did *Iguanodon* not have?

short front legs front teeth back teeth



4. List other ways you can think of that dinosaurs and birds are alike. _____

Recalling Details: Dinosaur Puzzler

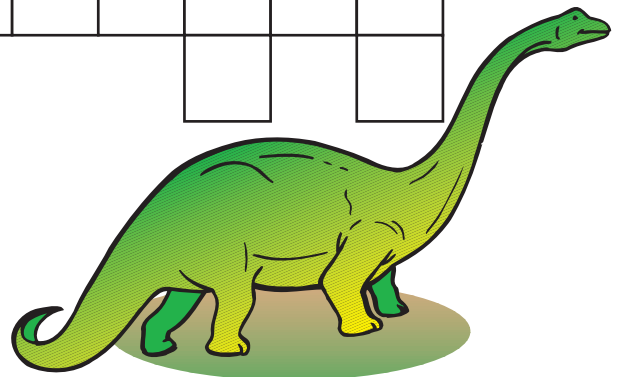
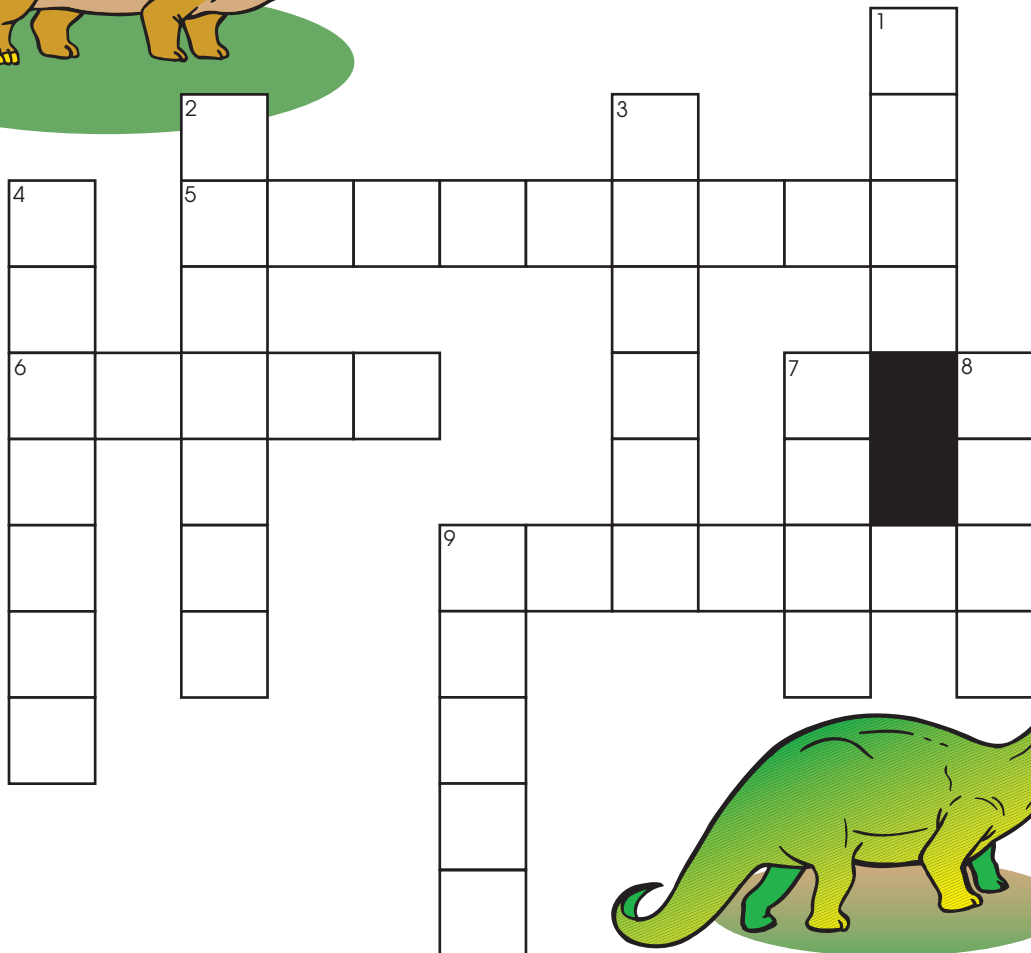
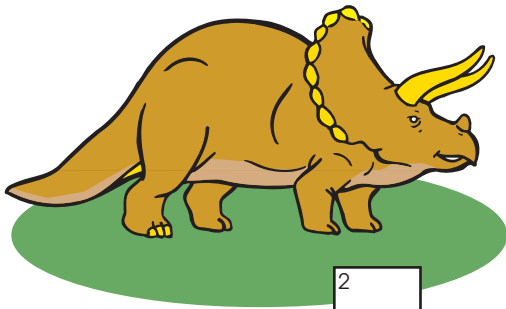
Directions: Use the facts you have learned about dinosaurs to complete the puzzle.

Across:

- 5. This dinosaur had five hoof-like fingers on its short front legs.
- 6. Dinosaurs with flat back teeth were ____ eaters.
- 9. Because of where their legs were positioned, dinosaurs had good ____.

Down:

- 1. Most dinosaurs had ____ legs.
- 2. The word **Dinosauria** means "terrible ____."
- 3. A bone that has been preserved for many years
- 4. Dinosaurs were not always as ____ as they are now.
- 7. Iguanodons walked on their ____ legs.
- 8. Richard ____ coined the term **Dinosauria**.
- 9. Dinosaurs are closely related to today's ____.



Comprehension: *Tyrannosaurus Rex*

One of the largest meat-eating animal ever to roam Earth was *Tyrannosaurus Rex*. **Rex** is Latin for “king,” and because of its size, *Tyrannosaurus* certainly was at the top of the dinosaur heap. With a length of 46 feet and a weight of 7 tons, there’s no doubt this dinosaur commanded respect!

Unlike smaller dinosaurs, *Tyrannosaurus* wasn’t tremendously fast on its huge feet. It could stroll along at a walking speed of 2 to 3 miles an hour. Not bad, considering *Tyrannosaurus* was pulling along a body that weighed 14,000 pounds! Like other dinosaurs, *Tyrannosaurus* walked upright, probably balancing its 16-foot-long head by lifting its massive tail.

Compared to the rest of its body, *Tyrannosaurus*’s front claws were tiny. Scientists aren’t really sure what the claws were for, although it seems likely that they may have been used for holding food. In that case, *Tyrannosaurus* would have had to lower its massive head down to its short claws to take anything in its mouth. Maybe it just used the claws to scratch nearby itches!

Because of their low metabolism, dinosaurs did not require a lot of food for survival. Scientists speculate that *Tyrannosaurus* ate off the same huge piece of meat—usually the carcass of another dinosaur—for several weeks. What do you suppose *Tyrannosaurus* did the rest of the time?

Directions: Answer these questions about *Tyrannosaurus Rex*.

1. Why was this dinosaur called “Rex”? _____

2. For what might *Tyrannosaurus Rex* have used its claws? _____

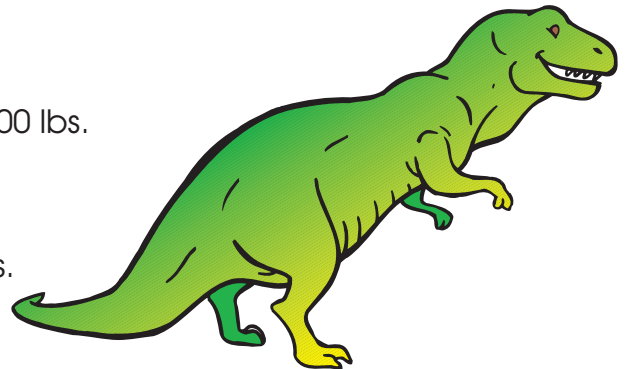
3. How long was *Tyrannosaurus Rex*? _____

4. *Tyrannosaurus* weighed

10,000 lbs. 12,000 lbs. 14,000 lbs.

5. *Tyrannosaurus* ate

plants. other dinosaurs. birds.



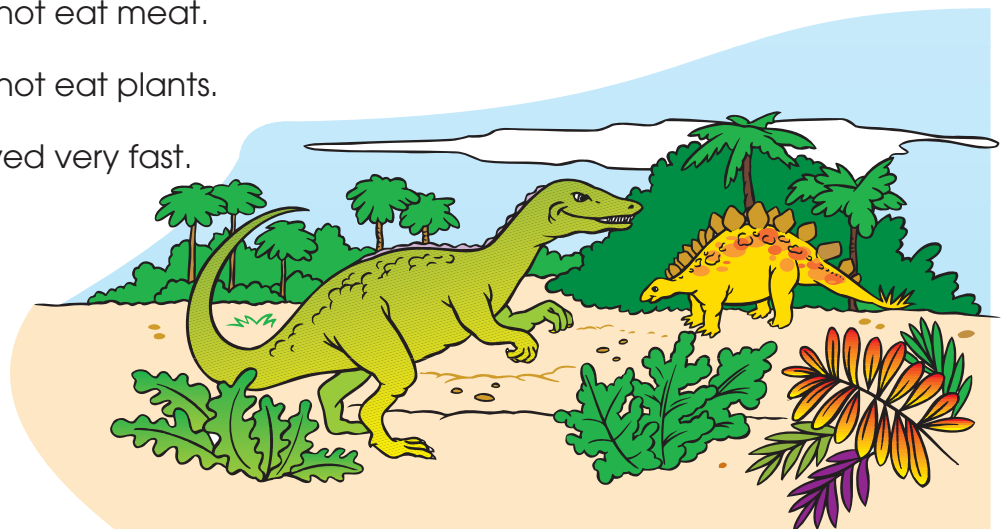
Generalization: Dinosaur Characteristics

Directions: Read each passage, and circle the valid generalization.

1. Not surprisingly, Tyrannosaurus had huge teeth in its mammoth head. They were 6 inches long! Because it was a meat eater, Tyrannosaurus’s teeth were sharp. They looked like spikes! In comparison, the long-necked, plant-eating Mamenchisaurus had a tiny head and small, flat teeth.
 - a. Scientists can’t figure out why some dinosaurs had huge teeth.
 - b. Tyrannosaurus was probably scarier looking than Mamenchisaurus.
 - c. Sharp teeth would have helped Mamenchisaurus chew better.

2. Dinosaurs’ names often reflect their size or some other physical trait. For example, Compsognathus means “pretty jaw.” Saltopus means “leaping foot.” Lesothosaurus means “lizard from Lesotho.”
 - a. Of the three species, Lesothosaurus was probably the fastest.
 - b. Of the three species, Compsognathus was probably the fastest.
 - c. Of the three species, Saltopus was probably the fastest.

3. Edmontosaurus, a huge 3-ton dinosaur, had 1,000 teeth! The teeth were cemented into chewing pads in the back of Edmontosaurus’s mouth. Unlike the sharp teeth of the meat-eating Tyrannosaurus, this dinosaur’s teeth were flat.
 - a. Edmontosaurus did not eat meat.
 - b. Edmontosaurus did not eat plants.
 - c. Edmontosaurus moved very fast.



Comprehension: Dinosaur Fossils

Imagine putting together the world's largest jigsaw puzzle. That is what scientists who reassemble the fossil bones of dinosaurs must do to find out what the creatures looked like. Fossilized bones are imbedded, or stuck, in solid rock, so scientists must first get the bones out of the rocks without breaking or otherwise damaging them. This task requires enormous patience.

In addition to hammers, drills, and chisels, sound waves are used to break up the rock. The drills, which are similar to high-speed dental drills, cut through the rock very quickly. As the bones are removed, scientists begin trying to figure out how they attach to one another. Sometimes the dinosaur's skeleton was preserved just as it was when it died. This, of course, shows scientists exactly how to reassemble it. Other times, parts of bone are missing. It then becomes a guessing game to decide what goes where.

When scientists discover dinosaur fossils, it is called a "find." A particularly exciting find in 1978 occurred in Montana when, for the first time, fossilized dinosaur eggs, babies, and several nests were found. The species of dinosaur in this exciting find was *Maiasaura*, which means "good mother lizard." From the size of the nest, which was 23 feet, scientists speculated that the adult female *Maiasaura* was about the same size.

Unlike birds' nests, dinosaur nests were not made of sticks and straw. Instead, since they were land animals, nests were made of dirt hollowed out into a bowl shape. The *Maiasaura*'s nest was 3 feet deep and held about 20 eggs.

Directions: Answer these questions about dinosaur fossils.

1. Name four tools used to remove dinosaur bones from rock. _____

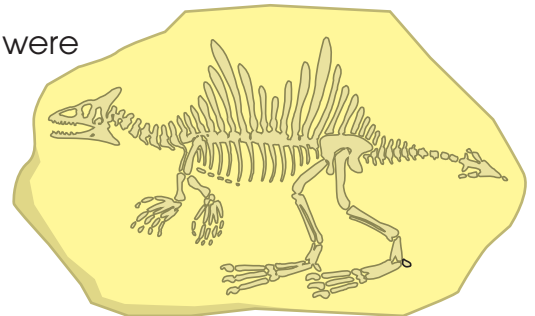
2. What do scientists do with the bones they remove? _____

3. The type of dinosaur fossils found in Montana in 1978 were

Mayiasaura. *Masaura*. *Maiasaura*.

4. When scientists discover dinosaur fossils, it is called a

found. find. nest.



Generalization: Plant-Eating Dinosaurs

Directions: Read each passage, and circle the valid generalization.

1. Many of the plant-eating dinosaurs belonged to a common species called Sauropods. Most Sauropods were very large. They had peg-shaped teeth, and they formed herds to search for food. They used their long necks to reach the top branches of trees, where the most tender leaves grew.
 - a. Their size, teeth, and long necks made Sauropods perfectly suited to their environment.
 - b. The Sauropods' peg-like teeth were not well suited to eating meat.
 - c. Vegetarian dinosaurs needed short necks and sharp teeth to survive.

2. Sauropods were not the only dinosaurs that traveled in herds. Sets of different-sized fossilized dinosaur footprints discovered in Texas show that other types of dinosaurs also traveled together. The footprints—23 sets of them—were of another plant-eating dinosaur, the *Apatosaurus*.
 - a. All dinosaurs traveled in herds because they needed companionship.
 - b. It appears that some plant-eating dinosaurs traveled in herds.
 - c. Traveling in herds offered dinosaurs protection and friendship.

3. Not all plant-eating dinosaurs were huge. The *Hypsilophodon* was only about 6½ feet tall. It stood on its two back legs and, because of its smaller size, probably ran away from danger.
 - a. The *Hypsilophodon* didn't stand a chance against bigger dinosaurs.
 - b. The *Hypsilophodon* could not eat from the tops of tall trees.
 - c. The *Hypsilophodon* was cowardly and always ran from danger.



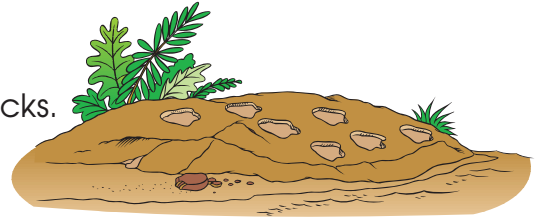
Comprehension: Dinosaur Tracks

Some scientists refer to dinosaurs' fossilized tracks as "footprints in time." The tracks that survived in Texas for 120 million years had been made in sand or mud. These large footprints were of the *Apatosaurus*. The footprints were more than 3 feet across!

Although *Apatosaurus* had a long, heavy tail, there is no sign that the tail hit the ground along with the feet. Scientists speculate that the place where the tracks were found was once a riverbed, and that *Apatosaurus*'s tail floated in the water and thus left no tracks. Another theory is that the dinosaur always carried its tail out behind it. This second theory is not as popular, because scientists say it's unlikely the dinosaur would consistently carry its long, heavy tail off the ground. When *Apatosaurus* rested, for example, the tail would have left its mark.

Besides Texas, fossilized tracks have been found in England, Canada, Australia, and Brazil. Some tracks have also been found in New England. The tracks discovered in Canada were quite a find! They showed a pattern made by 10 species of dinosaurs. In all, about 1,700 fossilized footprints were discovered. Maybe the scientists uncovered what millions of years ago was a dinosaur playground!

Directions: Answer these questions about dinosaur tracks.



1. Circle the main idea:

Fossilized dinosaur tracks provide scientists with information from which to draw conclusions about dinosaur size and behavior.

Fossilized dinosaur tracks are not very useful because so few have been found in the United States.

2. Explain how a dinosaur might have crossed a river without its tail leaving a track.

3. Name five countries where dinosaur tracks have been found. _____

4. Circle the valid generalization about dinosaur tracks.

a. The fact that 10 species of tracks were found together proves dinosaurs were friends with others outside their groups.

b. The fact that 10 species of tracks were found together means the dinosaurs probably gathered in that spot for water or food.

Review

Directions: Reread the following selections. Then, write the main idea of each.

Small Dinosaurs _____

Dinosaur History _____

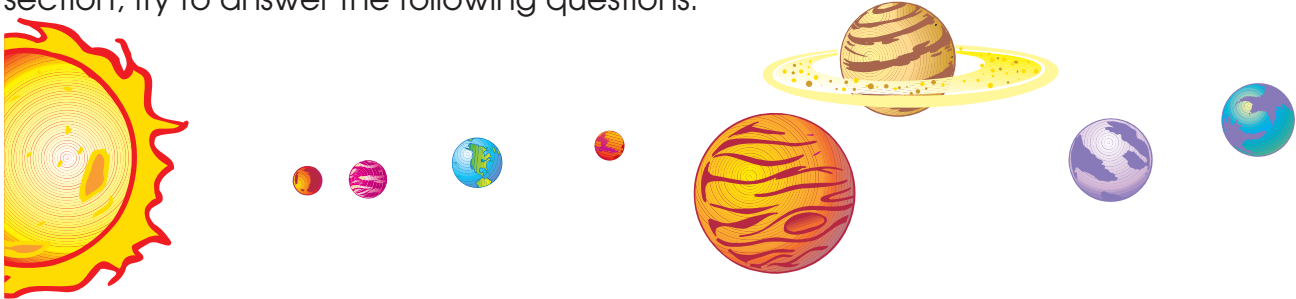
Tyrannosaurus Rex _____

Dinosaur Fossils _____

Dinosaur Tracks _____

The Solar System

This section is about our solar system. It includes the sun, comparisons among the planets, each planet's physical characteristics, and each planet's moons. Before beginning this section, try to answer the following questions.



1. Name the eight planets of the solar system in order beginning with the planet closest to the sun.

a. _____ b. _____ c. _____

d. _____ e. _____ f. _____

g. _____ h. _____

2. Write a distinguishing characteristic for each planet listed below.

Earth _____

Jupiter _____

Saturn _____

Mars _____

3. The study of the solar system, stars, and outer space is called _____.

4. The _____ is the center of the solar system and is a star.

5. Which planet is similar in size to Earth? _____

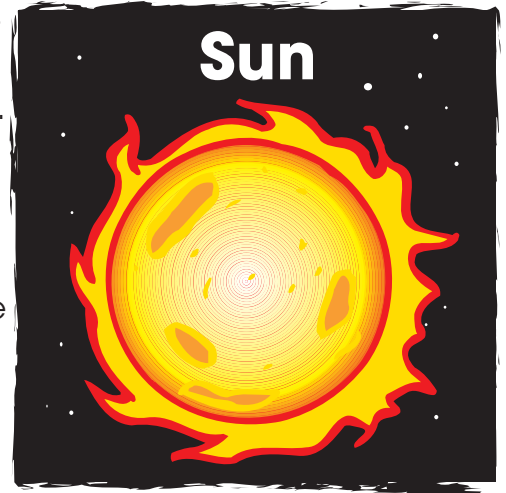
6. Humans have landed on which outer space object? _____

7. Have humans landed on any planets? Why or why not? _____

The Sun

Directions: Read the selection. Then, answer the questions.

The Sun is the center of our solar system. It is a star that seems massive to those on Earth but is dwarfed in comparison to other giant stars farther out in the universe. It rotates on its axis just like Earth. The Sun is made up of heated gases, and it releases heat and light energy. The part of the Sun we see is called the photosphere. The chromosphere is the colored ring of gases surrounding the Sun. Solar flares often shoot out from the Sun's surface for thousands of miles. Without the Sun's warmth, life on Earth would cease to exist.



1. Define the following words.

axis: _____

universe: _____

dwarfed: _____

cease: _____

2. What effect could a solar flare have on Earth?

3. Does the Sun revolve or rotate? _____

4. Why isn't the Sun visible at night? _____

5. Why is it important never to look directly at the Sun?

Mercury

Directions: Read the selection. Then, answer the questions.

The planet Mercury is named for the Roman god Mercury who was the messenger of the gods. Ancient Greek astronomers named the heavenly bodies “planets,” which means “wanderers.” Mercury is the planet closest to the Sun and also the smallest of the inner planets. Because of its proximity to the Sun (nearly 36 million miles), its surface is extraordinarily hot. Mercury’s solid surface is covered with craters. It rotates on its axis once every 59 days. One year on Mercury lasts 88 Earth days. Mercury has no moons or rings and has virtually no atmosphere.



1. Define the following words:

astronomer: _____

proximity: _____

atmosphere: _____

crater: _____

2. Could life survive on Mercury? Why or why not?

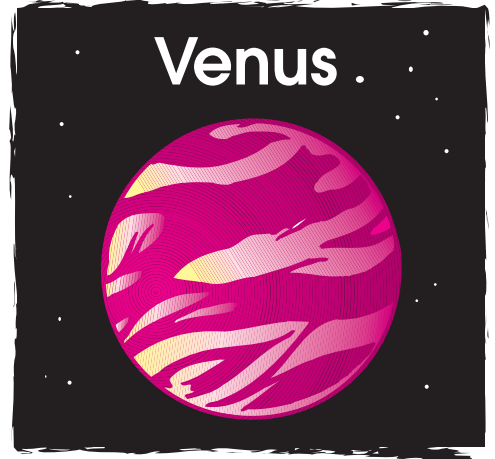
3. Write a three-sentence summary of the selection above.

4. Mercury’s period of revolution is 88 days. How many months would that be?

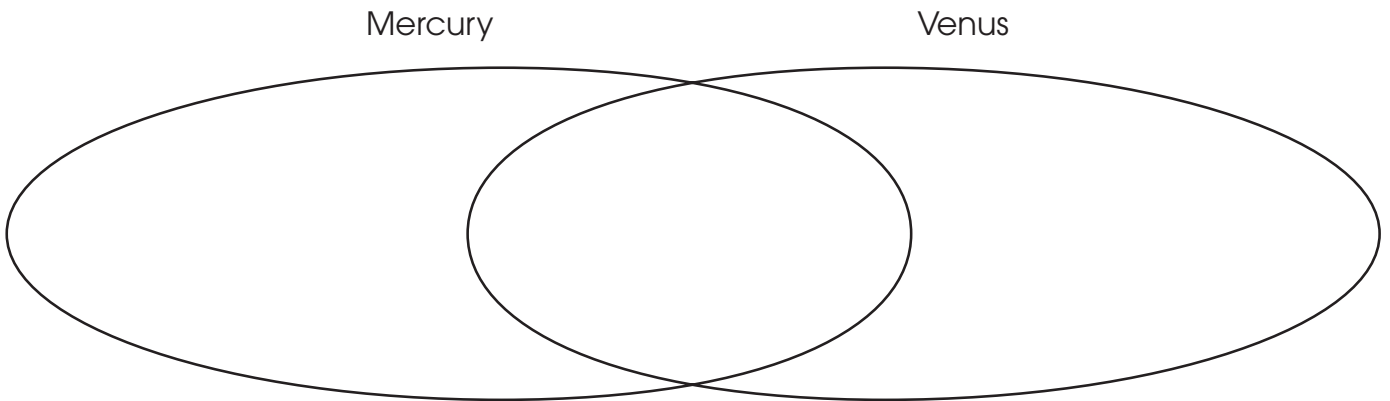
Venus

Directions: Read the selection. Then, answer the questions.

Located over 67 million miles from the Sun, Venus is an incredibly hot planet. Venus is named for the Roman goddess of love and beauty. Temperatures can reach 470 degrees Celsius. Venus is close in size to Earth and is often referred to as Earth’s twin. Space probes and unmanned crafts have landed on Venus and found Venus to be dust-covered and very windy. Because Venus is very bright, it is often thought of as a star. Venus has no moons or rings. Its period of rotation is 243 days, and it revolves once around the Sun in 225 days.



1. Create a Venn diagram comparing Mercury and Venus.



2. Write a three-sentence summary about Venus.

3. Approximately how far is Venus from Mercury? _____

4. If you were to design a spacecraft capable of landing on Venus, what might it require?

Earth

Directions: Read the selection. Then, answer the questions.

Earth is the only planet with known life forms. It revolves around the Sun every $365\frac{1}{4}$ days. One rotation takes 24 hours to complete. Earth has seasons due to the tilt of its axis and its revolution. Rotation causes night and day. Earth is almost 93 million miles away from the Sun. Its surface is three-fourths water and one-fourth land mass. Earth is surrounded by gases called the atmosphere, which allows life to survive. Earth has one moon that has been explored many times.



1. Define the following word.

mass: _____

2. Approximately how far is Earth from Venus?

3. Approximately how far is Earth from Mercury?

4. What factors allow life to exist on Earth?

5. What causes the seasons?

6. What differences are there between Earth and the planets Mercury and Venus?

Mars

Directions: Read the selection. Then, answer the questions.

Mars is named for the god of war. It is the fourth of the inner planets. Mars is called the Red Planet and has polar caps, craters, and evidence of ancient volcanoes. Recently, space probes have landed there and given scientists information about its surface. The red color is produced by the reaction of iron-rich minerals to soil and water, which scientists believe happened long ago. Mars rotates on its axis every 24 hours, 37 minutes and is 142 million miles from the Sun. Its period of revolution is 687 days. Mars has two moons, Phobos and Deimos. Mars's identifying feature is the volcano Olympus Mons. Its temperature varies, but averages -50 degrees Celsius.



1. Define the following words.

polar: _____

mineral: _____

2. Name two distinguishing characteristics of Mars.

3. Could life survive on Mars? Why or why not?

4. For years, people have been interested in the possibility of Martian life. What special characteristics would life on Mars have?

Jupiter

Directions: Read the selection. Then, answer the questions.

The planet Jupiter is the largest planet of our solar system and is named for the king of the gods. Its distinguishing feature is the Great Red Spot, which changes occasionally in both color and brightness. Jupiter has a thin ring and at least 67 moons. Jupiter is the first of the outer planets, separated from the inner planets by an asteroid belt. It is almost 500 million miles from the Sun and takes nearly 12 years to complete a revolution around the Sun. It rotates on its axis in approximately 10 hours. Jupiter does not have a solid surface but rather a surface of gaseous clouds.



1. Define the following words.

asteroid: _____

gaseous: _____

2. Approximately how far is Jupiter from Earth?

3. Name three characteristics of Jupiter.

4. Write a three-sentence summary about Jupiter.

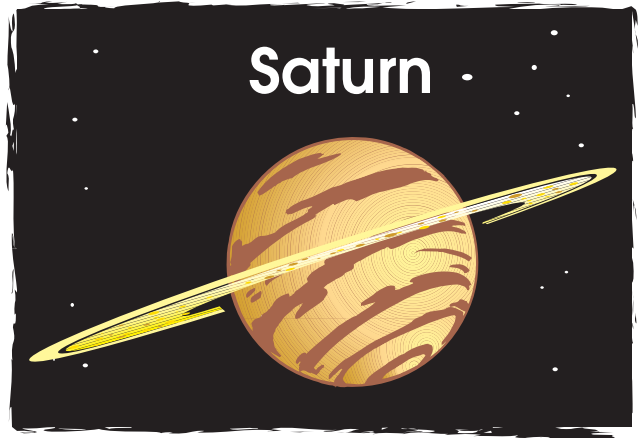
5. What separates the inner and outer planets?

6. Why do you think ancient astronomers chose to name Jupiter after the king of the gods?

Saturn

Directions: Read the selection. Then, answer the questions.

Saturn’s rings were first discovered in 1610. Scientists now know that Saturn has over 1,000 rings of varying color. Not only do the rings rotate at different speeds but also in varying patterns. Saturn has at least 53 moons. It is almost 900 million miles from the Sun and is the second largest planet of our solar system. Saturn rotates on its axis once in just under 11 hours. Saturn is named for the god of agriculture and harvest.



1. Define the following words:

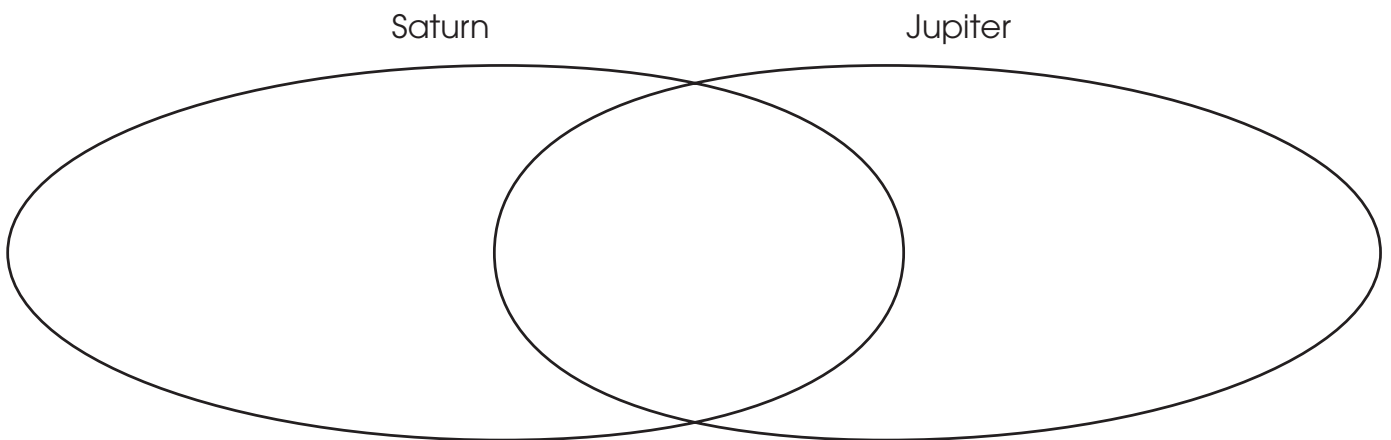
varying: _____

agriculture: _____

2. Name two distinguishing characteristics of Saturn.

3. Approximately how far is Saturn from Jupiter?

4. Create a Venn diagram showing the similarities and differences between Saturn and Jupiter.



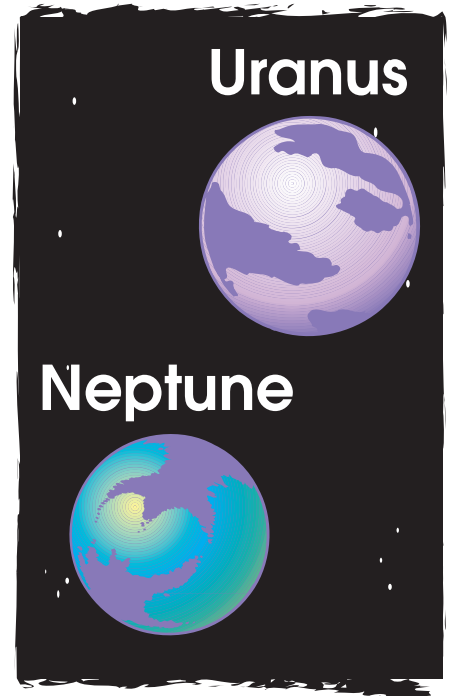
Uranus and Neptune

Directions: Read the selection. Then, answer the questions.

Because of their immense distance from Earth, it is difficult to study Uranus and Neptune. Uranus is named for the god of the skies, and Neptune is named for the god of the sea.

Uranus rotates on its side, thus making its rings spin vertically rather than horizontally. It has 27 moons and is almost 2 billion miles from the Sun. It rotates on its axis once every 17.25 hours and revolves around the Sun every 84 years. Uranus was the first planet discovered by telescope.

Neptune is similar in size and color to Uranus. It is almost 3 billion miles from the Sun and takes approximately 164 years to orbit it. Neptune has 14 moons and also has rings. It takes a little over 16 hours to make one rotation on its axis. Neptune is known for its large, windy storms. One massive storm, known as the Great Dark Spot, lasted for five years!

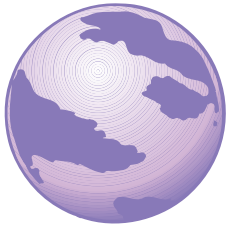


1. List the similarities between Uranus and Neptune.

2. What differences are there between Uranus and Neptune?

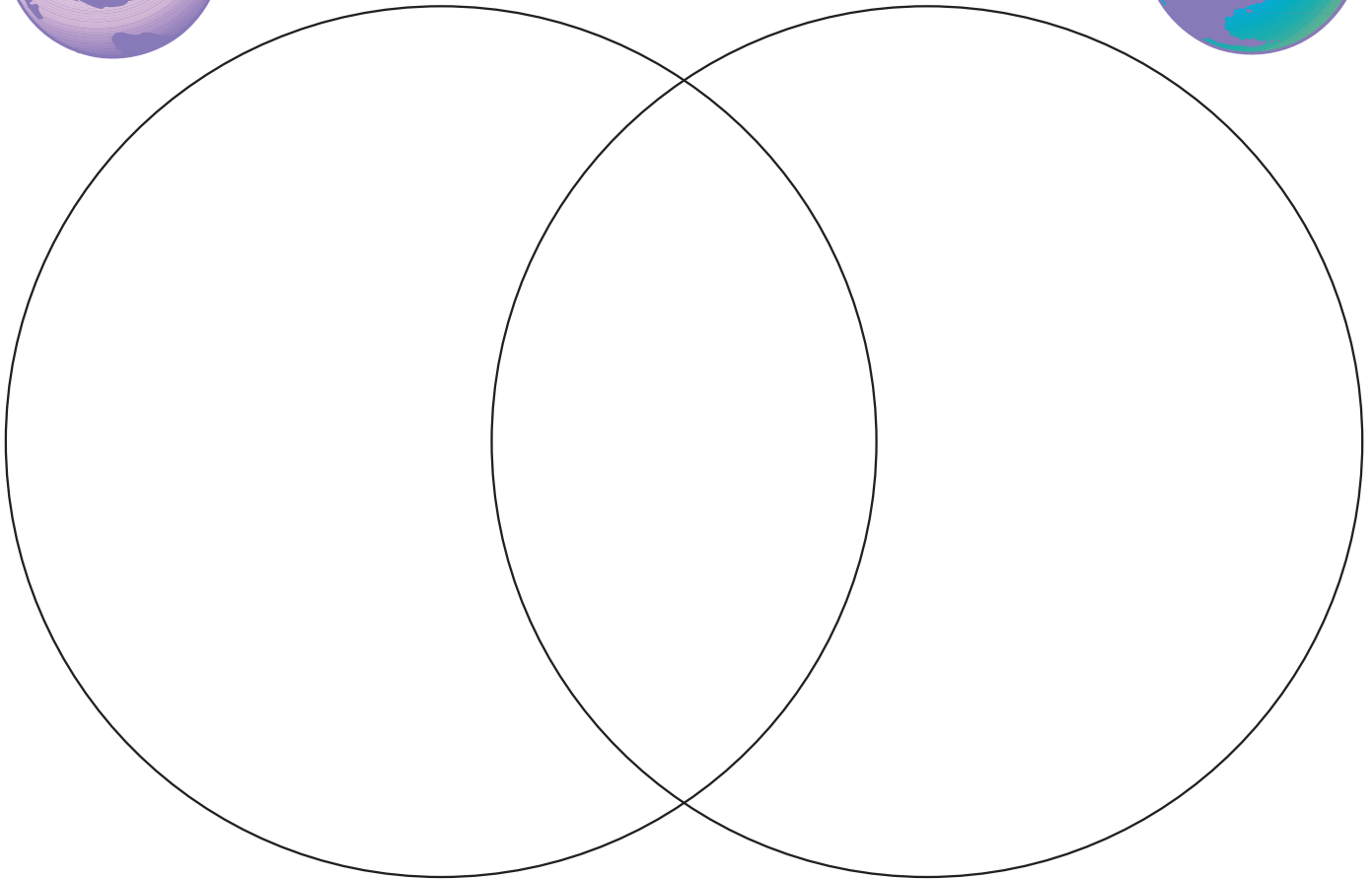
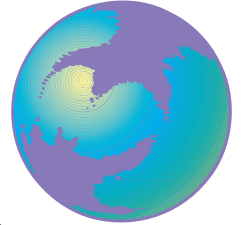
Uranus and Neptune

Directions: Use the lists you created on page 183 to create a Venn diagram showing the similarities and differences between Uranus and Neptune.



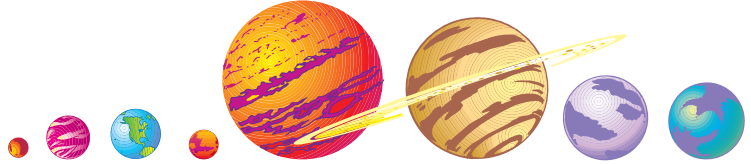
Uranus

Neptune



Review

Directions: Follow the instructions for each question.



1. List the four inner planets.

2. List the four outer planets.

3. What separates the inner and outer planets?

4. Name a distinguishing feature of each planet.

Mercury: _____

Venus: _____

Earth: _____

Mars: _____

Jupiter: _____

Saturn: _____

Uranus: _____

Neptune: _____

5. List the planets in order from most moons to least.

a) _____ e) _____

b) _____ f) _____

c) _____ g) _____

d) _____ h) _____

Review

6. Which planets have rings?

7. If you were in charge of the space program, what would your priorities be? Why?

8. Draw a diagram of the planets and the Sun. Be sure to depict color and the following diameter sizes.

Mercury — 3,031 mi.

Venus — 7,521 mi.

Earth — 7,926 mi.

Mars — 4,217 mi.

Jupiter — 88,730 mi.

Saturn — 74,900 mi.

Uranus — 31,763 mi.

Neptune — 30,775 mi.

Recalling Details: Earth's Atmosphere

The most important reason that life can exist on Earth is its atmosphere—the air around us. Without it, plant and animal life could not have developed. There would be no clouds, weather, or even sounds, only a deathlike stillness and an endlessly black sky. Without the protection of the atmosphere, the Sun's rays would roast Earth by day. At night, with no blanketing atmosphere, the stored heat would escape into space, dropping the temperature of the planet hundreds of degrees.



Held captive by Earth's gravity, the atmosphere surrounds the planet to a depth of hundreds of miles. However, all but 1 percent of the atmosphere is in a layer about 20 miles deep just above the surface of Earth. It is made up of a mixture of gases and dusts. About 78 percent of it is a gas called nitrogen, which is very important as food for plants. Most of the remaining gas, 21 percent, is oxygen, which all people and animals depend on for life. The remaining 1 percent is made up of a blend of other gases—including carbon dioxide, argon, ozone, and helium—and tiny dust particles. These particles come from ocean salt crystals, bits of rocks and sand, plant pollen, volcanic ash, and even meteor dust.

You may not think of air as matter, as something that can be weighed. In fact, Earth's air weighs billions and billions of tons. Near the surface of the planet, this "air pressure" is greatest. Right now, about 10 tons of air is pressing in on you. Yet, like the fish living near the floor of the ocean, you don't notice this tremendous weight because your body is built to withstand it.

Directions: Answer these questions about Earth's atmosphere.

1. What is the atmosphere? _____
2. Of what is the atmosphere made? _____
3. What is the most abundant gas in the atmosphere? _____
4. Which of the atmosphere's gases is most important to humans and animals?

5. What is air pressure? _____

Comprehension: Causes/Effects of Weather

The behavior of the atmosphere, which we experience as weather and climate, affects our lives in many important ways. It is the reason no one lives on the South Pole. It controls when a farmer plants the food we will eat, which crops will be planted, and also whether those crops will grow. The weather tells you what clothes to wear and how you will play after school. Weather is the sum of all the conditions of the air that may affect Earth's surface and its living things. These conditions include the temperature, air pressure, wind, and moisture. **Climate** refers to these conditions but generally applies to larger areas and longer periods of time, such as the annual climate of South America rather than today's weather in Oklahoma City.



Climate is influenced by many factors. It depends first and foremost on latitude. Areas nearest the equator are warm and wet, while the poles are cold and relatively dry. The poles also have extreme seasonal changes, while the areas at the middle latitudes have more moderate climates, neither as cold as the poles nor as hot as the equator. Other circumstances may alter this pattern, however. Land near the oceans, for instance, is generally warmer than inland areas.

Elevation also plays a role in climate. For example, despite the fact that Africa's highest mountain, Kilimanjaro, is just south of the equator, its summit is perpetually covered by snow. In general, high land is cooler and wetter than nearby low land.

Directions: Check the answers to these questions about the causes and effects of weather.

1. What is the correct definition for **atmosphere**?

- the clouds the sky where weather occurs

2. What is the correct definition for **foremost**?

- most important highest number in the front

3. What is the correct definition for **circumstances**?

- temperatures seasons conditions

4. What is the correct definition for **elevation**?

- height above Earth nearness to equator snow covering

5. What is the correct definition for **perpetually**?

- occasionally rarely always

Main Idea/Recalling Details: Weather

People have always searched the sky for clues about upcoming weather. Throughout the ages, farmers and sailors have looked to the winds and clouds for signs of approaching storms. But no real understanding of the weather could be achieved without a scientific study of the atmosphere. Such a study depends on being able to measure certain conditions, including pressure, temperature, and moisture levels.

A true scientific examination of weather, therefore, was not possible until the development of accurate measuring instruments, beginning in the 17th century. Meteorology—the science of studying the atmosphere—was born in 1643 with the invention of the barometer, which measures atmospheric pressure. The liquid-in-glass thermometer, the hygrometer to measure humidity (the amount of moisture in the air), and the weather map also were invented during the 1600s.

With the measurement of these basic elements, scientists began to work out the relationships between these and other atmospheric conditions, such as wind, clouds, and rainfall. Still, their observations failed to show an overall picture of the weather. Such complete weather reporting had to wait two centuries for the rapid transfer of information made possible by the invention of the telegraph during the 1840s.

Today, the forecasts of meteorologists are an international effort. There are thousands of weather stations around the world, both at land and at sea. Upper-level observations are also made by weather balloons and satellites, which continuously send photographs back to Earth. All of this information is relayed to national weather bureaus, where meteorologists plot it on graphs and analyze it. The information is then given to the public through the Internet, newspapers, television, and radio stations.

Directions: Answer these questions about studying the weather.

1. The main idea is:

- People have always searched the sky for clues about upcoming weather.
- A real understanding of weather depends on measuring conditions such as pressure, temperature, and moisture levels.

2. List three kinds of instruments used to measure atmospheric conditions, and tell what conditions they measure.

- a) _____
- b) _____
- c) _____

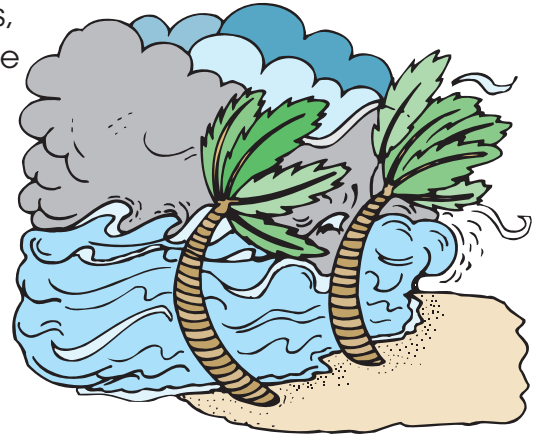
3. During what century were many of these measuring instruments invented? _____

4. Name two things used for upper-level observations.

- a) _____
- b) _____

Comprehension: Hurricanes

The characteristics of a hurricane are powerful winds, driving rain, and raging seas. Although a storm must have winds blowing at least 74 miles an hour to be classified as a hurricane, it is not unusual to have winds above 150 miles per hour. The entire storm system can be 500 miles in diameter, with lines of clouds that spiral toward a center called the "eye." Within the eye itself, which is about 15 miles across, the air is actually calm and cloudless. But this eye is enclosed by a towering wall of thick clouds where the storm's heaviest rains and highest winds are found.



All hurricanes begin in the warm seas and moist winds of the tropics. They form in either of two narrow bands to the north and south of the equator. For weeks, the blistering sun beats down on the ocean water. Slowly, the air above the sea becomes heated and begins to swirl. More hot, moist air is pulled skyward. Gradually, this circle grows larger and spins faster. As the hot, moist air at the top is cooled, great rain clouds are formed. The storm's fury builds until it moves over land or a cold area of the ocean where its supply of heat and moisture is finally cut off.

Hurricanes that strike North America usually form over the Atlantic Ocean. West coast storms are less dangerous because they tend to head out over the Pacific Ocean rather than toward land. The greatest damage usually comes from the hurricanes that begin in the western Pacific, because they often batter heavily populated regions.

Directions: Answer these questions about hurricanes.

1. What is necessary for a storm to be classified as a hurricane? _____

2. What is the eye of the hurricane? _____
3. Where do hurricanes come from? _____
4. How does a hurricane finally die down? _____

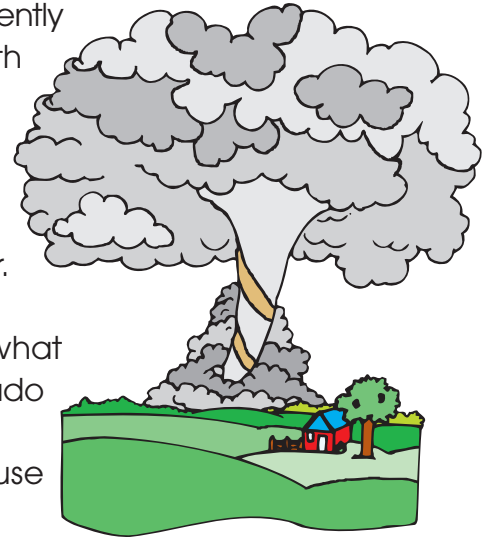
5. Why do hurricanes formed in the western Pacific cause the most damage?

Comprehension: Tornadoes

Tornadoes, which are also called twisters, occur more frequently than hurricanes, but they are smaller storms. The zigzag path of a tornado averages about 16 miles in length and only about a quarter of a mile in width. But the tornado is, pound for pound, the more severe storm. When one touches the ground, it leaves a trail of total destruction.

The winds in a tornado average about 200 miles per hour. At the center of the funnel-shaped cloud of a tornado is a partial vacuum. In combination with the high winds, this is what makes the storm so destructive. Its force is so great that a tornado can drive a piece of straw into a tree. The extremely low atmospheric pressure that accompanies the storm can cause a building to actually explode.

Unlike hurricanes, tornadoes are formed over land. They are most likely to occur over the central plains of the United States, especially in the spring and early summer months. Conditions for a tornado arise when warm, moist air from the south becomes trapped under colder, heavier air from the north. When the surfaces of the two air masses touch, rain clouds form and a thunderstorm begins. At first, only a rounded bulge hangs from the bottom of the cloud. It gradually gets longer until it forms a column reaching toward the ground. The tornado is white from the moisture when it first forms, but it turns black as it sucks up dirt and trash.



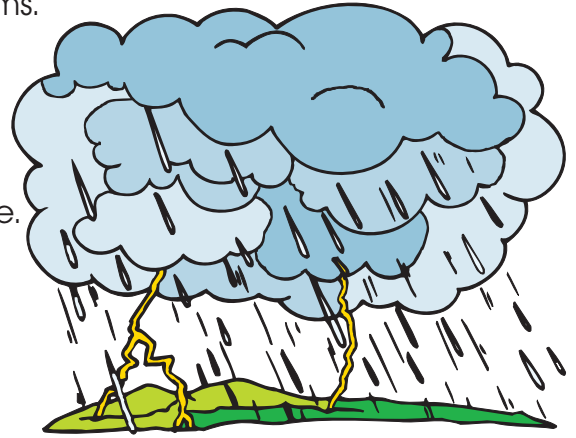
Directions: Circle **True** or **False** for these statements about tornadoes.

- | | | |
|---|------|-------|
| 1. The tornado is a stronger storm than the hurricane. | True | False |
| 2. The path of a tornado usually covers hundreds of miles. | True | False |
| 3. Like the eye of a hurricane, the center of a tornado is calm. | True | False |
| 4. Tornadoes are most likely to occur in the central plains of the United States during the spring and early summer months. | True | False |
| 5. High atmospheric pressure usually accompanies a tornado. | True | False |

Comprehension: Thunderstorms

With warm weather comes the threat of thunderstorms. The rapid growth of the majestic thunderhead cloud and the damp, cool winds that warn of an approaching storm are familiar in most regions of the world. In fact, it has been estimated that at any given time, 1,800 such storms are in progress around the globe.

As with hurricanes and tornadoes, thunderstorms are formed when a warm, moist air mass meets with a cold air mass. Before long, bolts of lightning streak across the sky, and thunder booms. It is not entirely understood how lightning is formed. It is known that a positive electrical charge builds near the top of the cloud, and a negative charge forms at the bottom. When enough force builds up, a powerful current of electricity zigzags down an electrically charged pathway between the two, causing the flash of lightning.



The clap of thunder you hear after a lightning flash is created by rapidly heated air that expands as the lightning passes through it. The distant rumbling is caused by the thunder's sound waves bouncing back and forth within clouds or between mountains. When thunderstorms rumble through an area, many people begin to worry about tornadoes. But they need to be just as fearful of thunderstorms. In fact, lightning kills more people than any other severe weather condition.

Directions: Answer these questions about thunderstorms.

1. How many thunderstorms are estimated to be occurring at any given time around the world?

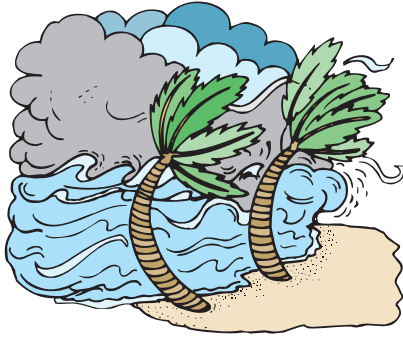
2. When are thunderstorms formed?

3. What causes thunder?

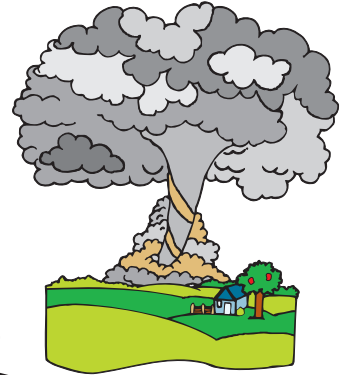
4. On average, which causes more deaths, lightning or tornadoes?

Venn Diagram: Storms

Directions: Complete the Venn diagram below. Think of at least three things to write in the outer parts of each circle and at least three things to write in the intersecting parts.



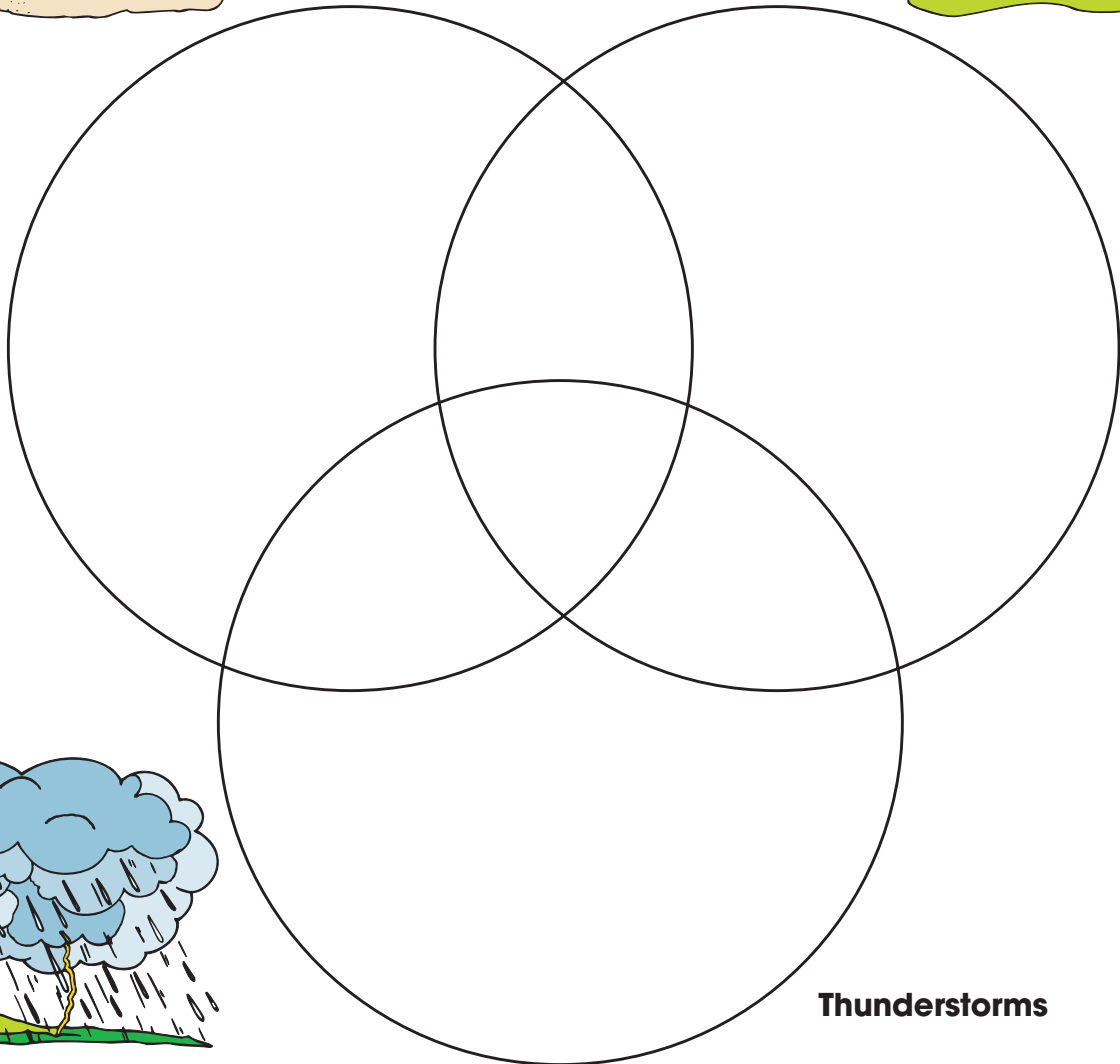
Hurricanes



Tornadoes



Thunderstorms



Recalling Details: Lightning Safety Rules

Lightning causes more fire damage to forests and property than anything else. More importantly, it kills more people than any other weather event. It is important to know what to do—and what not to do—during a thunderstorm. Here are some important rules to remember:



- **Don't** go outdoors.
- **Don't** go near open doors or windows, fireplaces, radiators, stoves, metal pipes, sinks, or plug-in electrical appliances.
- **Don't** use the telephone, as lightning could strike the wires outside. (Cell phones are safe to use.)
- **Don't** handle metal objects, such as fishing poles or golf clubs.
- **Don't** go into the water or ride in small boats.
- **Do** stay in an automobile if you are traveling. Cars offer excellent protection.
- **Don't** take laundry off the clothesline.
- **Do** look for shelter if you are outdoors. If there is no shelter, stay away from the highest object in the area. If there are only a few trees nearby, it is best to crouch in the open, away from the trees at a distance greater than the height of the nearest tree. If you are in an area with many trees, avoid the tallest tree. Look for shorter ones.
- **Don't** take shelter near wire fences or clotheslines, exposed sheds, or on a hilltop.
- If your hair stands on end or your skin tingles, lightning may be about to strike you. Immediately crouch down, put your feet together, and place your hands over your ears.

Directions: Answer these questions about lightning safety rules.

1. Name two things you should avoid if you are looking for shelter outside.

a) _____

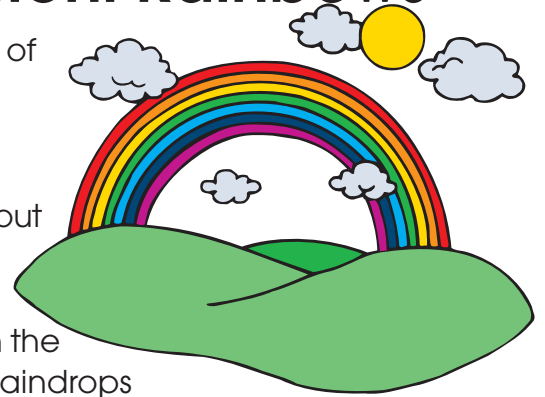
b) _____

2. What should you do if, during a thunderstorm, your hair stands up or your skin tingles?

Main Idea/Comprehension: Rainbows

Although there are some violent, frightening aspects of the weather, there is, considerable beauty, too. The rainbow is one simple, lovely example of nature's atmospheric mysteries.

You usually can see a rainbow when the sun comes out after a rain shower or in the fine spray of a waterfall or fountain. Although sunlight appears to be white, it is actually made up of a mixture of colors—all the colors in the rainbow. We see a rainbow because thousands of tiny raindrops act as mirrors and prisms on the sunlight. Prisms are objects that bend light, splitting it into bands of color.



The bands of color form a perfect semicircle. From the top edge to the bottom, the colors are always in the same order—red, orange, yellow, green, blue, indigo, and violet. The brightness and width of each band may vary from one minute to the next. You also may notice that the sky framed by the rainbow is lighter than the sky above. This is because the light that forms the blue and violet bands is more bent and spread out than the light that forms the top red band.

You will always see morning rainbows in the west, with the sun behind you. Afternoon rainbows, likewise, are always in the east. To see a rainbow, the sun can be no higher than 42 degrees—nearly halfway up the sky. Sometimes, if the sunlight is strong and the water droplets are very small, you can see a double rainbow. This happens because the light is reflected twice in the water droplets. The color bands are fainter and in reverse order in the second band.

Directions: Answer these questions about rainbows.

1. Check the statement that is the main idea.

- Although there are violent, frightening aspects of weather, there is considerable beauty, too.
- The rainbow is one simple, lovely example of nature's atmospheric mysteries.

2. What is the correct definition for **semicircle**?

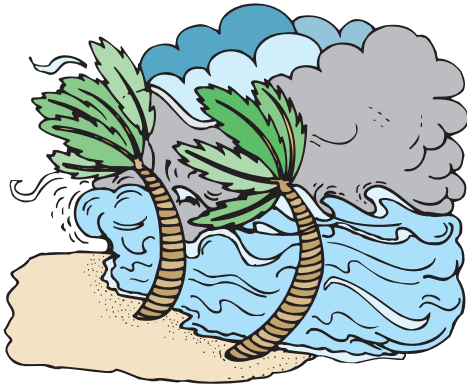
- colored circle diameter of a circle half circle

3. What is a prism? _____

4. In which direction would you look to see an afternoon rainbow? _____

Comprehension: Cause and Effect

Directions: Complete the chart by listing the cause and effect of each weather phenomenon.



	Cause	Effect
Thunderstorms		
Hurricanes		
Tornadoes		
Rainbows		
Precipitation		
Drought		

Review

Directions: If necessary, review the section on weather to find the answers to the following questions.

1. Describe Earth's atmosphere. _____

2. The science of studying weather is called _____.

3. Why is it important for weather forecasting to be an international effort?

4. Define **weather**. _____

5. Name three factors that influence climate.

6. Describe the following weather phenomena.

a. hurricane _____

b. tornado _____

c. thunderstorm _____

Using Prior Knowledge: Sports

Directions: Before reading about sports in the following section, write one or two sentences telling what you know about each sport below.

Wrestling _____

Bowling _____

Volleyball _____

Tennis _____

Boxing _____

Football _____

Softball _____

Field Hockey _____

Comprehension: Wrestling Around the World

In many countries, wrestling is an honored sport. In Iceland, wrestling is called **glima**; in Switzerland, it is called **schweitzer schwingen**; and in Ireland, it is called **cumberland**. In Japan, a form of wrestling called **sumo** began in 23 B.C.

Sumo wrestling is still popular in Japan today. Wrestlers wear the traditional sumo costume of a loincloth—a piece of cloth draped across the hips and bottom—and nothing else. Sumo wrestlers are big men—their average weight is about 300 pounds. Wrestlers compete in small rings with sand floors. The object of the match is to push the opponent out of the ring.

Even in the wrestling ring, however, the Japanese are astonishingly polite. If one wrestler begins to push the other out of the ring, the other may shout, “Matta!” **Matta** is Japanese for “not yet.” At this point, the action stops and the wrestlers step out of the ring to take a break. Some wrestling matches in Japan must take a long, long time to complete!



Directions: Answer these questions about wrestling around the world.

1. What is wrestling called in Switzerland? _____
2. In what country is wrestling called **cumberland**? _____
3. What is wrestling called in Iceland? _____
4. In what country is wrestling called **sumo**? _____
5. How much does an average sumo wrestler weigh? _____
6. What does **matta** mean in Japanese? _____
7. What happens if a wrestler shouts, “Matta”? _____

8. In what year did sumo wrestling begin? _____

Comprehension: Tennis, Anyone?

Historians say a form of tennis was played outdoors in England in the 16th century. In France, the game had a much, much earlier start. "Court tennis"—named such because royal courts of kings played it—was played indoors about 1000 A.D. Six hundred years later, indoor tennis was still in full swing. Records show there were 2,500 indoor courts in France at that time.

French tennis players and spectators took the game seriously. In 1780, the surgeon general of the French army recommended the game as one good for the lungs and throat. Why? Because of all the loud screaming and shouting that accompanied French games!

The word **tennis** comes from the French term **tenir**, which means "take heed" or "watch out." That's what the French yelled out centuries ago when they used huge racquets to whack balls over a sagging net. Later, when the game was adopted in England, **tenir** became **tennis**.

Tennis is said to have come to America by way of the island of Bermuda. A young American girl, Mary Outerbridge, played the game when visiting Bermuda in 1873. She brought tennis racquets, balls, and a net home to New York with her. The strange equipment puzzled customs officials (government employees who check travelers' bags to make sure they are not smuggling drugs or other substances). They reluctantly permitted Miss Outerbridge to bring the weird game to America, where it has flourished ever since!

Directions: Answer these questions about tennis.

1. In what year were there 2,500 indoor tennis courts in France? _____

2. In 1780, who recommended tennis as good for the lungs and throat?

3. What does the French word **tenir** mean? _____

4. In what state was tennis first played in America? _____

5. The person who brought tennis to America was

- Marlene Outerbridge. Mary Outerbridge. Mary Outerbridge.



Comprehension: Boxing History

The first known boxers were the ancient Greeks, who “toughened up” young men by making them box with bare fists. Later, a length of leather was wrapped around their hands and forearms to protect them. Although the sport was brutal, in ancient Greece, boxers who killed their opponents received a stiff punishment.

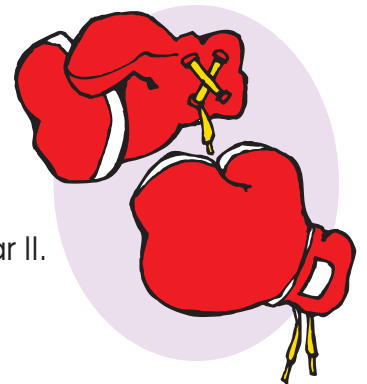
During the Middle Ages—from 500 to 1500 A.D.—boxing fell out of favor. It became popular in England about 100 years later, when the new middle class had the time and money for sports. Boxers would travel to matches held at inns and bars, and their loyal fans would follow. No gloves were used in the early 1600s in England. Instead, like the ancient Greeks, boxers used bare fists and—something new—wrestling holds. Carrier pigeons with messages tied to their bodies were trained to take news of the fights back to the boxers’ hometowns.

Because so many people were badly hurt or killed, padded boxing gloves began to be used in the United States around 1880. Boxing became fashionable—and safer. Harvard University offered boxing as an intramural sport in the 1880s. U.S. President Theodore Roosevelt’s love of the sport helped to further popularize it. It’s said that Roosevelt boxed regularly with a former heavyweight champion named Mike Donovan.

During World War I, boxing was part of the required training for army recruits. The Golden Gloves championship matches for boys, which began in the 1930s, also helped spread the sport’s popularity.

Directions: Answer these questions about boxing history.

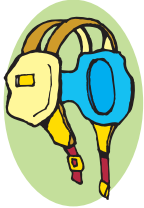
1. What people were known as the first boxers? _____
2. During what period did boxing fall out of favor? _____
3. What university offered boxing as a sport in the 1880s? _____
4. Which U.S. president enjoyed boxing? _____
5. In England in the 1600s, news about boxing was sent via
 telegrams. carrier pigeons. messengers.
6. The Golden Gloves championships were first offered
 in the 1930s. during World War I. during World War II.



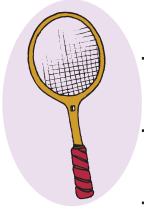
Comprehension: Sports Summaries

Directions: Write a short paragraph summarizing each selection below.

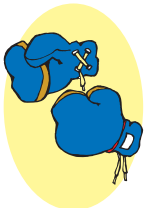
Wrestling Around the World _____



Tennis, Anyone? _____



Boxing History _____



Of the sports listed above, which is your favorite? Why? _____

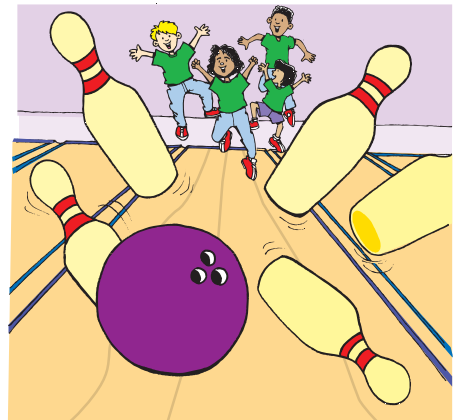
Main Idea: Bowling Is a Ball

Like tennis and boxing, bowling is also a very old sport. It began in Germany about nine centuries ago. Bowling was first played outdoors with wooden pins and a bowling ball made from a rounded rock.

The first players were church members who bowled with Catholic bishops and priests. Those who bowled a good game were said to be blessed. Those who bowled poorly were believed to be sinners who should improve themselves to improve their games! The name of the game in 11th-century Germany was **Kegelspiel**.

By the late 19th century, bowling was the most popular sport in Germany. A common expression for a person who had died was that he was “bowled out.”

The game was introduced to America by way of Holland, where the Dutch had learned bowling from the Germans. Some Dutch citizens brought the game to Manhattan Island in 1623. The first bowling alley—outdoors, of course—opened in New York City more than 100 years later in 1732. Today, bowling is one of the most popular American sports. People who have never put on boxing gloves or raised a tennis racquet have, at one time or another, lifted and rolled a bowling ball.



Directions: Answer these questions about bowling.

1. Circle the main idea:

Bowling is a very old and popular sport.

Bad bowlers are sinners who should clean up their acts.

2. Who brought bowling to the United States? _____

3. What was bowling called in Germany? _____

4. What were the first bowling balls made from? _____

5. The first American bowling alley opened in 1732 in what city? _____

6. In 19th-century Germany, what was the meaning of the expression “bowled out”?

Comprehension: Facts About Football

Like tennis courts, football fields are usually laid out in a north-south fashion so the sun doesn't shine directly into one team's eyes. The field is 120 yards long and $53\frac{1}{3}$ yards wide, with a goalpost at each end that is at least 20 feet high.

Regulation-size footballs are 11 inches long and must weigh at least 14 ounces. The object of the game is for one team of 11 to score more points than the opposing team. There are four ways to score points in football.

A touchdown, worth six points, is scored by carrying the ball across the opponent's goal line or by completing a forward pass in the opponent's end zone. When a team makes a touchdown, it gets the chance to make one or two extra points via a play executed from the 2- or 3-yard line. A field goal, worth three points, is made by kicking the ball from the field over the crossbar of the opponent's goal. A way to earn two points is through a play called a safety.

Football games are 60 minutes long and are divided into four quarters of 15 minutes each. Because of all the commercials and instant replays, televised games seem much longer. For college games, the halftime shows also take a lot of time.

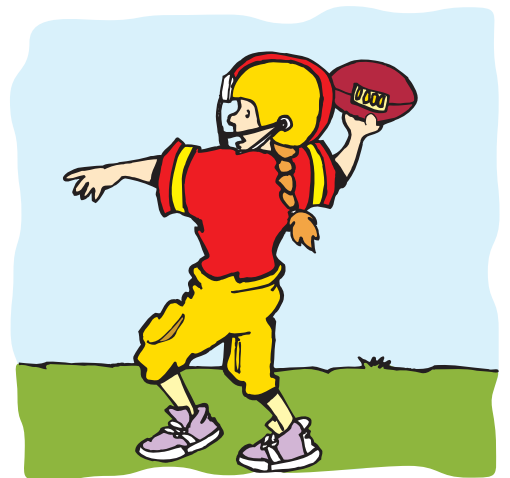
Traditionally, college football games are played on Saturday afternoons, and high school games are played on Friday nights. Professional games are played on Sundays, as well as a few nights throughout the week.

Directions: Answer these questions about football.

1. How long is a regulation football? _____
2. How long is a football field? _____
3. How many players are on a football team? _____
4. A field goal is worth

<input type="checkbox"/> one point.	<input type="checkbox"/> two points.	<input type="checkbox"/> three points.
-------------------------------------	--------------------------------------	--
5. A touchdown is worth

<input type="checkbox"/> two points.	<input type="checkbox"/> three points.	<input type="checkbox"/> six points.
--------------------------------------	--	--------------------------------------
6. Football games are _____ minutes long
with four _____ -minute quarters.



Giving Directions: A Perfect Softball Pitch

A good softball pitcher makes the skill look effortless and graceful. In fact, there are very specific things a softball pitcher must do before, during, and after he or she throws the ball.

Before throwing, the pitcher must have both feet firmly on the ground and be in contact with the pitcher's plate for at least one second. At the beginning of the pitch, the ball must be held in both hands in front of the body. It must be held this way for no longer than 20 seconds. While making the pitch, the pitcher must keep one foot on the ground. Until the ball leaves his or her hands, the pitcher cannot take more than one step toward the batter.

A correct softball pitch looks remarkably like the pitch used to throw horseshoes. As with horseshoes, there is a graceful follow-through with the hand and arm once the ball leaves the pitcher's hand.

There are several types of softball pitches. They include the drop, the slow ball, and the out-curve. The drop is the fastest pitch. The pitcher's hand is behind the ball in this pitch. For the slow ball, the pitcher grips the ball between his or her thumb and little finger. He or she puts the knuckles of the three middle fingers against the ball. When the out-curve ball is thrown, the pitcher thrusts the thumb back and rotates all of his or her fingers out.



Directions: Follow these instructions about softball.

1. Give directions on what to do before pitching a softball. _____

2. Give directions on how to throw a slow ball. _____

3. Give directions on how to throw an out-curve ball. _____

Comprehension: Volleyball

Volleyball began in Italy during the Middle Ages and was introduced to Germany in 1893. Germans called the sport **faustball**. Two years later, an American physical education teacher named William Morgan made some changes in **faustball** and brought the new game to Americans as **mintonette**.

In **faustball**, the ball was permitted to bounce twice before being hit back over the net. In **mintonette**, as in modern volleyball, no bounces were allowed. Shortly after Morgan introduced the sport, the director of a YMCA convinced him to change the name to something easier to pronounce. To “volley” a ball means to keep it in the air, and that’s what volleyball players try to do.

A volleyball court is 60 feet long by 30 feet wide. It’s divided in half by an 8-foot-high net. There are six players on each team, standing three by three across on each side of the net; however, the same person may not hit the ball two times in a row. If the serve is not returned, the team that served gets the point.

The most popular serve is the underhand. The server stands with the left foot forward, right knee bent, weight on the right foot. He or she leans slightly forward. The ball is in the partly extended left hand. The server strikes the ball off the left hand with the right hand. (Left-handers use the opposite hands and feet.) The first team to get 15 points wins the game.

Directions: Answer these questions about volleyball.

1. Circle the main idea:

Volleyball is a sport that requires a lot of strength.

Volleyball is a simple game with six players on opposing sides.

2. A valid generalization about volleyball is:

a. It’s safe, requires little equipment, and can be played by all ages.

b. It’s dangerous, difficult to learn, and appeals only to children.

c. It’s dull, slow, and takes players a long time to earn 15 points.

3. Give directions on how to deliver an underhand serve. _____



Comprehension: Comparing Sports

Directions: Read each paragraph. Then, answer the questions comparing field hockey, basketball, and softball.

My sister is more interested in sports than I am. Last year, she lettered in field hockey, basketball, and softball. I got my exercise walking to school.

1. What sports did the writer play? _____

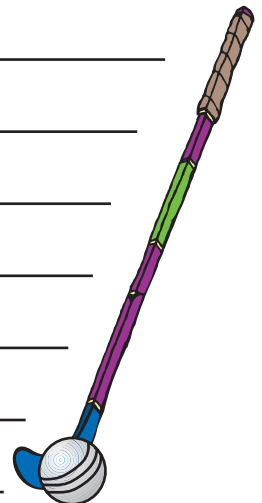
My sister's favorite sport is field hockey. Because it requires constant running up and down a field, it provides more exercise than basketball and softball. There's also more danger, because every year someone gets her teeth knocked out with a hockey stick. So far at our school, no one has lost any teeth in basketball or softball.

2. Compared to basketball and softball, field hockey provides one benefit and one danger. Name them.

On the other hand, softball players—especially those who play the outfield—can occasionally take some time to daydream. With an ace strikeout pitcher and batters who can't hit far, outfielders' gloves don't get much of a workout.

3. What sports do not allow time for daydreaming? _____

Write a short paragraph telling which sport you like best and why. _____



Famous Athletes

Athletes are often heroes to young and old alike. Their stories are sometimes about triumph over amazing odds to become one of the best in their sport. Before beginning the section, answer the following questions as a warm-up.



1. What sport most interests you? Why?

2. What sports figure do you most admire? Why?

3. In your opinion, what makes a person a hero?

4. Try to name a sports legend for each of the sports listed below.

Track and field _____

Swimming _____

Boxing _____

Baseball _____

Speed skating _____

Tennis _____

Hitting the Slopes

Directions: Read the selection. Then, answer the questions.

Lindsey Vonn was born to be a skier. She began learning the sport when she was only two years old. Vonn was so talented that her father moved the entire family from Minnesota to Colorado when she was 10. He knew that Colorado was the place to be if Lindsey had a chance of exploring her potential as a skier. Vonn started racing at the age of 7 and won her first competition when she was only 14 years old.

Vonn made her Olympic debut in 2002. Just before the next Olympics in 2006, she was injured. Despite the pain, Vonn was able to ski, and even to place. For the next few years, she worked hard and was prepared for the 2010 Olympics in Vancouver, Canada. Vonn was thrilled to realize a dream: to win a gold medal in the downhill event! In addition, she won a bronze in the Super-G (short for the "super-giant slalom," a downhill event). Lindsey Vonn was becoming known as one of the world's most talented female skiers.

In 2013, Vonn was injured again. This time, her injury resulted in reconstructive knee surgery. Although she skied competitively after her surgery, Vonn's knee continued to give her trouble. It was a hard decision to make, but she knew she'd be unable to compete in the 2014 Winter Olympics. Despite her injuries, Lindsey Vonn has had an impressive career. In addition to her Olympic medals, she has won almost 60 World Cup victories and inspired female athletes worldwide.

1. Summarize the selection in three sentences.

2. Define the following words:

potential: _____

debut: _____

reconstructive: _____

3. What are four words you could use to describe Lindsey Vonn?

Speed Skating

Directions: Read the selection. Then, answer the questions.

Imagine racing around a rink of glassy ice with only a thin blade of metal supporting you. Now, imagine skating so fast that you set a world record! That’s exactly what speed skater Bonnie Blair has done all of her life.



Bonnie started skating before she was walking—on the shoulders of her older brothers and sisters. By the time she was 4, Bonnie was competing. At age 7, Bonnie won the 1971 Illinois state championships and dreamed of becoming an Olympian.

That opportunity soon came. Bonnie competed in the 1988, 1992, and 1994 Olympics. She won a gold medal in the 500-meter race and a bronze medal in the 1,000-meter race in 1988, golds in both the 500- and 1,000-meter races in 1992 and repeated the two golds in 1994. Only two other U.S. women have ever won five gold medals in the Olympics in any sport. Bonnie Blair is truly a champion!

1. Define the following words:

opportunity: _____

meter: _____

2. Bonnie Blair competed over a period of six years in the Olympics. What qualities would be necessary to maintain the physical and mental condition to compete for so long?

3. Bonnie Blair participated in long-track skating, in which she raced with one other person against a clock for the best time. Do you think this would be easier or more difficult than racing a group to finish first? Why?

4. In your opinion, what makes a good athlete?

Baseball

Directions: Read the selection. Then, answer the questions.

Babe Ruth was born George Herman Ruth in 1895. His family lived in Baltimore, Maryland, and was quite poor. He overcame poverty to become one of the greatest baseball players of all time.



Babe Ruth's baseball career began with the Baltimore Orioles. He was a pitcher but also a tremendous batter. He later played for the Boston Red Sox and started his home-run hitting fame with 29 home runs in 1919.

In 1920, while playing for the New York Yankees, Babe Ruth hit 54 home runs. He had become very popular with baseball fans of all ages. Amazingly, by 1925, he was making more money than the president of the United States! His home-run record of 60 home runs in a single season went unshattered until Roger Maris broke it in 1961 with 61 home runs.

Babe Ruth retired from baseball in 1935 with a career total of 714 home runs. He died in 1948 at age 53.

1. Summarize the selection in three sentences.

2. In the early 1900s, life expectancy was shorter than it is today. By today's standards, Babe Ruth died at a relatively young age. What factors have contributed to increased life expectancy?

3. Create a time line of Babe Ruth's life beginning with his birth and ending with his death.

Swimming

Directions: Read the selection. Then, answer the questions.

In 1968, 18-year-old Mark Spitz boasted that he would win six gold medals at the Olympics being held in Mexico. He won two golds in team relay events. After failing to achieve his goal, Spitz was determined to do better in the 1972 Olympics in Munich.

For the next four years, Mark Spitz trained ferociously. Indeed, at the 1972 Olympics, Spitz amazed the world by breaking all records and winning seven gold medals in seven different events. While doing so, he set new world record times in each event. Mark Spitz had accomplished his goal.



1. What feelings do you think Mark Spitz had after the 1968 Olympics?

2. What do you think is the moral to this story?

3. Many Olympians are as young as Mark Spitz was, and some participate at even younger ages. Write one paragraph detailing the advantages of being a young Olympian and one paragraph detailing the disadvantages.

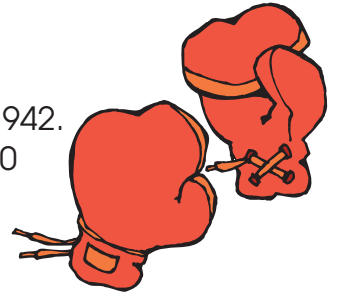
Boxing

Directions: Read the selection. Then, answer the questions.

Muhammad Ali was born Cassius Clay in Louisville, Kentucky, in 1942. He won the amateur Golden Gloves championship in 1959 and 1960 and went on to become the heavyweight champion of the 1960 Olympics. Four years later, he was champion of the world.

However, Ali's athletic fame came with its share of difficulties. He converted to the religion of Islam and thus changed his name from Cassius Clay to Muhammad Ali. Due to his Islamic beliefs, he refused to comply with the military draft for the Vietnam War. Therefore, he was stripped of his world title and banned from boxing from 1967 to 1970.

Ali regained his title in 1974 and won the world championship again in 1978. This accomplishment made Muhammad Ali the first heavyweight boxer to claim the world championship three times. Most notable about Ali's career is his total 56 wins in the ring with 37 knockouts.



1. Define the following words:

draft: _____

banned: _____

amateur: _____

notable: _____

comply: _____

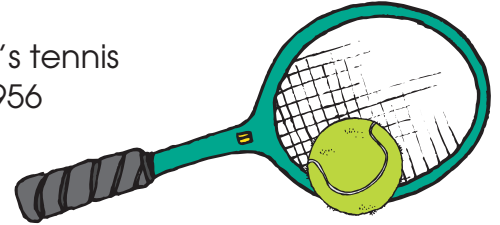
2. Why is it necessary for a country to use the military draft?

3. Write a three-sentence summary of the selection.

Tennis

Directions: Read the selection. Then, answer the questions.

Martina Navratilova gained fame as the best women’s tennis player of the 1980s. She was born in Czechoslovakia in 1956 and moved to the United States at the age of 19. She became a United States citizen in 1981.



Martina Navratilova excelled in the sport of tennis, but she enjoyed the Wimbledon championship the most. She won the singles finals in 1978, 1979, 1982, 1983, 1984, 1985, 1986, 1987, and 1990.

In 1982, she became the first woman professional tennis player to earn over one million dollars in a single season.

1. What physical characteristics are necessary to excel in the sport of tennis?

2. In your opinion, why would an athlete from another country want to come to the U.S.A. to train and compete?

3. Many athletes find it difficult to adjust to their status as “heroes.” What are some possible disadvantages to being an athletic superstar?

Review

Directions: Follow the instructions for each section.



1. On the line below, create a time line of the years of birth for the six athletes discussed in this section.

2. What mental and emotional characteristics did all six athletes have in common?

3. On the line below, create a time line of Muhammad Ali's life.

4. Compare and contrast the sports of tennis and baseball in a two-paragraph essay.

Using Prior Knowledge: Poetry



Directions: Before reading about poetry in the following section, answer these questions.

1. Have you ever written a poem? If so, was it difficult to do? Why or why not?

2. Write a poem with rhyming verse.

3. Write a poem with unrhymed verse.

Comprehension: Epitaphs

Epitaphs are verses written on tombstones and were very popular in the past. The following epitaphs were written by unknown authors.

On a Man Named Merideth

Here lies one blown out of breath
Who lived a merry life and died a Merideth.

On a Dentist

Stranger, approach this spot with gravity:
John Brown is filling his last cavity.

On Leslie Moore

Here lies what's left
Of Leslie Moore
No Les
No more



Directions: Answer these questions about the epitaphs.

1. What does the phrase "blown out of breath" mean? _____

2. What does the author mean when he says "and died a Merideth"? _____

3. What cavity is John Brown filling? _____

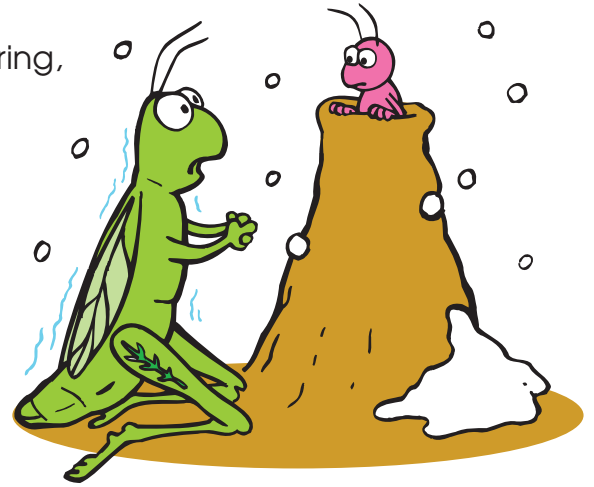
4. Write an epitaph of your own.

Comprehension: “The Ant and the Cricket”

A silly young cricket, who decided to sing
Through the warm sunny months of summer and spring,
Began to complain when he found that at home
His cupboards were empty and winter had come.

At last by starvation the cricket made bold
To hop through the wintertime snow and the cold.
Away he set off to a miserly ant
To see if to keep him alive he would grant
Shelter from rain, a mouthful of grain.
“I wish only to borrow—I’ll repay it tomorrow—
If not, I must die of starvation and sorrow!”

Said the ant to the cricket, “It’s true I’m your friend,
But we ants never borrow, we ants never lend;
We ants store up crumbs so when winter arrives
We have just enough food to keep ants alive.”



Directions: Use context clues to answer these questions about the poem.

1. What is the correct definition of **cupboards**?

- where books are stored where food is stored where shoes are stored

2. What is the correct definition of **miserly**?

- selfish/stingy generous/kind mean/ugly

3. What is the correct definition of **grant**?

- to take away to belch to give

4. In two sentences, describe what the poet is trying to say with this poem.

Comprehension: “The Elf and the Dormouse”

Under a toadstool
Crept a wee elf
Out of the rain
To shelter himself.

Under the toadstool
Sound asleep
Sat a big dormouse
All in a heap.

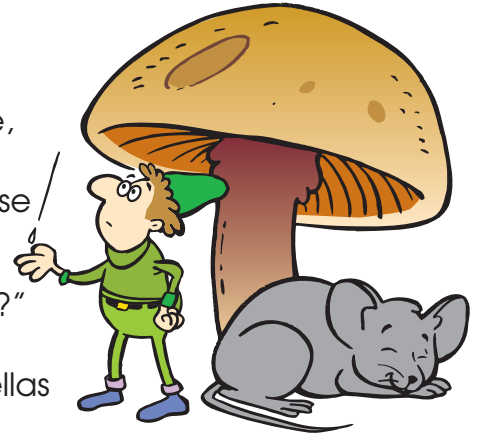
Trembled the wee elf
Frightened, and yet
Fearing to fly away
Lest he got wet.

To the next shelter
Maybe a mile!
Sudden the wee elf
Smiled a wee smile,

Tugged ‘til the toadstool
Topped in two,
Holding it over him
Gaily he flew.

Soon he was safe home,
Dry as could be;
Soon woke the dormouse
“Good gracious me!”

“Where is my toadstool?”
Loud he lamented.
And that’s when umbrellas
First were invented.



—*Oliver Herford*

Directions: Use context clues or a dictionary to answer these questions about the poem.

1. This humorous poem tells about what invention? _____

2. What do you think a **dormouse** is? _____

3. What is the correct definition of **lamented**? _____

4. Write a two-verse poem below describing the invention of a useful object.

Comprehension: “The Eagle”

Personification is a figure of speech in which human characteristics are given to an animal or object.

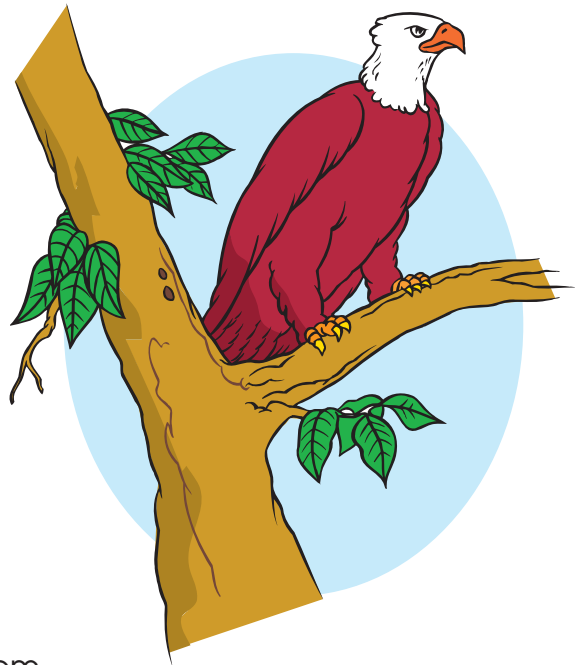
Example: The trees danced in the wind.

Trees do not dance; therefore, the trees are being personified.

He clasps the crag with crooked hands;
Close to the sun in lonely lands,
Ringed with the azure world, he stands.

The wrinkled sea beneath him crawls;
He watches from his mountain walls,
And like a thunderbolt he falls.

—Alfred, Lord Tennyson



Directions: Answer these questions about the poem.

1. What is the correct definition of **crag**? _____

2. What is the correct definition of **azure**? _____

3. Which phrases in the poem show personification? _____

4. Explain what one of these phrases actually means. _____

5. What is the author trying to say in the last line of the poem? _____

Comprehension: Proverbs

Proverbs are bits of advice for daily life. The following proverbs were written by Benjamin Franklin in 1732. They were published in *Poor Richard's Almanack*.

1. Keep conscience clear,
Then never fear.
2. Little strokes
Fell great oaks.
3. From a slip of foot you may soon recover,
But a slip of the tongue you may never get over.
4. Doing an injury puts you below your enemy;
Revenging one makes you but even with him;
Forgiving it sets you above him.



Directions: Explain the meaning of each proverb.

1. _____

2. _____

3. _____

4. _____

Write a proverb of your own.

Comprehension: Limericks

A **limerick** is a humorous verse consisting of five lines. The first, second, and fifth lines rhyme, and the third and fourth lines rhyme.

Old Man from Peru

There was an old man from Peru,
Who dreamed he was eating his shoe.
In the midst of the night
He awoke in a fright
And—good grief!—it was perfectly true.



Old Man from Darjeeling

There was an old man from Darjeeling,
Who boarded a bus bound for Ealing.
He saw on the door:
“Please don’t spit on the floor.”
So he stood up and spat on the ceiling.

Directions: Answer these questions about these silly limericks.

1. In “Old Man from Peru,” what was perfectly true? _____

2. How did the old man from Peru feel when he awoke? _____
3. In “Old Man from Darjeeling,” what is Ealing? _____
4. Did the old man from Darjeeling break any rules? _____

Write your own silly limerick below.

Comprehension: “The Tyger”

Imagery is a picture that comes into the reader’s mind when reading certain words.

Tyger! Tyger! burning bright
 In the forests of the night,
 What immortal hand or eye
 Could frame thy fearful symmetry?

In what distant deeps or skies
 Burnt the fire of thine eyes?
 On what wings dare he aspire?
 What the hand dare seize the fire?

And what shoulder, and what art,
 Could twist the sinew of thy heart,
 And when thy heart began to beat,
 What dread hand? and what dread feet?

What the hammer? what the chain?
 In what furnace was thy brain?
 What the anvil? what dread grasp
 Dare its deadly terrors clasp?

When the stars threw down their spears,
 And watered heaven with their tears,
 Did he smile his work to see?
 Did he who made the lamb make thee?

Tyger! Tyger! burning bright
 In the forests of the night,
 What immortal hand or eye,
 Dare frame thy fearful symmetry?

—William Blake

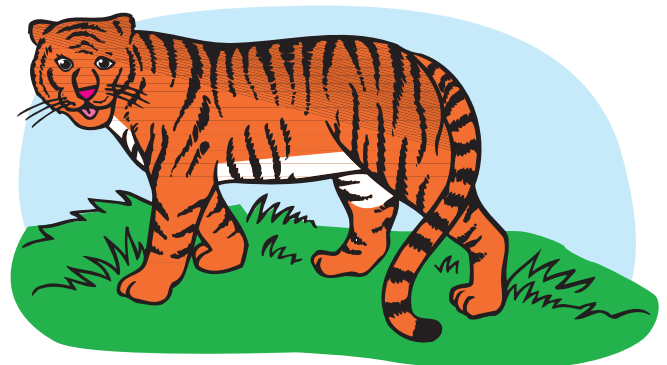
Directions: Use context clues or a dictionary to answer these questions about the poem.

1. What is the correct definition of **symmetry**? 5. What is the correct definition of **anvil**?

2. What is the correct definition of **immortal**? 6. What is some imagery in this poem?

3. What is the correct definition of **aspire**?

4. What is the correct definition of **sinew**?



Comprehension: Old Gaelic Lullaby

A **Gaelic lullaby** is an ancient Irish or Scottish song some parents sing as they rock their babies to sleep.

Hush! The waves are rolling in,
White with foam, white with foam,
Father works amid the din,
But baby sleeps at home.

Hush! The winds roar hoarse and deep—
On they come, on they come!
Brother seeks the wandering sheep,
But baby sleeps at home.

Hush! The rain sweeps over the fields,
Where cattle roam, where cattle roam.
Sister goes to seek the cows,
But baby sleeps at home.



Directions: Answer these questions about the Gaelic lullaby.

1. What is Father doing while baby sleeps? _____

2. What is Brother doing? _____

3. What is Sister doing? _____

4. What do we assume Mother is doing? _____

5. Is it quiet or noisy while Father works? quiet noisy

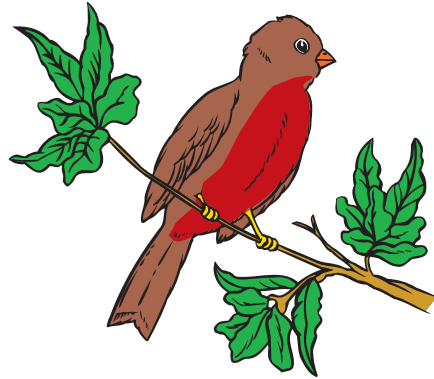
6. Which is not mentioned in the poem?

wind sunshine waves rain

Comprehension: “The Lark and the Wren”

“Goodnight, Sir Wren!” said the little lark.
 “The daylight fades; it will soon be dark.
 I’ve sung my hymn to the parting day.
 So now I fly to my quiet glen
 In yonder meadow—Goodnight, Wren!”

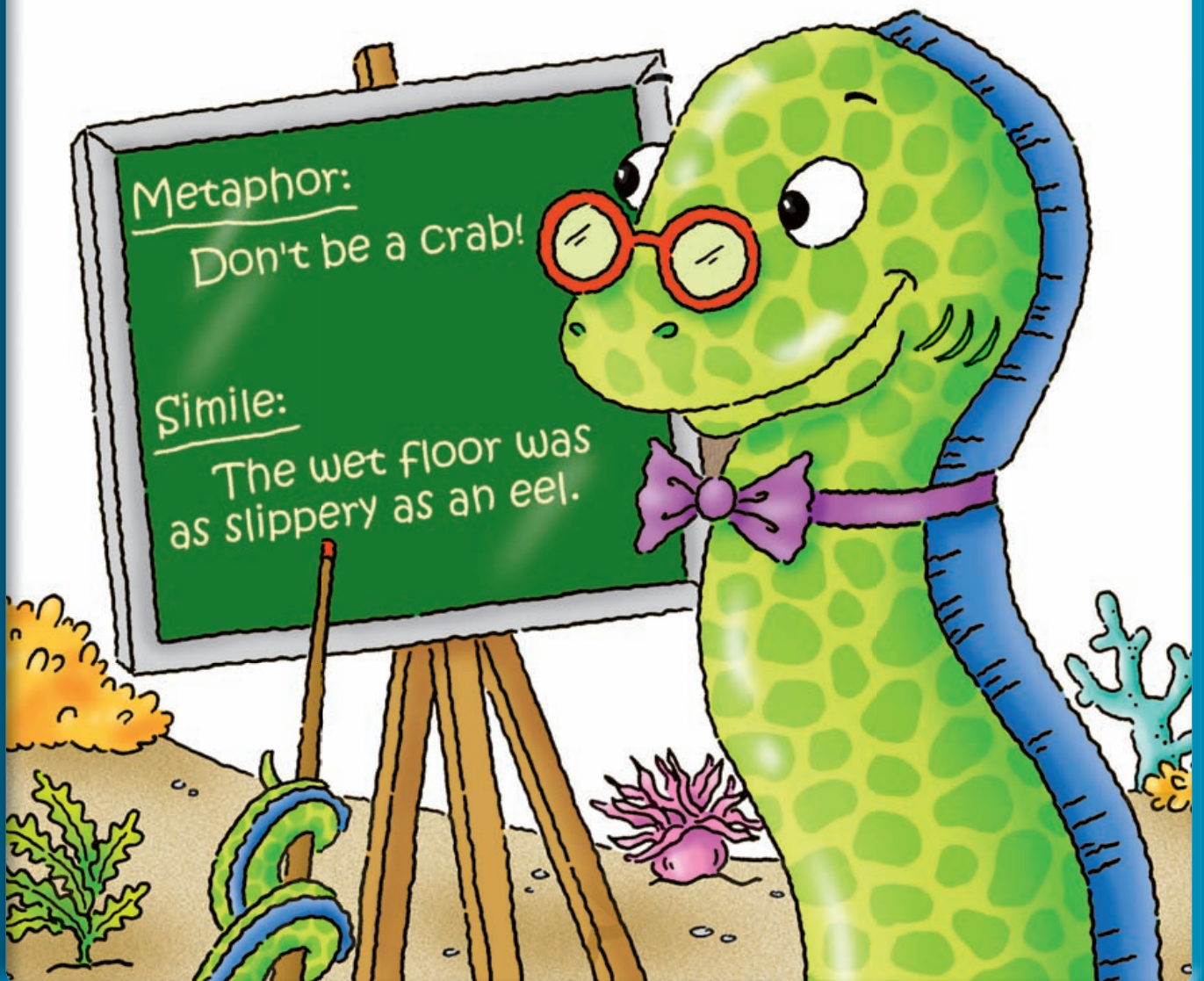
“Goodnight, poor Lark,” said the haughty wren,
 With a flick of his wing toward his happy friend.
 “I also go to my rest profound
 But not to sleep on the cold, damp ground.
 The fittest place for a bird like me
 Is the topmost bough of a tall pine tree.”



Directions: Use context clues for these definitions.

- What is the correct definition of **hymn**?
 whisper song opposite of her
- What is the correct definition of **yonder**?
 distant mountaintop seaside
- What is the correct definition of **haughty**?
 happy friendly pompous
- What is the correct definition of **profound**?
 restless deep uncomfortable
- What is the correct definition of **bough**?
 to bend over tree roots tree branch
- Write another verse of the poem.

ENGLISH



Nouns

A **noun** names a person, place, thing, or idea. There are several types of nouns.

Examples:

proper nouns: Joe, Jefferson Memorial

common nouns: dog, town

concrete nouns: book, stove

abstract nouns: fear, devotion

collective nouns: audience, flock



A word can be more than one type of noun.

Example: **Dog** is both a common and a concrete noun.

Directions: Write the type or types of each noun on the lines.

1. desk _____
2. ocean _____
3. love _____
4. cat _____
5. herd _____
6. compassion _____
7. reputation _____
8. eyes _____
9. staff _____
10. day _____
11. Roosevelt Building _____
12. Mr. Timken _____
13. life _____
14. porch _____
15. United States _____

Possessive Nouns

A **possessive** noun owns something. To make a singular noun possessive, add an apostrophe and **s**. **Example:** mayor's campaign

To make a plural noun possessive when it already ends with **s**, add only an apostrophe. **Example:** dogs' tails

To make a plural noun possessive when it doesn't end with **s**, add an apostrophe and **s**. **Example:** men's shirts

Directions: Write the correct form of the word for each sentence in the group. Words may be singular, plural, singular possessive, or plural possessive. The first one has been done for you.



teacher

1. How many teachers does your school have?
2. Where is the teacher's coat?
3. All the teachers' mailboxes are in the school office.

reporter

4. Two _____ were assigned to the story.
5. One _____ car broke down on the way to the scene.
6. The other _____ was riding as a passenger.
7. Both _____ notes ended up missing.

child

8. The _____ are hungry.
9. How much spaghetti can one _____ eat?
10. Put this much on each _____ plate.
11. The _____ spaghetti is ready for them.

mouse

12. Some _____ made a nest under those boards.
13. I can see the _____ hole from here.
14. A baby _____ has wandered away from the nest.
15. The _____ mother is coming to get it.

Verbs

A **verb** is a word that tells what something does or that something exists.

There are two types of verbs: **action** and **state of being**.

Examples:

Action: run, read, choose, wash, push, cut, drive, laugh, scream, reach

State of being: feel, sound, taste, stay, look, appear, grow, seem, smell, and forms of **be**

Directions: Write **A** if the verb shows action. Write **S** if it shows state of being.

1. _____ He helped his friend.
2. _____ They appear happy and content.
3. _____ Jordi drives to school each day.
4. _____ The snowfall closed schools everywhere.
5. _____ The dog sniffed at its food.
6. _____ The meat tastes funny.
7. _____ Did you taste the fruit salad?
8. _____ The young boy smelled the flowers.
9. _____ She looked depressed.
10. _____ The coach announced the dates of the scrimmage.
11. _____ The owner of the store stocks all types of sports equipment.
12. _____ He dribbled the ball down the court.
13. _____ Everything seems to be in order.



Verb Tense

Tense is the way a verb is used to express time. To explain what is happening right now, use the **present tense**.

Example: He **is singing** well. He **sings** well.

To explain what has already happened, use the **past tense**.

Example: He **sang** well.

To explain what will happen, use the **future tense**.

Example: He **will sing** well.

Directions: Rewrite each sentence so the verbs are in the same tense. The first one has been done for you.

1. He ran, he jumped, and then he is flying.

He ran, he jumped, and then he flew.

2. He was crying, and then he will stop.

3. She feels happy, but she was not sure why.

4. He is my friend, and so was she.

5. She bit into the peach and says it is good.

6. He laughs first and then told us the joke.



Spelling Different Forms of Verbs

To show that something is happening in the present, we can use the base form of a verb, or we can use **is** or **are** and add **ing** to the verb.

is/are + verb + ing
was/were + verb + ing



Example: We **run**. We **are running**.

To show that something has already happened, we can add **ed** to many verbs, or we can use **was** or **were** and add **ing** to a verb.

Example: The workers **surveyed** the land. The workers were **surveying** the land.

If a verb ends in **e**, drop the final **e** before adding an ending that begins with a vowel.

Example: She is **driving**. He **restored** the old car.

If a verb ends in **sh** or **ch**, add **es** instead of **s** to change the form.

Example: He furnishes. She watches.

Directions: Complete each sentence with the correct form of the verb given. The first one has been done for you.

1. The florist is (have) a sale this week. _____ having _____
2. Last night's tornado (destroy) a barn. _____
3. We are (research) the history of our town. _____
4. My mistake was (use) a plural verb instead of a singular one. _____
5. She (act) quickly in yesterday's emergency. _____
6. Our group is (survey) the parents in our community. _____
7. For our last experiment, we (observe) a plant's growth for two weeks. _____
8. A local company already (furnish) all the materials for this project. _____
9. Which dairy (furnish) milk to our cafeteria every day? _____
10. Just (ignore) the mess in here will not help your case. _____

Verb Tense

Directions: Write a sentence using the present tense of each verb.

1. walk _____

2. dream _____

3. achieve _____

Directions: Write a sentence using the past tense of each verb.

4. dance _____

5. study _____

6. hike _____

Directions: Write a sentence using the future tense of each verb.

7. bake _____

8. write _____

9. talk _____

Irregular Verb Forms

The past tense of most verbs is formed by adding **ed**. Verbs that do not follow this format are called **irregular verbs**.

The irregular verb chart shows a few of the many verbs with irregular forms.

Irregular Verb Chart		
Present Tense	Past Tense	Past Participle
go	went	has, have, or had gone
do	did	has, have, or had done
fly	flew	has, have, or had flown
grow	grew	has, have, or had grown
ride	rode	has, have, or had ridden
see	saw	has, have, or had seen
sing	sang	has, have, or had sung
swim	swam	has, have, or had swum
throw	threw	has, have, or had thrown

The words **had**, **have**, and **has** can be separated from the irregular verb by other words in the sentence.

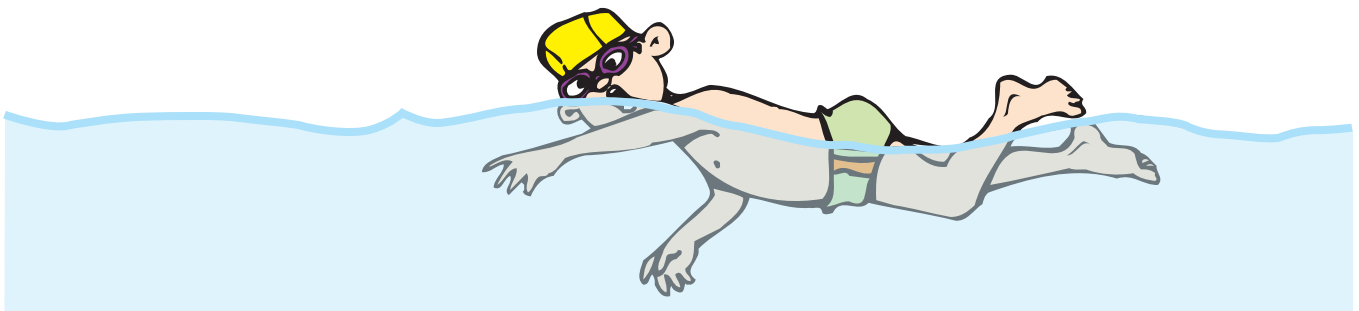
Directions: Choose the correct verb form from the chart to complete the sentences. The first one has been done for you.

- The pilot had never before flown that type of plane.
- She put on her bathing suit and _____ 2 miles.
- The tall boy had _____ 2 inches over the summer.
- She insisted she had _____ her homework.
- He _____ them walking down the street.
- She _____ the horse around the track.
- The pitcher has _____ the ball many times.
- He can _____ safely in the deepest water.

Irregular Verb Forms

Directions: Use the irregular verb chart on the previous page. Write the correct verb form to complete each sentence.

1. Has she ever _____ carrots in her garden?
2. She was so angry she _____ a tantrum.
3. The bird had sometimes _____ from its cage.
4. The cowboy has never _____ that horse before.
5. Will you _____ to the store with me?
6. He said he had often _____ her walking on his street.
7. She insisted she has not _____ taller this year.
8. He _____ briskly across the pool.
9. Have the insects _____ away?
10. Has anyone _____ my sister lately?
11. He hasn't _____ the dishes once this week!
12. Has she been _____ out of the game for cheating?
13. I haven't _____ her yet today.
14. The airplane _____ slowly by the airport.
15. Have you _____ your bike yet this week?



Nouns and Verbs

Some words can be used as both nouns and verbs.

Example:

The **bait** on his hook was a worm.
He couldn't **bait** his hook.

In the first sentence, **bait** is used as a **noun** because it names a thing. In the second sentence, **bait** is used as a **verb** because it shows action.

Directions: Write **noun** or **verb** for the word in bold in each sentence. The first one has been done for you.



- verb 1. She **piloted** the small plane across the Pacific Ocean.
- _____ 2. Does she **water** her garden every night?
- _____ 3. Did you **rebel** against the rules?
- _____ 4. Dad will pound the fence **post** into the ground.
- _____ 5. That was good **thinking**!
- _____ 6. I **object** to your language!
- _____ 7. He planned to become a **pilot** after graduation.
- _____ 8. The teacher will **post** the new school calendar.
- _____ 9. She was **thinking** of a book she read last week.
- _____ 10. The **object** of the search was forgotten.
- _____ 11. She was a **rebel** in high school.
- _____ 12. Would you like fresh **water** for your tea?

Spelling: Plurals

Is **heros** or **heroes** the correct spelling? Many people aren't sure. These rules have exceptions, but they will help you spell the plural forms of most words that end with **o**.

- If a word ends with a consonant and **o**, add **es**: **heroes**.
- If a word ends with a vowel and **o**, add **s**: **radios**.

Here are some other spelling rules for plurals:

- If a word ends with **s**, **ss**, **x**, **ch**, or **sh**, add **es**: **buses**, **kisses**, **taxes**, **peaches**, **wishes**.
- If a word ends with **f** or **fe**, drop the **f** or **fe** and add **ves**: **leaf**, **leaves**; **wife**, **wives**.
- Some plurals don't end with **s** or **es**: **geese**, **deer**, **children**.



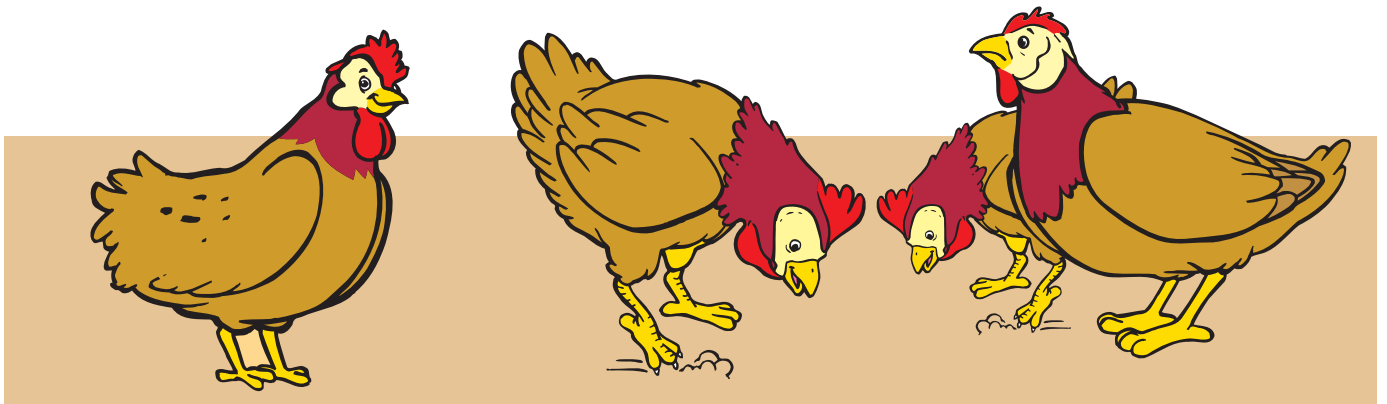
Directions: Write the plural forms of the words.

1. Our area doesn't often have (tornado). _____
2. How many (radio) does this store sell every month? _____
3. (Radish) are the same color as apples. _____
4. Does this submarine carry (torpedo)? _____
5. Hawaii has a number of active (volcano). _____
6. Did you pack (knife) in the picnic basket? _____
7. We heard (echo) when we shouted in the canyon. _____
8. Where is the list of (address)? _____
9. What will you do when that plant (reach) the ceiling? _____
10. Sometimes my dad (fix) us milkshakes. _____
11. Every night, my sister (wish) on the first star she sees. _____
12. Who (furnish) the school with pencils and paper? _____
13. The author (research) every detail in her books. _____

Spelling: Plurals

Directions: Write the plural form of each word.

- | | | | |
|---------------|-------|----------------|-------|
| 1. mother | _____ | 16. summary | _____ |
| 2. ankle | _____ | 17. issue | _____ |
| 3. journey | _____ | 18. member | _____ |
| 4. ceiling | _____ | 19. astronomer | _____ |
| 5. governor | _____ | 20. channel | _____ |
| 6. arch | _____ | 21. harmony | _____ |
| 7. carnival | _____ | 22. piece | _____ |
| 8. official | _____ | 23. chicken | _____ |
| 9. potato | _____ | 24. chemical | _____ |
| 10. vacuum | _____ | 25. journal | _____ |
| 11. stereo | _____ | 26. niece | _____ |
| 12. strategy | _____ | 27. mayor | _____ |
| 13. column | _____ | 28. particle | _____ |
| 14. architect | _____ | 29. entrance | _____ |
| 15. entry | _____ | 30. assistant | _____ |



Simple Subjects

The **simple subject** of a sentence tells who or what the sentence is about. It is a noun or a pronoun.

Example: My **mom** is turning forty this year.
Mom is the simple subject.

Directions: Circle the simple subject in each sentence.

1. The cat ate all its food.
2. They watched the basketball game.
3. Lucy is going to lunch with her friend.
4. José likes strawberry jam on his toast.
5. The reporter interviewed the victim.
6. She turned down the volume.
7. The farm animals waited to be fed.
8. Can you lift weights?
9. The fan did little to cool the hot room.
10. Thomas Jefferson was one of the founding fathers of our country.
11. I have a lot to do tonight.
12. Will you go to the movie with us?
13. We enjoyed the day at the park.
14. Our pet is a dog.
15. She retrieved her homework from the garbage.



Simple Predicates

The **simple predicate** of a sentence tells what the subject does, is doing, did, or will do. The simple predicate is always a verb.

Example:

My mom **is turning** forty this year.
Is turning is the simple predicate.

Directions: Underline the simple predicate in each sentence. Include all helping verbs.

1. I bought school supplies at the mall.
2. The tiger chased its prey.
3. Mark will be arriving shortly.
4. The hamburgers are cooking now.
5. We will attend my sister's wedding.
6. The dental hygienist cleaned my teeth.
7. My socks are hanging on the clothesline.
8. Where are you going?
9. The dog is running toward its owner.
10. Ramos watched the tornado in fear.
11. Please wash the dishes after dinner.
12. My dad cleaned the garage yesterday.
13. We are going hiking at Yellowstone today.
14. The picture shows our entire family at the family picnic.
15. Our coach will give us a pep talk before the game.



Parallel Structure

Parts of a sentence are **parallel** when they “match” grammatically and structurally.

Faulty parallelism occurs when the parts of a sentence do not match grammatically and structurally.

For sentences to be parallel, all parts of a sentence—including the verbs, nouns, and phrases—must match. This means that, in most cases, verbs should be in the same tense.

Examples:

Correct: She liked running, jumping, and swinging outdoors.

Incorrect: She liked running, jumping, and to swing outdoors.

In the correct sentence, all three of the actions the girl liked to do end in **ing**. In the incorrect sentence, they do not.

Directions: Rewrite the sentences so all elements are parallel. The first one has been done for you.

1. Politicians like making speeches and also to shake hands.

Politicians like making speeches and shaking hands.

2. He liked singing, acting, and to perform in general.

3. The soup had carrots, celery, and also has rice.

4. The drink was cold, frosty, and also is a thirst-quencher.

5. She was asking when we would arrive, and I told her.

6. Liz felt like shouting, singing, and to jump.



Matching Subjects and Verbs

If the subject of a sentence is singular, the verb must be singular. If the subject is plural, the verb must be plural.

Example:

The **dog** with floppy ears **is eating**.

The **dogs** in the yard **are eating**.

Directions: Write the singular or plural form of the subject in each sentence to match the verb.



1. The (yolk) _____ in this egg is bright yellow.
2. The (child) _____ are putting numbers in columns.
3. Both (coach) _____ are resigning at the end of the year.
4. Those three (class) _____ were assigned to the gym.
5. The (lunch) _____ for the children are ready.
6. (Spaghetti) _____ with meatballs is delicious.
7. Where are the (box) _____ of chalk?
8. The (man) _____ in the truck were collecting broken tree limbs.
9. The (rhythm) _____ of that music is exactly right for dancing.
10. Sliced (tomato) _____ on lettuce are good with salmon.
11. The (announcer) _____ on TV was condemning the dictator.
12. Two (woman) _____ are campaigning for mayor of our town.
13. The (group) _____ of travelers was on its way to three foreign countries.
14. The (choir) _____ of thirty children is singing hymns.
15. In spite of the parade, the (hero) _____ were solemn.

Subject/Verb Agreement

Singular subjects require singular verbs. **Plural subjects** require plural verbs. The subject and verb must agree in a sentence.

Example:

Singular: My dog runs across the field.

Plural: My dogs run across the field.

Directions: Circle the correct verb in each sentence.

1. Maria (talk/talks) to me each day at lunch.
2. Mom, Dad, and I (is/are) going to the park to play catch.
3. Mr. and Mrs. Ramirez (dance/dances) well together.
4. Astronauts (hope/hopes) for a successful shuttle mission.
5. Trees (prevent/prevents) erosion.
6. The student (is/are) late.
7. She (ask/asks) for directions to the senior high gym.
8. The elephants (plod/plods) across the grassland to the watering hole.
9. My friend's name (is/are) Rebecca.
10. Many people (enjoy/enjoys) orchestra concerts.
11. The pencils (is/are) sharpened.
12. My backpack (hold/holds) a lot of things.
13. The wind (blow/blows) to the south.
14. Sam (collect/collects) butterflies.
15. They (love/loves) fresh strawberries.



Personal Pronouns

Personal pronouns take the place of nouns. They refer to people or things. **I, me, we, she, he, him, her, you, they, them, us,** and **it** are personal pronouns.

Directions: Circle the personal pronouns in each sentence.

1. He is a terrific friend.
2. Would you open the door?
3. Jim and I will arrive at ten o'clock.
4. Can you pick me up at the mall after dinner?
5. What did you do yesterday?
6. They are watching the game on television.
7. Jessie's mom took us to the movies.
8. She writes novels.
9. They gave us the refrigerator.
10. Is this the answer she intended to give?
11. What is it?
12. The dog yelped when it saw the cat.
13. I admire him.
14. We parked the bikes by the tree.
15. The ants kept us from enjoying our picnic.



Possessive Pronouns

Possessive pronouns show ownership. **My, mine, your, yours, his, her, hers, their, theirs, our, ours,** and **its** are possessive pronouns.

Directions: Circle the possessive pronouns in each sentence.

1. My dogs chase cats continually.
2. Keiko put her sunglasses on the dashboard.
3. His mother and mine are the same age.
4. The cat licked its paw.
5. Their anniversary is February 1.
6. This necklace is yours.
7. We will carry our luggage into the airport.
8. Our parents took us to dinner.
9. My brother broke his leg.
10. Her report card was excellent.
11. Raspberry jam is my favorite.
12. Watch your step!
13. The house on the left is mine.
14. My phone number is unlisted.
15. Our garden is growing out of control.
16. Our pumpkins are ten times larger than theirs.



Interrogative Pronouns

An **interrogative pronoun** asks a question. There are three interrogative pronouns: **who**, **what**, and **which**.

Use **who** when speaking of people.

Use **what** when speaking of things.

Use **which** when speaking of people or things.

Examples:

Who will go? **What** will you do? **Which** of these is yours?

Who becomes **whom** when it is a direct object or an object of a preposition. The possessive form of **whom** is **whose**.

Examples:

To **whom** will you write?

Whose computer is that?



Directions: Write the correct interrogative pronoun.

1. _____ wet raincoat is this?
2. _____ is the president of the United States?
3. _____ is your name?
4. _____ dog made this muddy mess?
5. _____ cat ran away?
6. _____ of you is the culprit?
7. _____ was your grade on the last test?
8. To _____ did you report?
9. _____ do you believe now?
10. _____ is the leader of this English study group?

Personal and Possessive Pronouns

Directions: Write personal or possessive pronouns in the blanks to take the place of the words in bold. The first one has been done for you.

They him

1. **Maisie and Marni** told **Trent** they would see him later.
2. **Spencer** told **Amelia and Jada** good-bye.
3. **The bike** was parked near **Aaron's** house.
4. **Maria, Matt, and Greg** claimed the car was new.
5. The dishes were **the property of Gabriella and Jake**.
6. Is this **Layla's**?
7. **Jon** walked near **Jessica and Esau's** house.
8. **The dog** barked all night long!
9. **Ana** fell and hurt **Ana's** knee.
10. **Cory and Devan** gave the dog **the dog's** dinner.
11. **Tori and I** gave **Brett and Reggie** a ride home.
12. Do **Josh and Andrea** like cats?
13. **Sasha and Keesha** gave **Josh and me** a ride home.
14. Is this sweater **Chloe's**?
15. The cat meowed because **the cat** was hungry.



Pronoun/Antecedent Agreement

Often, a **pronoun** is used in place of a noun to avoid repeating the noun again in the same sentence. The noun that a pronoun refers to is called its **antecedent**. The word **antecedent** means “going before.”

If the noun is singular, the pronoun that takes its place must also be singular. If the noun is plural, the pronoun that takes its place must also be plural. This is called *agreement* between the pronoun and its antecedent.

Examples:

Kylie (singular noun) said **she** (singular pronoun) would dance.

The **dogs** (plural noun) took **their** (plural pronoun) dishes outside.

When the noun is singular and the gender unknown, it is correct to use **his or her**.

Directions: Rewrite the sentences so the pronouns and nouns agree. The first one has been done for you.

1. Every student opened their book.

Every student opened his or her book.

2. Has anyone lost their wallet lately?

3. Somebody found the wallet under their desk.

4. Someone will have to file their report.

5. Every dog has their day!

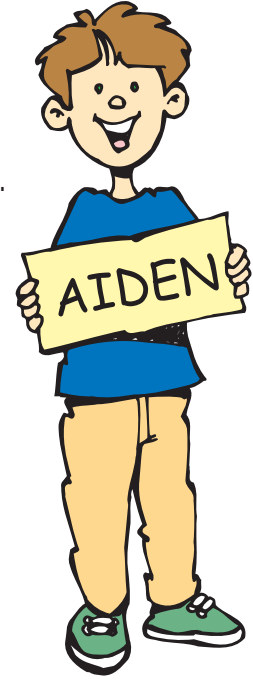
6. I felt Ted had mine best interests at heart.



Pronoun/Antecedent Agreement

Directions: Write a pronoun that agrees with the antecedent.

1. Aiden said _____ would go to the store.
2. My friend discovered _____ wallet had been stolen.
3. The cat licked _____ paw.
4. Did any woman here lose _____ necklace?
5. Someone will have to give _____ report.
6. Aliyah wished _____ had not come.
7. All the children decided _____ would attend.
8. My grandmother hurt _____ back while gardening.
9. Jerry, Marco, and I hope _____ win the game.
10. Hailey looked for _____ missing homework.
11. The family had _____ celebration.
12. My dog jumps out of _____ pen.
13. Somebody needs to remove _____ clothes from this chair.
14. Everything has _____ place in Grandma's house.
15. The team will receive _____ uniforms on Monday.
16. Each artist wants _____ painting to win the prize.



Appositives

An **appositive** is a noun or pronoun placed after another noun or pronoun to further identify or rename it. An appositive and the words that go with it are usually set off from the rest of the sentence with commas. Commas are not used if the appositive tells “which one.”

Example: Angela’s mother, **Ms. Glover**, will visit our school.

Commas are needed because **Ms. Glover** renames Angela’s mother.

Example: Angela’s neighbor Maggy will visit our school.

Commas are not needed because the appositive “Maggy” tells **which** neighbor.

Directions: Write the appositive in each sentence in the blank. The first one has been done for you.



- _____ **Ava** _____ 1. My friend Ava wants a horse.
- _____ 2. She subscribes to the magazine Horses.
- _____ 3. Her horse is the gelding Brownie.
- _____ 4. We rode in her new car, a convertible.
- _____ 5. Her gift was jewelry, a bracelet.
- _____ 6. Have you met Ms. Abbott, the senator?
- _____ 7. My cousin Karl is very shy.
- _____ 8. Do you eat the cereal Oaties?
- _____ 9. Kiki’s cat, Samantha, will eat only tuna.
- _____ 10. My last name, Jones, is very common.

Dangling Modifiers

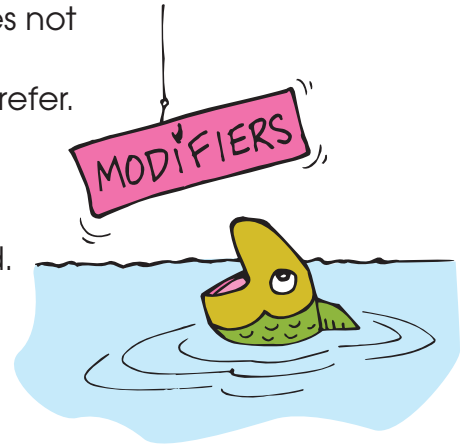
A **dangling modifier** is a word or group of words that does not modify what it is supposed to modify. To correct dangling modifiers, supply the missing words to which the modifiers refer.

Examples:

Incorrect: While doing the laundry, the dog barked.

Correct: While I was doing the laundry, the dog barked.

In the **incorrect** sentence, it sounds as though the dog is doing the laundry. In the **correct** sentence, it's clear that **I** is the subject of the sentence.



Directions: Rewrite the sentences to make the subject of the sentence clear and eliminate dangling modifiers. The first one has been done for you.

1. While eating our dinner, the doctor called.

While we were eating our dinner, the doctor called.

2. Living in Cincinnati, the ball park is nearby.

3. While watching the movie, the TV screen went blank.

4. While listening to the concert, the lights went out.

5. Tossed regularly, anyone can make great salad.

6. While working, something surprised him.

Review

Directions: Write **noun** or **verb** to describe the words in bold.

- _____ 1. She is one of the fastest **runners** I've seen.
_____ 2. She is **running** very fast!
_____ 3. She **thought** he was handsome.
_____ 4. Please share your **thoughts** with me.
_____ 5. I will **watch** the volleyball game on video.
_____ 6. The sailor fell asleep during his **watch**.
_____ 7. My grandmother believes my purchase was a real **find**.
_____ 8. I hope to **find** my lost books.

Directions: Rewrite the verb in the correct tense.

- _____ 9. She **swim** across the lake in 2 hours.
_____ 10. He has **ride** horses for years.
_____ 11. Have you **saw** my sister?
_____ 12. She **fly** on an airplane last week.
_____ 13. My father had **instruct** me in the language.
_____ 14. I **drive** to the store yesterday.
_____ 15. The movie **begin** late.
_____ 16. Where **do** you go yesterday?

Directions: Circle the pronouns.

17. She and I told them to forget it!
18. They all wondered if her dad would drive his new car.
19. We want our parents to believe us.
20. My picture was taken at her home.

Review

Directions: Rewrite the sentences to correct the faulty parallels.

1. The fresh blueberries were sweet, juicy, and are delicious.

2. The town was barren, windswept, and is empty.

3. The dog was black, long-haired, and is quite friendly.

4. My favorite dinners are macaroni and cheese, spaghetti, and I loved fish.

Directions: Rewrite the sentences to make the verb tenses consistent.

5. We laughed, cried, and were jumping for joy.

6. She sang, danced, and was doing somersaults.

7. The class researched, studied, and were writing their reports.

8. Orlando and Maya talked about their vacation and share their experiences.

Directions: Circle the pronouns that agree with their antecedents.

9. She left (her/their) purse at the dance.

10. Each dog wagged (its/their) tail.

11. We walked to (our/he) car.

12. The lion watched (his/its) prey.

Review

Directions: Rewrite the sentences to correct the dangling modifiers.

1. Living nearby, the office was convenient for her.

2. While doing my homework, the doorbell rang.

3. Watching over her shoulder, she hurried away.

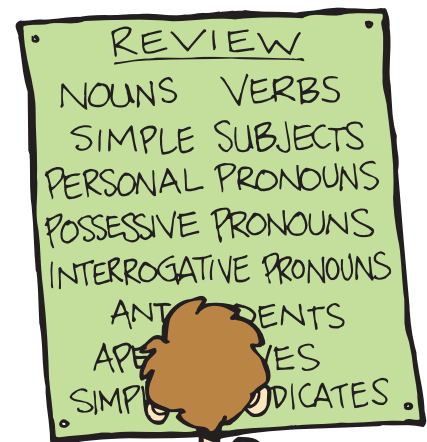
4. Drinking from the large mug, he choked.

Directions: Circle the correct pronouns.

5. She laughed at my brother and (I/me).
 6. At dawn, (he and I/him and me) were still talking.
 7. Someone left (his or her/their) coat on the floor.
 8. Lauren said (her/she) would not be late.

Directions: Circle the appositive.

9. The school nurse, Ms. Franklin, was worried about him.
 10. The car, a Volkswagen, was illegally parked.
 11. My hero, Babe Ruth, was an outstanding baseball player.
 12. Is that car, the plum-colored one, for sale?
 13. Will Mr. Zimmer, Todd's father, buy that car?



Adjectives

Adjectives describe nouns.

Examples:

tall girl

soft voice

clean hands

Directions: Circle the adjectives. Underline the nouns they describe. Some sentences may have more than one set of adjectives and nouns.



1. The lonely man sat in the dilapidated house.
2. I hope the large crop of grapes will soon ripen.
3. The white boxes house honeybees.
4. My rambunctious puppy knocked over the valuable flower vase.
5. The "unsinkable" *Titanic* sank after striking a gigantic iceberg.
6. His grades showed his tremendous effort.
7. There are many purple flowers in the large arrangement.
8. These sweet peaches are the best I've tasted.
9. The newsletter describes several educational workshops.
10. The rodeo featured professional riders and funny clowns.
11. My evening pottery class is full of very interesting people.
12. My older brother loves his new pickup truck.
13. Amira's family bought a big-screen TV.

Comparing with Adjectives

When adjectives are used to compare two things, **er** is added at the end of the word for most one-syllable words and some two-syllable words.

Example: It is **colder** today than it was yesterday.

With many two-syllable words and all words with three or more syllables, the word **more** is used with the adjective to show comparison.

Example: Dr. X is **more professional** than Dr. Y.

When adjectives are used to compare three or more things, **est** is added at the end of the word for **most** one-syllable words and some two-syllable words.

Example: Today is the **coldest** day of the year.

With many two-syllable words and all words with three or more syllables, **most** is used with the adjective to show comparison.

Example: Dr. X is the **most professional** doctor in town.

When adding **er** or **est** to one-syllable words, these spelling rules apply.

- Double the last consonant if the word has a short vowel before a final consonant: thinner, fatter.
- If a word ends in **y**, change the **y** to **i** before adding **er** or **est**: earliest, prettiest.
- If a word ends in **e**, drop the final **e** before adding **er** or **est**: simpler, simplest.

Directions: Complete these sentences with the correct form of the adjective.

1. This book is (small) _____ than that one.
2. I want the (small) _____ book in the library.
3. My plan is (practical) _____ than yours.
4. My plan is the (practical) _____ one in the class.
5. I wish the change was (gradual) _____ than it is.
6. My sister is the (childish) _____ girl in her day-care group.
7. There must be a (simple) _____ way to do it than that.
8. This is the (simple) _____ way of the four we thought of.



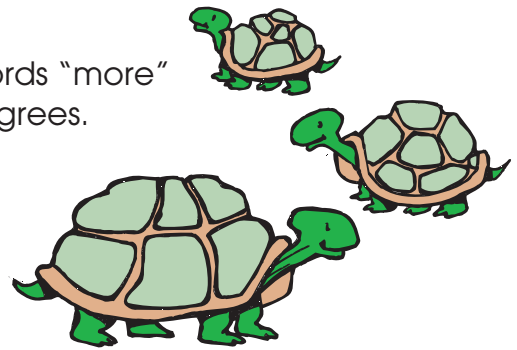
Adjectives: Positive, Comparative, and Superlative

There are three degrees of comparison adjectives: **positive**, **comparative**, and **superlative**. The **positive degree** is the adjective itself. The **comparative** and **superlative** degrees are formed by adding **er** and **est**, respectively, to most one-syllable adjectives. The form of the word changes when the adjective is irregular, for example, **good, better, best**.

Most adjectives of two or more syllables require the words "more" or "most" to form the comparative and superlative degrees.

Examples:

- | | | |
|---------------------|---------|------------|
| Positive: | big | eager |
| Comparative: | bigger | more eager |
| Superlative: | biggest | most eager |



Directions: Write the positive, comparative, or superlative forms of these adjectives.

Positive	Comparative	Superlative
1. hard	_____	_____
2. _____	happier	_____
3. _____	_____	most difficult
4. cold	_____	_____
5. _____	easier	_____
6. _____	_____	largest
7. little	_____	_____
8. _____	shinier	_____
9. round	_____	_____
10. _____	_____	most beautiful

Adverbs

Adverbs tell when, where, or how an action occurred.

Examples:

- I'll go **tomorrow**. (when)
- I sleep **upstairs**. (where)
- I screamed **loudly**. (how)

Directions: Circle the adverb, and underline the verb it modifies. Write the question (when, where, or how) the adverb answers.



1. I ran quickly toward the finish line. _____
2. Today, we will receive our report cards. _____
3. He swam smoothly through the pool. _____
4. Many explorers searched endlessly for new lands. _____
5. He looked up into the sky. _____
6. My friend drove away in her new car. _____
7. Later, we will search for your missing wallet. _____
8. Most kings rule their kingdoms regally. _____
9. New plants must be watered daily. _____
10. The stream near our house is heavily polluted. _____
11. My baby brother likes to walk backwards across his room. _____

Adverbs: Positive, Comparative, and Superlative

There are also three degrees of comparison adverbs: **positive**, **comparative**, and **superlative**. They follow the same rules as adjectives.

Example:

Positive:	rapidly	far
Comparative:	more rapidly	farther
Superlative:	most rapidly	farthest



Directions: Write the positive, comparative, or superlative forms of these adverbs.

Positive	Comparative	Superlative
1. easily	_____	_____
2. _____	more quickly	_____
3. _____	_____	most hopefully
4. bravely	_____	_____
5. _____	more strongly	_____
6. near	_____	_____
7. _____	_____	most cleverly
8. _____	more gracefully	_____
9. _____	_____	most humbly
10. excitedly	_____	_____
11. _____	more handsomely	_____
12. slowly	_____	_____

Adjectives and Adverbs

Directions: Write **adjective** or **adverb** in the blanks to describe the words in bold. The first one has been done for you.

adjective

- _____ 1. Her **old** boots were caked with mud.
- _____ 2. The baby was **cranky**.
- _____ 3. He took the test **yesterday**.
- _____ 4. I heard the **funniest** story last week!
- _____ 5. She left her wet shoes **outside**.
- _____ 6. Isn't that the **fluffiest** cat you've ever seen?
- _____ 7. He ran **around** the track twice.
- _____ 8. Our elderly neighbor seems **lonely**.
- _____ 9. His **kind** smile lifted my dragging spirits.
- _____ 10. **Someday**, I'll meet the friend of my dreams!
- _____ 11. His cat never meows **indoors**.
- _____ 12. Carlos hung his new shirts **back** in the closet.
- _____ 13. Put that valuable vase **down** immediately!
- _____ 14. She is the most **joyful** child!
- _____ 15. Jonathan's wool sweater is totally **moth-eaten**.

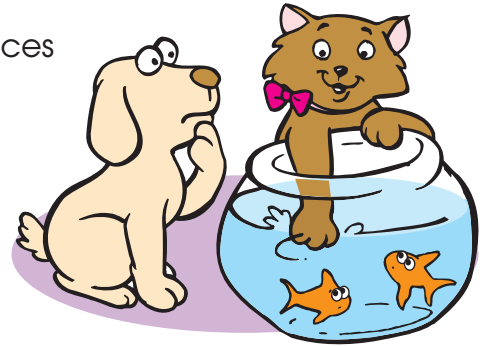


Identifying Sentence Parts

The **subject** tells who or what a sentence is about. Sentences can have more than one subject.

Example: **Dogs** and **cats** make good pets.

The **predicate** tells what the subject does or that it exists. Predicates can be more than one word. A sentence can have more than one predicate.



Examples: She **was walking**. She **walked** and **ran**.

An **adjective** is a word or group of words that describes the subject or another noun.

Example: The **cheerful yellow** bird with **blue** spots flew across the **flower-covered** meadow.

An **adverb** is a word or group of words that tells how, when, where, or how often.

Example: He sat **there** waiting **quietly**.

Directions: Write **S** for subject, **P** for predicate, **ADJ** for adjective, or **ADV** for adverb above each underlined word or group of words. The first one has been done for you.

- ADJ S ADJ P ADV
1. A huge dog with long teeth was barking fiercely.
 2. My grandmother usually wore a hat with a veil.
 3. My niece and her friend are the same height.
 4. The lively reindeer danced and pranced briefly on the rooftop.



Directions: Write sentences containing the sentence parts listed. Mark each part even if the verb part gets separated.

1. Write a question with two subjects, two predicates, and two adjectives:

2. Write a statement with one subject, two predicates, and two adjectives:

Identifying Sentence Parts

Directions: Write **S** for subject, **P** for predicate, **ADJ** for adjective, or **ADV** for adverb above the appropriate words in these sentences.

1. The large cat pounced on the mouse ferociously.
2. Did you remember your homework?
3. My mother is traveling to New York tomorrow.
4. I play basketball on Monday and Friday afternoons.
5. The old, decrepit house sat at the end of the street.
6. Several tiny rabbits nibbled at the grass at the edge of the field.
7. The lovely bride wore a white dress with a long train.
8. We packed the clothes for the donation center in a box.
9. The telephone rang incessantly.
10. The lost child cried helplessly.
11. What will we do with these new puppies?
12. Lauren reads several books each week.
13. The picture hung precariously on the wall.
14. I purchased many new school supplies.
15. Computers have changed the business world.



Prepositions

A **preposition** is a word that comes before a noun or pronoun and shows the relationship of that noun or pronoun to some other word in the sentence.

The **object of a preposition** is the noun or pronoun that follows a preposition and adds to its meaning.

A **prepositional phrase** includes the preposition, the object of the preposition, and all modifiers.

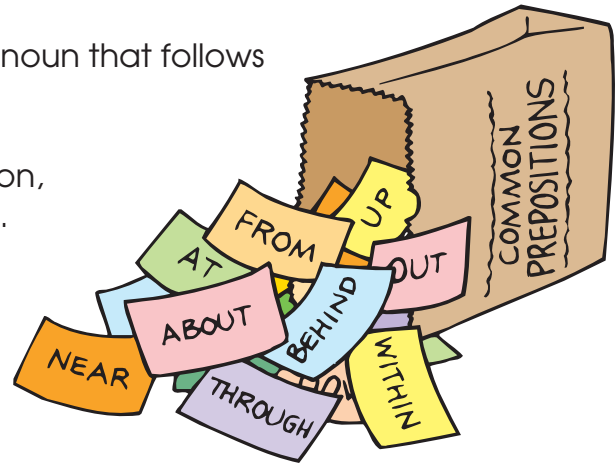
Example:

She gave him a pat **on his back**.

On is the preposition.

Back is the object of the preposition.

His is a possessive pronoun.



Common Prepositions			
about	down	near	through
above	for	of	to
across	from	off	up
at	in	on	with
behind	into	out	within
by	like	past	without

Directions: Underline the prepositional phrases. Circle the prepositions. Some sentences have more than one prepositional phrase. The first one has been done for you.

1. He claimed he felt (at) home only (on) the West Coast.
2. She went up the street and then down the block.
3. The famous poet was near the doorway.
4. The beautiful birthday card was from her father.
5. He left his wallet at home.
6. Her speech was totally without humor.
7. I think he's from New York City.
8. Kari wanted to go with her mother to the mall.

Prepositions

Directions: Complete the sentences by writing objects for the prepositions. The first one has been done for you.



1. He was standing at the corner of Fifth and Main.
2. She saw her friend across _____
3. Have you ever looked beyond _____
4. His contact lens fell into _____
5. Have you ever gone outside without _____
6. She was anxious for _____
7. Is that dog from _____
8. She was daydreaming and walked past _____
9. The book was hidden behind _____
10. The young couple had fallen in _____
11. She insisted she was through _____
12. He sat down near _____
13. She forgot her umbrella at _____
14. Have you ever thought of _____
15. Henry found his glasses on _____

Object of a Preposition

The **object of a preposition** is the noun or pronoun that follows the preposition and adds to its meaning.

Example:

Correct: Devan smiled **at** (preposition) **Tori** (noun: object of the preposition) and **me** (pronoun: object of the same preposition.)

Correct: Devan smiled at Tori. Devan smiled at me. Devan smiled at Tori and me.

Incorrect: Devan smiled at Tori and I.

Tip: If you are unsure of the correct pronoun to use, pair each pronoun with the verb, and say the phrase out loud to find out which pronoun is correct.

Directions: Write the correct pronouns on the blanks. The first one has been done for you.

- him 1. It sounded like a good idea to Sadie and (he/him).
- _____ 2. I asked Abby if I could attend with (her/she).
- _____ 3. To (we/us), holidays are very important.
- _____ 4. Between (we/us), we finished the job quickly.
- _____ 5. They gave the award to (he and I/him and me).
- _____ 6. The party was for my brother and (I/me).
- _____ 7. I studied with (he/him).
- _____ 8. Tanya and the others arrived after (we/us).
- _____ 9. After the zoo, we stopped at the museum with Azim and (her/she).
- _____ 10. The chips for (he/him) are in the bag on top of the refrigerator.

Direct Objects

A **direct object** is a noun or pronoun. It answers the question **whom** or **what** after a verb.

Examples:

My mom baked **bread**.

Bread is the direct object. It tells **what** Mom baked.

We saw **Steve**.

Steve is the direct object. It tells **whom** we saw.



Directions: Write a direct object in each sentence.

1. My dog likes _____. WHAT?
2. My favorite drink is _____. WHAT?
3. I saw _____ today. WHOM?
4. The car struck a _____. WHAT?
5. The fan blew _____ through the room. WHAT?
6. I packed a _____ for lunch. WHAT?
7. We watched _____ play basketball. WHOM?
8. I finished my _____. WHAT?
9. The artist sketched the _____. WHAT?
10. He greets _____ at the door. WHOM?
11. The team attended the victory _____. WHAT?
12. The beautician cut my _____. WHAT?
13. Tamika will write _____. WHAT?

Indirect Objects

An **indirect object** is a noun or pronoun that tells **to whom or what** or **for whom or what** the action is performed. An indirect object usually is found between a verb and a direct object.

Example:

I gave **Ellen** my address.

Ellen is the indirect object. It tells **to whom** I gave my address.

Directions: Circle the indirect objects. Underline the direct objects.

1. Emma told Kameko the secret.
2. Advertisers promise consumers the world.
3. The dogs showed me their tricks.
4. Aunt Martha gave Audrey a necklace for her birthday.
5. Ramon brought Mom a bouquet of fresh flowers.
6. I sent my niece a package for Christmas.
7. Mr. Dunbar left his wife a note before leaving.
8. Grandma and Grandpa made their friends dinner.
9. The baby handed her mom a toy.
10. Tierra told Stephanie the recipe for trail mix.
11. We sent Grandma a card.
12. The waiter served us dessert.
13. Mom and Dad sold us the farm.



Joining Sentences

Conjunctions are words that join sentences, words, or ideas. When two sentences are joined with **and**, they are more or less equal.

Example: Julio is coming, **and** he is bringing snacks.

When two sentences are joined with **but**, the second sentence contradicts the first one.

Example: Julio is coming, **but** he will be late.

When two sentences are joined with **or**, they name a choice.

Example: Julio might bring snacks, **or** he might bring lemonade.

When two sentences are joined with **because**, the second one names the reason for the first one.

Example: I'll bring snacks, too, **because** Julio might forget his.

When two sentences are joined with **so**, the second one names a result of the first one.

Example: Julio is bringing snacks, **so** we can eat when he gets here.

Directions: Complete each sentence. The first one has been done for you.

1. We could watch TV, or we could play a game. _____
2. I wanted to seize the opportunity, but _____
3. You had better not deceive me, because _____
4. My neighbor was on vacation, so _____
5. Veins take blood back to your heart, and _____
6. You can't always yield to your impulses, because _____
7. I know that is your belief, but _____
8. It could be reindeer on the roof, or _____
9. Brent was determined to achieve his goal, so _____
10. Brittany was proud of her height, because _____



Conjunctions

The conjunctions **and**, **or**, **but**, and **nor** can be used to make a compound subject, a compound predicate, or a compound sentence.

Examples:

Compound subject: My friend **and** I will go to the mall.

Compound predicate: We ran **and** jumped in gym class.

Compound sentence: I am a talented violinist, **but** my father is better.



Directions: Write two sentences of your own in each section.

Compound subject:

1. _____

2. _____

Compound predicate:

1. _____

2. _____

Compound sentence:

1. _____

2. _____

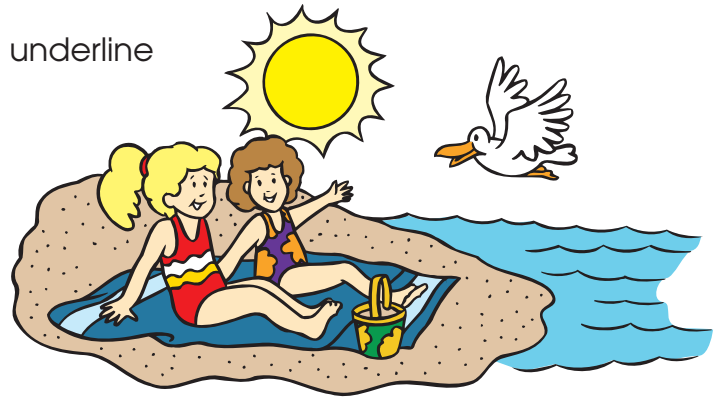
Review

Directions: Write the missing verb tenses.

Present	Past	Past Participle
1. catch	_____	_____
2. _____	stirred	_____
3. _____	_____	has (have) baked
4. go	_____	_____
5. _____	said	_____

Directions: Circle the simple subject, and underline the simple predicate in each sentence.

- Maria got sunburned at the beach.
- The class watched the program.
- The tomatoes are ripening.
- We went grocery shopping.
- The cross country team practiced all summer.



Directions: Write the missing adjective or adverb forms below.

Positive	Comparative	Superlative
11. _____	more friendly	_____
12. small	_____	_____
13. _____	_____	most fun
14. _____	more attractive	_____

Review

Directions: Write **adjective** or **adverb** to describe the words in bold.

_____ 1. My **old** piano teacher lives nearby.

_____ 2. My old piano teacher lives **nearby**.

_____ 3. His hair looked **horrible**.

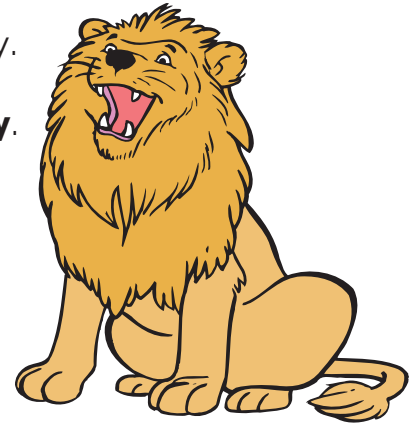
_____ 4. Have you heard this **silly** joke?

_____ 5. **Suddenly**, the door opened.

_____ 6. The **magnificent** lion raised its head.

_____ 7. I accomplished the task **yesterday**.

_____ 8. This party has **delicious** food.



Directions: Circle the prepositions.

9. He went in the door and up the stairs.

10. Is this lovely gift from you?

11. I was all for it, but the decision was beyond my power.

12. His speech dragged on into the night.

13. My great-grandmother's crystal dish is in the curio cabinet.

14. He received a trophy for his accomplishments on the team.

15. The president of the United States is on vacation.

16. Joel wrote an excellent essay about Christopher Columbus.

Cumulative Review

Directions: Identify the part of speech of the words in bold. The first one has been done for you.



preposition

1. The dog ran **across** the field.
2. My **parents** allow me to stay up until 10:00 P.M.
3. Our cat **is** long-haired.
4. Matt will wash the **dirty** dishes.
5. Miguel washed the **car** on Saturday.
6. The waterfall crashed **over** the cliff.
7. What will you give **her**?
8. The car **rolled** to a stop.
9. He **slowly** finished his homework.
10. My **nephew** will be 12 years old on Sunday.
11. The news program discussed the **war**.
12. Our **family** portrait was taken in the gazebo.
13. I **would like** to learn to fly a plane.
14. **My** hair needs to be trimmed.
15. **Strawberry** jam is her favorite.
16. The horse **quickly** galloped across the field.
17. **What** will you do next?
18. Please stand **and** introduce yourself.
19. My neighbor takes **great** pride in her garden.
20. She sang **well** tonight.
21. My grandmother is from **Trinidad**.

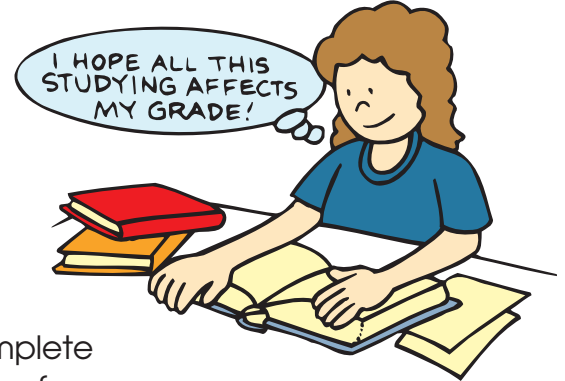
Affect and Effect

Affect means “to act upon or influence.”

Example: Studying will **affect** my test grade.

Effect means “to bring about a result or to accomplish something.”

Example: The **effect** of her smile was immediate!



Directions: Write **affect** or **effect** in the blanks to complete these sentences correctly. The first one has been done for you.

- affects 1. Your behavior (affects/effects) how others feel about you.
- 2. His (affect/effect) on her was amazing.
- 3. The (affect/effect) of his jacket was striking.
- 4. What you say won't (affect/effect) me!
- 5. There's a relationship between cause and (affect/effect).
- 6. The (affect/effect) of her behavior was positive.
- 7. The medicine (affected/effected) my stomach.
- 8. What was the (affect/effect) of the punishment?
- 9. Did his behavior (affect/effect) her performance?
- 10. The cold (affected/effected) her breathing.
- 11. The (affect/effect) was instantaneous!
- 12. Your attitude will (affect/effect) your posture.
- 13. The (affect/effect) on her posture was major.
- 14. The (affect/effect) of the colored lights was calming.
- 15. She (affected/effected) his behavior.

Among and Between

Among is a preposition that applies to more than two people or things.

Example: The group divided the marbles **among** themselves.

Between is a preposition that applies to only two people or things.

Example: The marbles were divided **between** Jeremy and Sara.



Directions: Write **between** or **among** in the blanks to complete these sentences correctly. The first one has been done for you.

- between 1. The secret is (between/among) you and Jon.
- _____ 2. (Between/Among) the two of them, whom do you think is nicer?
- _____ 3. I must choose (between/among) the goldfish, guppies, and tetras.
- _____ 4. She threaded her way (between/among) the kids on the playground.
- _____ 5. She broke up a fight (between/among) Josh and Sean.
- _____ 6. "What's come (between/among) you two?" she asked.
- _____ 7. "I'm (between/among) a rock and a hard place," Josh responded.
- _____ 8. "He has to choose (between/among) all his friends," Sean added.
- _____ 9. "Are you (between/among) his closest friends?" she asked Sean.
- _____ 10. "It's (between/among) another boy and me," Sean replied.
- _____ 11. "Can't you settle it (between/among) the group?"
- _____ 12. "No," said Josh. "This is (between/among) Sean and me."
- _____ 13. "I'm not sure he's (between/among) my closest friends."
- _____ 14. Sean, Josh, and Andy began to argue (between/among) themselves.
- _____ 15. I hope Josh won't have to choose (between/among) the two!

All Together and Altogether

All together is a phrase meaning “everyone or everything in the same place.”

Example: We put the eggs **all together** in the bowl.

Altogether is an adverb that means “entirely, completely, or in all.”

Example: The teacher gave **altogether** too much homework.

Directions: Write **altogether** or **all together** in the blanks to complete these sentences correctly. The first one has been done for you.



altogether

1. “You ate (altogether/all together) too much food.”
2. The girls sat (altogether/all together) on the bus.
3. (Altogether/All together) now: one, two, three!
4. I am (altogether/all together) out of ideas.
5. We are (altogether/all together) on this project.
6. “You have on (altogether/all together) too much makeup!”
7. They were (altogether/all together) on the same team.
8. (Altogether/All together), we can help stop pollution (altogether/all together).
9. He was not (altogether/all together) happy with his grades.
10. The kids were (altogether/all together) too loud.
11. (Altogether/All together), the babies cried gustily.
12. She was not (altogether/all together) sure what to do.
13. Let’s sing the song (altogether/all together).
14. He was (altogether/all together) too pushy for her taste.
15. (Altogether/All together), the boys yelled the school cheer.

Amount and Number

Amount indicates quantity, bulk, or mass.

Example: She carried a large **amount** of money in her purse.

Number indicates units.

Example: What **number** of people volunteered to work?

Directions: Write **amount** or **number** in the blanks to complete these sentences correctly. The first one has been done for you.



number

1. She did not (amount/number) him among her closest friends.
2. What (amount/number) of food should we order?

3. The (amount/number) of carrots on her plate was three.

4. His excuses did not (amount/number) to much.

5. Her contribution (amounted/numbered) to half the money raised.

6. The (amount/number) of injured players rose every day.

7. What a huge (amount/number) of cereal!

8. The (amount/number) of calories in the diet was low

9. I can't tell you the (amount/number) of friends she has!

10. The total (amount/number) of money raised was incredible!

11. The (amount/number) of gadgets for sale was amazing.

12. He was startled by the (amount/number) of people present.

13. He would not do it for any (amount/number) of money.

14. She offered a great (amount/number) of reasons for her actions.

15. Can you guess the (amount/number) of beans in the jar?

Irritate and Aggravate

Irritate means “to cause impatience, to provoke, or to annoy.”

Example: His behavior **irritated** his father.

Aggravate means “to make a condition worse.”

Example: Her sunburn was **aggravated** by additional exposure to the sun.

Directions: Write **aggravate** or **irritate** in the blanks to complete these sentences correctly. The first one has been done for you.



- aggravated 1. The weeds (aggravated/irritated) his hay fever.
- _____ 2. Scratching the bite (aggravated/irritated) his condition.
- _____ 3. Her father was (aggravated/irritated) about her low grade in math.
- _____ 4. It (aggravated/irritated) him when she switched TV channels.
- _____ 5. Are you (aggravated/irritated) when the cat screeches?
- _____ 6. Don't (aggravate/irritate) me like that again!
- _____ 7. He was in a state of (aggravation/irritation).
- _____ 8. Picking at the scab (aggravates/irritates) a sore.
- _____ 9. Whistling (aggravates/irritates) the old grump.
- _____ 10. She was (aggravated/irritated) when she learned about it.
- _____ 11. "Please don't (aggravate/irritate) your mother," Dad warned.
- _____ 12. His asthma was (aggravated/irritated) by too much stress.
- _____ 13. Sneezing is sure to (aggravate/irritate) his allergies.
- _____ 14. Did you do that just to (aggravate/irritate) me?
- _____ 15. Her singing always (aggravated/irritated) her brother.

Good and Well

Good is always an adjective. It is used to modify a noun or pronoun.

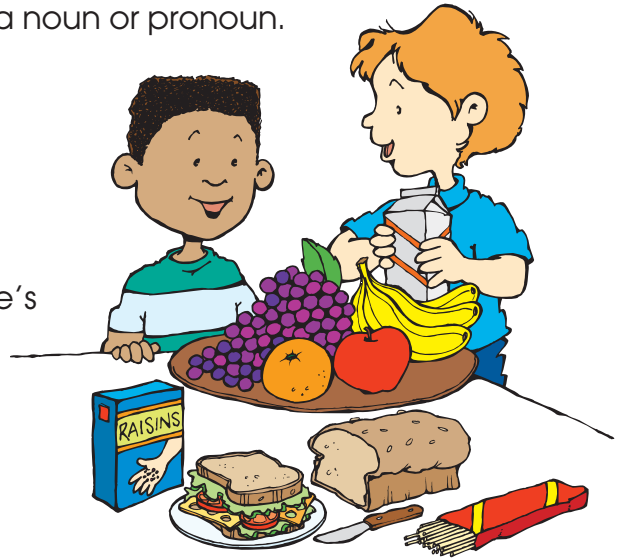
Examples:

- We enjoyed the **good** food.
- We had a **good** time yesterday.
- It was **good** to see her again.

Well is used to modify verbs, to describe someone’s health, or to describe how someone is dressed.

Examples:

- I feel **well**. He looked **well**.
- He was **well**-dressed for the weather.
- She sang **well**.



Directions: Write **good** or **well** in the blanks to complete these sentences correctly.

1. She performed _____.
2. You look _____ in that color.
3. These apples are _____.
4. He rides his bike _____.
5. She made a _____ attempt to win the race.
6. The man reported that all was _____ in the coal mine.
7. Jonas said, "I feel _____, thank you."
8. The team played _____.
9. Mom fixed a _____ dinner.
10. The teacher wrote, " _____ work!" on top of my paper.

Like and As

Like means something is similar or resembles something else, and it describes how things are similar in manner.

Examples:

She could sing **like** an angel.

She looks **like** an angel, too!

As is a conjunction, or joining word, that links two independent clauses in a sentence.

Example: He felt chilly **as** night fell.

Sometimes **as** precedes an independent clause.

Example: **As** I told you, I will not be at the party.

Directions: Write **like** or **as** in the blanks to complete these sentences correctly. The first one has been done for you.

- as 1. He did not behave (like/as) I expected.
- _____ 2. She was (like/as) a sister to me.
- _____ 3. The puppy acted (like/as) a baby!
- _____ 4. (Like/As) I was saying, he will be there at noon.
- _____ 5. The storm was 25 miles away, (like/as) he predicted.
- _____ 6. He acted exactly (like/as) his father.
- _____ 7. The song sounds (like/as) a hit to me!
- _____ 8. Grandpa looked (like/as) a much younger man.
- _____ 9. (Like/As) I listened to the music, I grew sleepy.
- _____ 10. (Like/As) I expected, he showed up late.
- _____ 11. She dances (like/as) a ballerina!
- _____ 12. (Like/As) she danced, the crowd applauded.
- _____ 13. On stage, she looks (like/as) a professional!
- _____ 14. (Like/As) I thought, she has taken lessons for years.



Review

Directions: Write the correct word in the blank.

- _____ 1. The (affect/effect) of the shot was immediate.
- _____ 2. The shot (affected/effect) her allergies.
- _____ 3. You have a positive (affect/effect) on me!
- _____ 4. I was deeply (affected/effect) by the speech.
- _____ 5. The prize was shared (among/between) Malik and Lola.
- _____ 6. She was (among/between) the best students in the class.
- _____ 7. He felt he was (among/between) friends.
- _____ 8. It was hard to choose (among/between) all the gifts.
- _____ 9. Does it (irritate/aggravate) you to see people behave rudely?
- _____ 10. Does coughing (irritate/aggravate) his sore throat?
- _____ 11. He wondered why she was (irritated/aggravated) at him.
- _____ 12. The intensity of his (irritation/aggravation) grew each day.
- _____ 13. She had a (principal/principle) part in the play.
- _____ 14. Beans were the (principal/principle) food in his diet.
- _____ 15. She was a woman of strong (principals/principles).
- _____ 16. Mr. Larson was their favorite (principal/principle).
- _____ 17. The (amount/number) of bananas he ate was incredible.
- _____ 18. I wouldn't part with it for any (amount/number) of money.
- _____ 19. It happened exactly (like/as) I had predicted!
- _____ 20. He sounds almost (like/as) his parents.

Review

Directions: Use these words in sentences of your own.

1. affect _____

2. effect _____

3. among _____

4. between _____

5. irritate _____

6. aggravate _____

7. principal _____

8. principle _____

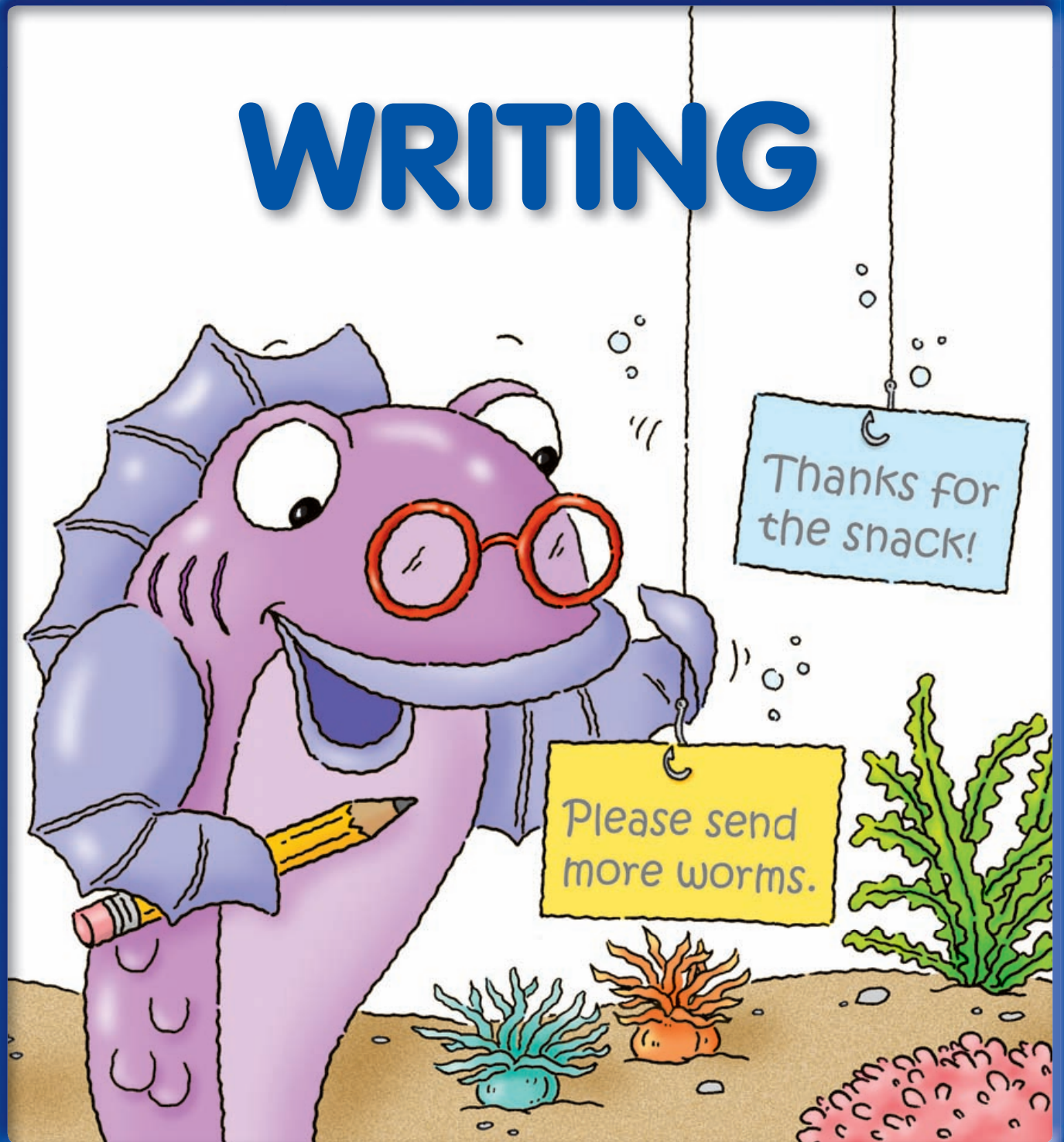
9. good _____

10. well _____

11. like _____

12. as _____

WRITING



Capitalization



Capitalize . . .

- . . . the first word in a sentence.
- . . . the first letter of a person's name.
- . . . proper nouns, like the names of planets, oceans, and mountain ranges.
- . . . titles when used with a person's name, even if abbreviated (Dr., Mr., Lt.).
- . . . days of the week and months of the year.
- . . . cities, states, and countries.

Directions: Write **C** in the blank if the word or phrase is capitalized correctly. Rewrite the word or phrase if it is incorrect.

1. _____ President Abraham Lincoln _____
2. _____ Larry D. Walters _____
3. _____ saturn _____
4. _____ rosa parks _____
5. _____ August _____
6. _____ professional _____
7. _____ jupiter _____
8. _____ Pacific Ocean _____
9. _____ white house _____
10. _____ pet _____
11. _____ Congress _____
12. _____ Houston _____
13. _____ federal government _____
14. _____ dr. Nina Alvarez _____
15. _____ milwaukee, Wisconsin _____
16. _____ Appalachian mountains _____
17. _____ lake michigan _____
18. _____ Notre Dame College _____
19. _____ department of the Interior _____
20. _____ monday and Tuesday _____

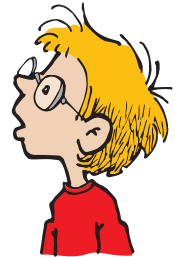
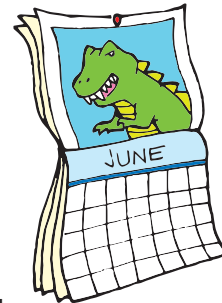
Capitalization

Words that name places, people, months, and landmarks are always capitalized.

Examples:

Sonia Sotomayor
White House
Fifth Avenue

Acme Motor Company
Jefferson Memorial
May, June, July



Directions: Rewrite the sentences using correct capitalization.

1. My family and I visited washington, d.c., in july.

2. We saw the washington monument, the capital building, and the white house.

3. I was very impressed by our visit to the smithsonian institution.

4. Our taxi driver, from the american cab company, showed us around town.

5. We drove down pennsylvania avenue.

6. We were unable to see the president of the united states.

7. However, we did see the first lady.

8. My parents and I decided to visit arlington national cemetery.

Commas

Use **commas** . . .

- . . . after introductory phrases.
- . . . to set off nouns of direct address.
- . . . to set off appositives from the words that go with them.
- . . . to set off words that interrupt the flow of the sentence.
- . . . to separate words or groups of words in a series.

Examples:

Introductory phrase: **Of course**, I'd be happy to attend.

Noun of direct address: **Ms. Williams**, please sit here.

To set off appositives: Lee, **the club president**, sat beside me.

Words interrupting flow: My cousin, **who's 13**, will also be there.

Words in a series: I ate **popcorn, peanuts, sunflower seeds**, and **dried berries**.



Directions: Identify how the commas are used in each sentence.

Write: **I** for introductory phrase

N for noun of direct address

A for appositive

WF for words interrupting flow

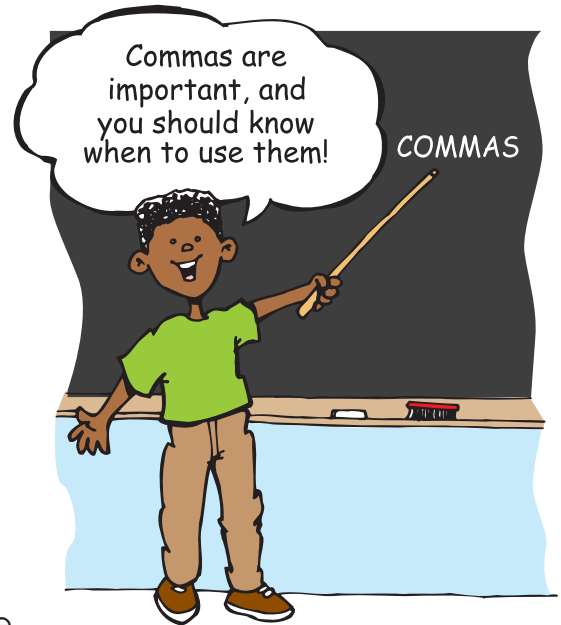
WS for words in a series

- _____ 1. Yes, she is my sister.
- _____ 2. My teacher, Mr. Hopkins, is very fair.
- _____ 3. Her favorite fruits are oranges, plums, and grapes.
- _____ 4. The city mayor, Carla Ellison, is quite young.
- _____ 5. I will buy bread, milk, fruit, and ice cream.
- _____ 6. Her crying, which was quite loud, soon gave me a headache.
- _____ 7. Sanjana, please answer the question.
- _____ 8. So, do you know her?
- _____ 9. Unfortunately, the item is not returnable.
- _____ 10. My sister, my cousin, and my friend will accompany me on vacation.
- _____ 11. My grandparents, Rose and Bill, are both 57 years old.

Commas

Directions: Use commas to punctuate these sentences correctly.

1. I'll visit her however not until I'm ready.
2. She ordered coats gloves and a hat from the catalog.
3. Eun-Jung the new girl looked ill at ease.
4. Certainly I'll show Eun-Jung around school.
5. Yes I'll be glad to help her.
6. I paid nevertheless I was unhappy with the price.
7. I bought stamps envelopes and plenty of postcards.
8. No I told you I was not going.
9. The date November 12 was not convenient.
10. Her earache which kept her up all night stopped at dawn.
11. My nephew who loves bike riding will go with us.
12. He'll bring hiking boots a tent and food.
13. The cat a Himalayan was beautiful.
14. The tennis player a professional in every sense signed autographs.
15. No you can't stay out past 10:00 P.M.



Semicolons

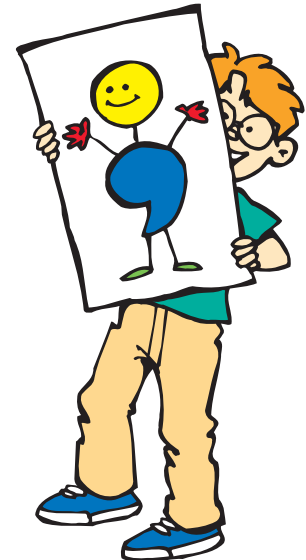
A **semicolon (;)** signals a reader to pause longer than for a comma, but not as long as for a period. Semicolons are used between closely related independent clauses not joined by **and, or, nor, for, yet, or but**.

An **independent clause** contains a complete idea and can stand alone.

Example: Rena was outgoing; her sister was shy.

Directions: Use semicolons to punctuate these sentences correctly. Some sentences require more than one semicolon.

1. Jeff wanted coffee Sophia wanted milk.
2. I thought he was kind she thought he was grouchy.
3. "I came I saw I conquered," wrote Julius Caesar.
4. Harper read books she also read magazines.
5. I wanted a new coat my old one was too small.
6. The airport was fogged-in the planes could not land.
7. Now, he regrets his comments it's too late to retract them.
8. The girls were thrilled their mothers were not.



Directions: Use a semicolon and an independent clause to complete the sentences.

9. She liked him _____
10. I chose a red shirt _____
11. Andrea sang well _____
12. She jumped for joy _____
13. Dancing is good exercise _____
14. The man was kind _____
15. The tire looked flat _____
16. My bike is missing _____

Colons

Use a **colon** . . .

- . . . after the salutation of a business letter.
- . . . between the hour and the minute when showing time.
- . . . between the volume and page number of a periodical.
- . . . between chapters and verses of the Bible.
- . . . before a list of three or more items.
- . . . to introduce a long statement or quotation.

Examples:

Salutation: Dear Madame:

Hour and minute: 8:45 P.M.

Periodical volume and page number: Newsweek 11:32

Bible chapter and verse: John 3:16

Before a list of three or more items: Buy these: fruit, cereal, cheese

To introduce a long statement or quotation: Author Willa Cather said this about experiencing life: "There are only two or three human stories, and they go on repeating themselves as fiercely as if they had never happened before."

Dear Mr. Ahmad:

I would like to place an order for five of your 1-ton scales. Please contact me concerning price and delivery date.

Sincerely,
Ms. McDonnell

Directions: Use colons to punctuate these sentences correctly. Some sentences require more than one colon.

1. At 12 45 the president said this "Where's my lunch?"
2. Don't forget to order these items boots, socks, shoes, and leggings.
3. Ask the librarian for Weekly Reader 3 14.
4. Dear Sir Please send me two copies of your report.
5. Avoid these at all costs bad jokes, bad company, and bad manners.
6. The statement is in either Genesis 1 6 or Exodus 3 2.
7. At 9 15 P.M., she checked in, and at 6 45 A.M., she checked out.
8. I felt all these things at once joy, anger, and sadness.

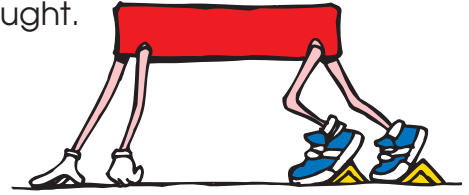
Dashes

Dashes (—) are used to indicate sudden changes of thought.

Examples:

I want milk—no, make that juice—with my lunch.

Wear your old clothes—new ones would get spoiled.



Directions: If the dash is used correctly in the sentence, write **C** in the blank. If the dash is missing or used incorrectly, write **X** in the blank. The first one has been done for you.

- C 1. No one—not even my dad—knows about the surprise.
- _____ 2. Ask—him—no I will to come to the party.
- _____ 3. I'll tell you the answer oh, the phone just rang!
- _____ 4. Everyone thought—even her brother—that she looked pretty.
- _____ 5. Can you please—oh, forget it!
- _____ 6. Just stop it I really mean it!
- _____ 7. Tell her that I'll—never mind—I'll tell her myself!
- _____ 8. Everyone especially Anna is overwhelmed.
- _____ 9. I wish everyone could—forgive me—I'm sorry!
- _____ 10. The kids—all six of them—piled into the backseat.

Directions: Write two sentences of your own that include dashes.

11. _____

12. _____

Quotation Marks

Quotation marks are used to enclose a speaker’s exact words. Use commas to set off a direct quotation from other words in the sentence.

Examples:

Kira smiled and said, “Quotation marks come in handy.”
 “Yes,” Josh said, “I’ll take two.”

Directions: If quotation marks and commas are used correctly, write **C** in the blank. If they are used incorrectly, write **X** in the blank. The first one has been done for you.

- C 1. “I suppose,” Elizabeth remarked, “that you’ll be there on time.”
- 2. “Please let me help! insisted Mark.
- 3. I’ll be ready in 2 minutes!” her father said.
- 4. “Just breathe slowly,” the nurse said, “and calm down.”
- 5. “No one understands me” William whined.
- 6. “Would you like more milk?” Jasmine asked politely.
- 7. “No thanks, her grandpa replied, “I have plenty.”
- 8. “What a beautiful morning!” Zola yelled.
- 9. “Yes, it certainly is” her mother agreed.
- 10. “Whose purse is this?” asked Andrea.
- 11. It’s mine” said Nadia. “Thank you.”
- 12. “Can you play the piano?” asked Beatriz.
- 13. “Music is my hobby.” Jonathan replied.
- 14. Great!” yelled Harry. Let’s play some tunes.”
- 15. “I practice a lot,” said Jayne proudly.



Quotation Marks

Directions: Use quotation marks and commas to punctuate these sentences correctly.

1. No Ms. Elliot replied you may not go.
2. Watch out! yelled the coach.
3. Please bring my coat called Renee.
4. After thinking for a moment, Paul said I don't believe you.
5. Dad said Remember to be home by 9:00 P.M.
6. Finish your projects said the art instructor.
7. Go back instructed Mom and comb your hair.
8. I won't be needing my winter coat anymore replied Mei-ling.
9. He said How did you do that?
10. I stood and said My name is Rosalita.
11. No said Misha I will not attend.
12. Don't forget to put your name on your paper said the teacher.
13. Pay attention, class said our history teacher
14. As I came into the house, Mom called Dinner is almost ready!
15. Jake, come when I call you said Mother.
16. How was your trip to France Mrs. Shaw? asked Grace.



Apostrophes

Use an **apostrophe** (') in a contraction to show that letters have been left out. A **contraction** is a shortened form of two words, usually a pronoun and a verb.

Add an **apostrophe** and **s** to form the **possessive** of singular nouns. **Plural possessives** are formed two ways. If the noun ends in **s**, simply add an apostrophe at the end of the word. If the noun does not end in **s**, add an apostrophe and **s**.

Examples:

Contraction: He **can't** button his sleeves.

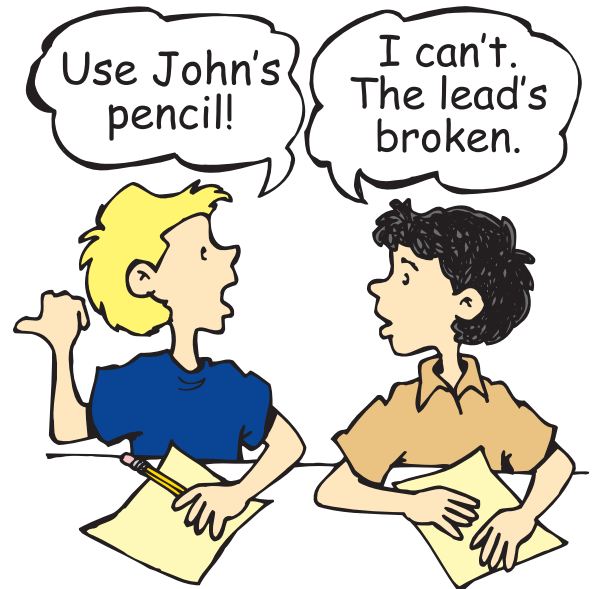
Singular possessive: The **boy's** sleeves are too short.

Plural noun ending in s: The **ladies'** voices were pleasant.

Plural noun not ending in s: The **children's** song was long.

Directions: Use apostrophes to punctuate the sentences correctly. The first one has been done for you.

1. I can't understand that child's game.
2. The farmers wagons were lined up in a row.
3. She didnt like the chairs covers.
4. Our parents beliefs are often our own.
5. Elenas mothers aunt isnt going to visit.
6. Two ladies from work didnt show up.
7. The citizens group wasnt very happy.
8. The colonists demands werent unreasonable.
9. The mothers babies cried at the same time.
10. Our parents generation enjoys music.



Directions: Write two sentences of your own that include apostrophes.

11. _____

12. _____

Contractions

Examples:

he will = **he'll**
 she is = **she's**
 they are = **they're**
 can not = **can't**



Contraction Chart

Pronoun		Verb	=	Contraction
I	+	am	=	I'm
we, you, they	+	are	=	we're, you're, they're
he, she, it	+	is	=	he's, she's, it's
I, we, you, they	+	have	=	I've, we've, you've, they've
I, you, we, she, he, they	+	would	=	I'd, you'd, we'd, she'd, he'd, they'd
I, you, we, she, he, they	+	will	=	I'll, you'll, we'll, she'll, he'll, they'll

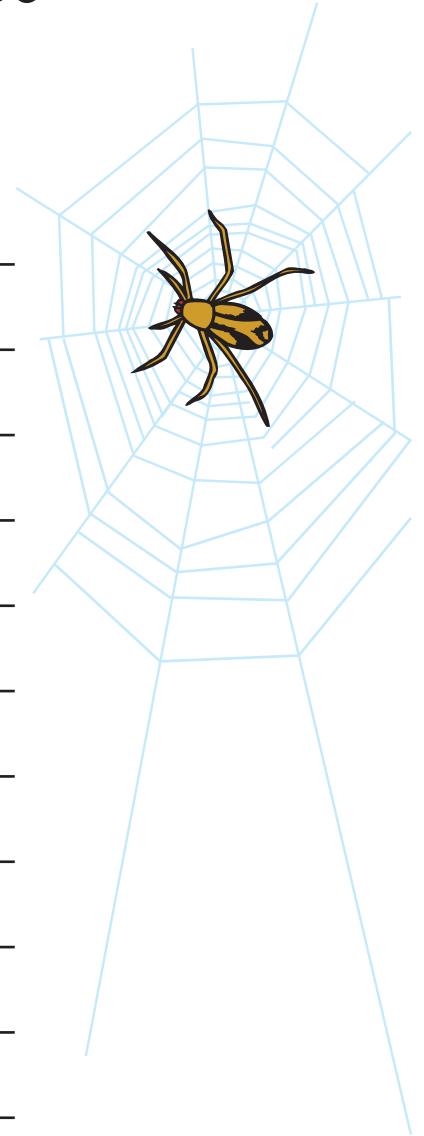
Directions: Write a sentence using a contraction. The first one has been done for you.

- I will I'll see you tomorrow!
- they are _____
- we have _____
- she would _____
- you are _____
- they will _____
- she is _____
- he would _____
- they are _____
- I am _____

Singular Possessives

Directions: Write the singular possessive form of each word. Then, add a noun to show possession. The first one has been done for you.

1. spider spider's web
2. clock _____
3. car _____
4. book _____
5. Mom _____
6. boat _____
7. table _____
8. baby _____
9. woman _____
10. writer _____
11. mouse _____
12. fan _____
13. lamp _____
14. dog _____
15. boy _____
16. house _____



Plural Possessives

Directions: Write the plural possessive form of each word. Then, add a noun to show possession. The first one has been done for you.

1. kid kids' skates
2. man _____
3. aunt _____
4. lion _____
5. giraffe _____
6. necklace _____
7. mouse _____
8. team _____
9. clown _____
10. desk _____
11. woman _____
12. worker _____



Directions: Write three sentences of your own that include plural possessives.

13. _____

14. _____

15. _____

Italics

Use **italics** or **underlining** for titles of books, newspapers, plays, magazines, and movies.

Examples:

Book: Have you read *The Humming Room*?

Movie: Did you see *The Muppet Movie*?

Newspaper: I like to read *The New York Times*.

Magazine: Some children read *Sports Illustrated*.

Play: My school is putting on the play *Peter Pan*.



Since we cannot write in italics, we underline words that should be in italics.

Directions: Underline the words that should be in italics. The first one has been done for you.

1. I read about a play titled Cats in The Cleveland Plain Dealer.
2. You can find The New York Times in most libraries.
3. L. M. Montgomery wrote Anne of Green Gables.
4. Parents and Newsweek are both popular magazines.
5. The original Miracle on 34th Street was filmed long ago.
6. Cricket and Ranger Rick are magazines for children.
7. Bon Appetit means "good appetite" and is a cooking magazine.
8. Harper's, The New Yorker, and Vanity Fair are magazines.
9. David Copperfield was written by Charles Dickens.
10. Harriet Beecher Stowe wrote Uncle Tom's Cabin.
11. My cousin has watched The LEGO Movie four times.
12. Jake and Lily is by one of my favorite authors—Jerry Spinelli.
13. The Louisville Courier-Journal is a Kentucky newspaper.
14. American Girl and Boys' Life are magazines for young readers.
15. My whole family loved Disney's nature film Bears.

Complete Sentences

A **complete sentence** has both a simple subject and a simple predicate. It is a complete thought. Sentences that are not complete are called **fragments**.

Example:

Complete sentence: The wolf howled at the moon.

Sentence fragment: Howled at the moon.

Directions: Write **C** on the line if the sentence is complete. Write **F** if it is a fragment.

1. _____ The machine is running.
2. _____ What will we do today?
3. _____ Knowing what I do.
4. _____ That statement is true.
5. _____ My parents drove to town.
6. _____ Watching television all afternoon.
7. _____ The storm devastated the town.
8. _____ Our friends can go with us.
9. _____ The palm trees bent in the wind.
10. _____ Spraying the fire all night.



Directions: Rewrite the sentence fragments from above to make them complete sentences.

Run-On Sentences

A **run-on sentence** occurs when two or more sentences are joined together without punctuation or a joining word. Run-on sentences should be divided into two or more separate sentences.

Example:

Run-on sentence: My parents, sister, brother, and I went to the park we saw many animals we had fun.

Correct: My parents, sister, brother, and I went to the park. We saw many animals and had fun.

Directions: Rewrite the run-on sentences correctly.

1. The dog energetically chased the ball I kept throwing him the ball for a half hour.

2. The restaurant served scrambled eggs and bacon for breakfast I had some and they were delicious.

3. The lightning struck close to our house it scared my little brother and my grandmother called to see if we were safe.



Finding Spelling Errors

Directions: One word in each sentence below is misspelled. Write the word correctly on the line.



1. Isaiah felt discouraged at the comparison between
him and his older brother. _____
2. I got inpatient as my curiosity grew. _____
3. She confided that she had not finished the asignment. _____
4. They made the selection after a brief conference. _____
5. Obviusly, it's impolite to sneeze on someone. _____
6. This skin cream is practicaly invisible. _____
7. What would prevent you from taking on addtional work? _____
8. I can resite the words to that hymn. _____
9. In a previous columm, the newspaper explained the situation. _____
10. He decieved me so many times that now I distrust him. _____
11. Please have the curtesy to observe the "No Eating" signs. _____
12. The advertisement is so small that it's nearly invisble. _____
13. The best way to communicate is in a face-to-face conservation.

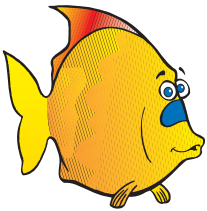
14. In a cost comparson, salmon is more expensive than tuna. _____
15. Poplarity among friends shouldn't depend on your accomplishments.

16. Her campaign was quite an acheivement. _____
17. He condemmed it as a poor imitation. _____

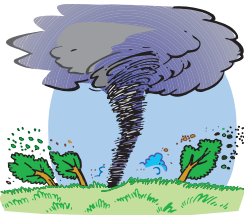
Finding Spelling Errors

Directions: Circle all misspelled words. Write the words correctly on the lines at the end of each paragraph. If you need help, consult a dictionary.

Sabrina wanted to aquire a saltwater acquarum. She was worried about the expence, though, so first she did some reseach. She wanted to learn the exxact care saltwater fish need, not just to exist but to florish. One sorce said she needed to put water in the aquarium and wait 6 weeks before she added the fish. "Good greif!" Sabrina thought. She got a kitten from her nieghbor instead.



One stormy day, Marcel was babysitting his neice. He happened to observe that the sky looked darker than norml. At first he ignorred it, but then he noticed a black cloud exppand and grow in hieght. Then, a tail dropped down from the twisting cloud and siezed a tree! "It's a tornado!" Marcel shouted. "Maybe two tornados! This is an emergensy!" For a breek moment Marcel wished he hadn't shouted, because his niece looked at him with a very frightened expresion. Just then, the cieling began to sag as if it had a heavy wieght on it. "This is an excelent time to visit the basement," he told the little girl as calmy as possible.



Just before Mother's Day, Bethany went to a flourist to buy some flowers for her mother. "Well, what is your reqest?" the clerk asked. "I don't have much money," Bethany told him. "So make up your mind," he said impatiently. "Do you want quality or quantity?" Bethany wondered if he was giving her a quizz. She tried not to sqwirm as he stared down at her. Finally, she said, "I want cortesy," as she headed for the exxit.



Finding Spelling Errors

Directions: Find six errors in each paragraph. Write the words correctly on the lines after each paragraph. Use a dictionary if you need help.

My brother Jim took a math coarse at the high school that was too hard for hymn. My father didn't want him to take it, but Jim said, "Oh, you're just too critcal, Dad. Oviously, you don't think I can do it." Jim ingored Dad. That's norm at our house.

Well, the first day Jim went to the course, he came home with a solem expreion on his face, like a condemed man. "That teacher assined us five pages of homework!" he said. "And two additional problems that we have to reserch!"

"He sounds like an excelent, profesional teacher," my dad said. "We need more teachers of that qwalitu in our schools." Jim squirmed in his seat. Then, he gradually started to smile. "Dad, I need some help with a personl problem," he said. "Five pages of problems, right?" Dad asked. Jim smiled and handed Dad his math book. That's tipical at our house, too.

One day, we had a meddical emergensy at home. My sisters' hand got stuck in a basket with a narrow opening, and she couldn't pull it out. I thought she would have to wear the basket on her hand permanently! First, I tried to stretch and exxpand the baskets opening, but that didn't work.

Then, I smeared a quanity of butter on my sisters hand, and she pulled it right out. I thought she would have the curtesy to thank me, but she just stomped away, still mad. How childsh! Sometimes she seems to think I exxist just to serve her. There are more importanter things in the world than her happiness!

Writing: Four Types of Sentences

There are four main types of sentences: A **statement** tells something. It ends in a period. A **question** asks something. It ends in a question mark. A **command** tells someone to do something. It ends in a period or an exclamation mark. An **exclamation** shows strong feeling or excitement. It ends in an exclamation mark.

Directions: Write what you would say in each situation. Then, tell whether the sentence you wrote was a statement, question, exclamation, or command. The first one has been done for you.

Write what you might say to:



1. A friend who has a new cat:
When did you get the new cat? (question)
 or **Boy, what a cute cat!** (exclamation)

2. A friend who studied all night for the math test:

3. Your teacher, about yesterday's homework:

4. A child you're watching who won't sit still for a second:

5. Your sister, who's been on the phone too long:

Organizing Paragraphs

A **topic sentence** states the main idea of a paragraph and is usually the first sentence. **Support sentences** follow, providing details about the topic. All sentences in a paragraph should relate to the topic sentence. A paragraph ends with a **conclusion sentence**.

Directions: Rearrange each group of sentences into a paragraph, beginning with the topic sentence. Cross out the sentence in each group that is not related to the topic sentence. Write the new paragraph.

Now, chalk drawings are considered art by themselves. The earliest chalk drawings were found on the walls of caves. Chalk is also used in cement, fertilizer, toothpaste, and makeup. Chalk once was used just to make quick sketches. Chalk has been used for drawing for thousands of years. Then, the artist would paint pictures from the sketches.

Dams also keep young salmon from swimming downriver to the ocean. Most salmon live in the ocean but return to fresh water to lay their eggs and breed. Dams prevent salmon from swimming upriver to their spawning grounds. Pacific salmon die after they spawn the first time. One kind of fish pass is a series of pools of water that lead the salmon over the dams. Dams are threatening salmon by interfering with their spawning. To help with this problem, some dams have special "fish passes" to allow salmon to swim over the dam.

Building Paragraphs

Directions: Read each group of questions and the topic sentence. On another sheet of paper, write support sentences that answer each question. Number your support sentences in order. Make any necessary changes so the sentences fit together in one paragraph. Then, write your paragraph after the topic sentence.

Questions: Why did Noah feel sad?
What happened to change how he felt?
How does he feel when he comes to school now?

Noah used to look so solemn when he came to school. _____

Questions: Why did Sienna want to go to another country?
Why couldn't she go?
Does she have any plans to change that?

Sienna always wanted to visit a foreign country. _____

Questions: What was Paulo's "new way to fix spaghetti"?
Did anyone else like it?
Did Paulo like it himself?

Paulo thought of a new way to fix spaghetti. _____



Explaining with Examples

Some paragraphs paint word pictures using adjectives, adverbs, similes, and metaphors. Other paragraphs explain by naming examples.

Example:

Babysitting is not an easy way to earn money. For example, the little girl you're watching may be very cranky and cry until her parents come home. Or maybe the family didn't leave any snacks and you have to starve all night. Even worse, the child could fall and get hurt. Then, you have to decide whether you can take care of her yourself or if you need to call for help. No, babysitting isn't easy.



Directions: Write examples for each topic sentence on another sheet of paper. Number them in order to put them in paragraph form. Make any necessary changes so the sentences fit together in one paragraph. Then, write your paragraphs below after the topic sentences.

1. Sometimes, dreams can be scary. _____

2. You can learn a lot by living in a foreign country. _____

Creating Word Pictures

Painters create pictures with colors. Writers create pictures with words. Adding adjectives and adverbs and using specific nouns, verbs, similes, and metaphors in sentences help create word pictures.

Notice how much more interesting and informative these two rewritten sentences are.

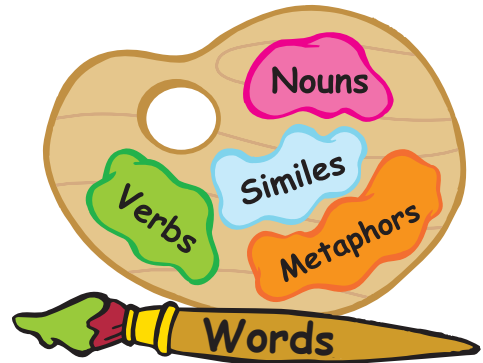
Original sentence

The animal ate its food.

Rewritten sentences

Like a hungry lion, the starving cocker spaniel wolfed down the entire bowl of food in seconds.

The raccoon delicately washed the berries in the stream before nibbling them slowly, one by one.



Directions: Rewrite each sentence twice, creating two different word pictures.

1. The person built something.

2. The weather was bad.

3. The boy went down the street.

4. The children helped.

Describing People

Often, a writer can show how someone feels by describing how that person looks or what he or she is doing, rather than by using emotion words, like **angry** or **happy**. This is another way to create word pictures.

Directions: Read the phrases below. Write words to describe how you think that person feels.

1. like a tornado, yelling, raised fists _____

2. slumped, walking slowly, head down _____

3. trembling, breathing quickly, like a cornered animal _____

Directions: Write one or two sentences for each phrase without using emotion words.

4. a runner who has just won a race for his or her school _____

5. a sixth grader on the first day in a new school _____

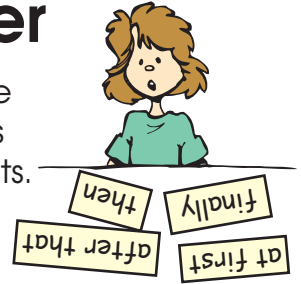
6. a teenager walking down the street and spotting a house on fire _____

7. a scientist who has just discovered a cure for lung cancer _____

8. a kindergarten child being ignored by his or her best friend _____

Describing Events in Order

When we write to explain what happened, we need to describe the events in the same order they occurred. Words and phrases such as **at first**, **then**, **after that**, and **finally** help us relate the order of events.



Directions: Rewrite the paragraph below, putting the topic sentence first and arranging the events in order.

I got dressed, but I didn't really feel like eating breakfast. By the time I got to school, my head felt hot, so I went to the nurse. This day was terrible from the very beginning. Finally, I ended up where I started—back in my own bed. Then, she sent me home again! I just had some toast and left for school. When I first woke up in the morning, my stomach hurt.

Directions: Follow these steps to write a paragraph about what happened the last time you tried to cook something or the last time you tried to fix something that was broken.

1. Write your first draft on another sheet of paper. Start with a topic sentence.
2. Add support sentences to explain what happened. Include phrases to keep things in order: **at first**, **then**, **after that**, **finally**, **in the middle of it**, **at last**.
3. Read your paragraph out loud to see if it reads smoothly. Make sure the events are in the correct order.
4. Make any needed changes, and then write your paragraph below.

Writing Directions

Directions: must be written clearly. They are easiest to follow when they are in numbered steps. Each step should begin with a verb.

How to Peel a Banana:

1. Hold the banana by the stem end.
2. Find a loose edge of peel at the top.
3. Pull the peel down.
4. Peel the other sections of the banana in the same way.



Directions: Rewrite these directions, number the steps in order, and begin with verbs.

How to Feed a Dog

Finally, call the dog to come and eat. Then, you carry the filled dish to the place where the dog eats. The can or bag should be opened by you. First, clean the dog's food dish with soap and water. Then, get the dog food out of the cupboard. Put the correct amount of food in the dish.

Directions: Follow these steps to write your own directions.

1. On another sheet of paper, draw three symbols, such as a square with a star in one corner and a dot in the center, or a triangle inside a circle with a spiral in the middle. Don't show your drawing to anyone.
2. On a second sheet of paper, write instructions to make the same drawing. Your directions need to be clear, in order, and numbered. Each step needs to begin with a verb.
3. Trade directions (but not pictures) with a partner. See if you can follow each other's directions to make the drawings.
4. Show your partner the drawing you made in step one. Does it look like the one he or she made following your directions? Could you follow your partner's directions? Share what was clear—or not so clear—about each other's instructions.

Review

Directions: Write paragraphs to match the descriptions given. Begin with a topic sentence, and add support sentences that tell the events in order. Write the first draft of your paragraph on another sheet of paper. Read it to yourself, make any necessary changes, and then write it below.

1. Write a short paragraph to explain something that might happen on your way to school.

2. Write a paragraph that tells what you usually do during the first hour after you get up on a school day.

Directions: Write directions explaining how to brush your teeth. Include at least four steps. Make them as clear as possible. Begin each step with a verb. Write a rough draft on another sheet of paper first.

1. _____
2. _____
3. _____
4. _____

Writing: Stronger Sentences

Sometimes the noun form of a word is not the best way to express an idea. Compare these two sentences:

They made preparations for the party.
They prepared for the party.

The second sentence, using **prepared** as a verb, is shorter and stronger.

Directions: Write one word to replace a whole phrase. Cross out the words you don't need. The first one has been done for you.

1. She ~~made a suggestion~~ ^{suggested} that we go on Monday.
2. They arranged decorations around the room.
3. Let's make a combination of the two ideas.
4. I have great appreciation for what you did.
5. The buses are acting as transportation for the classes.
6. The group made an exploration of the Arctic Circle.
7. Please make a selection of one quickly.
8. The lake is making a reflection of the trees.
9. The family had a celebration of the holiday.
10. Would you please provide a solution for this problem?
11. Rashid made an imitation of his cat.
12. Please give a definition of that word.
13. I made an examination of the broken bike.
14. Dexter made an invitation for us to join him.



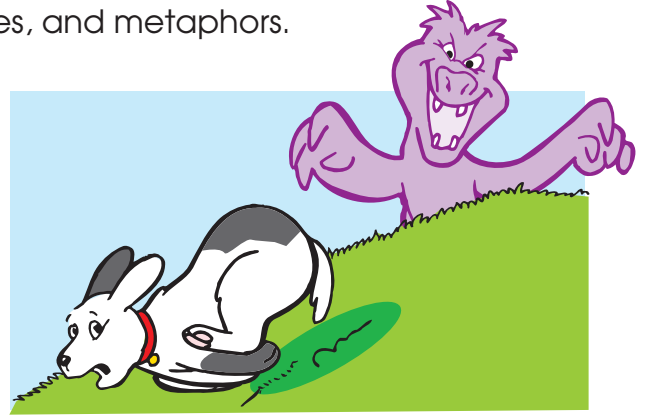
Writing: Descriptive Sentences

Descriptive sentences make writing more interesting to the reader. This is done by using adjectives, adverbs, prepositional phrases, similes, and metaphors.

Example:

The dog ran down the hill.

The black and white beagle bounded down the steep embankment as though being chased by an invisible dragon.



Directions: Rewrite these sentences so they are more descriptive.

1. Parker likes collecting stamps.

2. Martina drove into town.

3. I enjoy working on the computer.

4. Riverside won the game.

5. Dinner was great.

6. My mom collects antiques.

7. The teacher likes my essay.

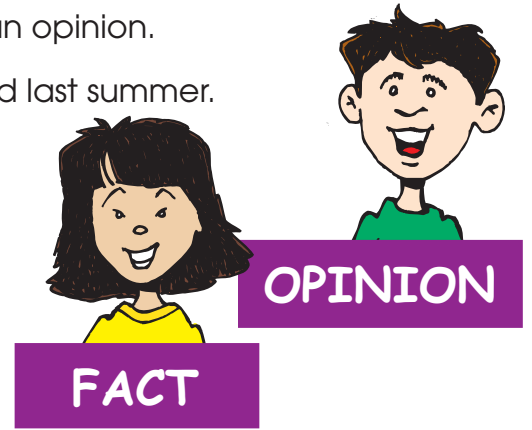
8. My brother received a scholarship for college.

Writing: Different Points of View

A **fact** is a statement that can be proved. An **opinion** is what someone thinks or believes.

Directions: Write **F** if the statement is a fact or **O** if it is an opinion.

1. ____ The amusement park near our town just opened last summer.
2. ____ It's the best one in our state.
3. ____ It has a roller coaster that's 300 feet high.
4. ____ You're a chicken if you don't go on it.



Directions: Think about the last movie or TV show you saw. Write one fact and one opinion about it.

Fact: _____

Opinion: _____

In a story, a **point of view** is how one character feels about an event and reacts to it. Different points of view show how characters feel about the same situation.

What if you were at the mall with a friend and saw a shirt you really wanted on sale? You didn't bring enough money, so you borrowed ten dollars from your friend to buy the shirt. Then, you lost the money in the store!

Directions: Write a sentence describing what happened from the point of view of each person named below. Explain how each person felt.

Yourself _____

Your friend _____

The store clerk who watched you look for the money _____

The person who found the money _____

Reading Skills: It's Your Opinion

Your opinion is how you feel or think about something. Although other people may have the same opinion, their reasons will not be exactly the same because of their individuality.

When writing an opinion paragraph, it is important to first state your opinion. Then, in at least three sentences, support your opinion. Finally, end your paragraph by restating your opinion in different words.

Example:

I believe dogs are excellent pets. For thousands of years, dogs have guarded and protected their owners. Dogs are faithful and have been known to save the lives of those they love. Dogs offer unconditional love, as well as company for the quiet times in our lives. For these reasons, I feel that dogs make wonderful pets.

Directions: Write an opinion paragraph on whether you would or would not like to have lived in Colonial America. Be sure to support your opinion with at least three reasons.

Writing Checklist

Reread your paragraph carefully.

- | | |
|---|--|
| <input type="checkbox"/> My paragraph makes sense. | <input type="checkbox"/> I have a good opening and ending. |
| <input type="checkbox"/> There are no jumps in ideas. | <input type="checkbox"/> I used correct spelling. |
| <input type="checkbox"/> I used correct punctuation. | <input type="checkbox"/> My paragraph is well-organized. |
| <input type="checkbox"/> My paragraph is interesting. | |

Persuasive Writing

To **persuade** means to convince someone that your opinion is correct. You need to offer reasons, facts, and examples to support your opinion.

Directions: Write two reasons or facts and two examples to persuade someone.



1. Riding a bicycle "no-handed" on a busy street is a bad idea.

Reasons/Facts: _____

Examples: _____

2. Taking medicine prescribed by a doctor for someone else is dangerous.

Reasons/Facts: _____

Examples: _____

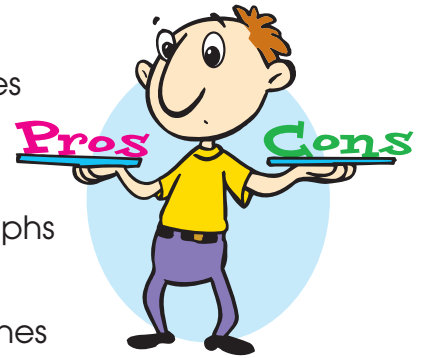
3. Learning to read well will help you in every other subject in school.

Reasons/Facts: _____

Examples: _____

Persuasive Writing

When trying to persuade someone, it helps to look at both sides of the issue. If you can understand both sides, you will have a better idea how to convince someone of your point of view.



Directions: Follow these steps to write two persuasive paragraphs about which form of transportation is better: airplanes or cars.

1. On another sheet of paper, list three or four reasons why planes are better and three or four reasons why cars are better.
2. Put each list of reasons in order. Often, persuasive writing is strongest when the best reason is placed last. Readers tend to remember the last reason best.
3. Write topic sentences for each paragraph.
4. Read each paragraph, and make any necessary changes so one sentence leads smoothly to the next.
5. Write your paragraphs below.

Airplanes Are Better Transportation Than Cars _____

Cars Are Better Transportation Than Planes _____

6. Write two more paragraphs on another sheet of paper. Select any topic. Write from both points of view.

Persuasive Writing



Writing is usually more persuasive if written from the reader's point of view.

If you made muffins to sell at a school fair, which of these sentences would you write on your sign?

- I spent a lot of time making these muffins.
- These muffins taste delicious!

If you were writing to ask your school board to start a gymnastics program, which sentence would be more persuasive?

- I really am interested in gymnastics.
- Gymnastics would be good for our school because both boys and girls can participate, and it's a year-round sport we can do in any weather.

In both situations, the second sentence is more persuasive because it is written from the reader's point of view. People care how the muffins taste, not how long it took you to make them. The school board wants to provide activities for all the students, not just you.

Directions: Write **R** if the statement is written from the reader's point of view or **W** if it's written from the writer's point of view.

- _____ 1. If you come swimming with me, you'll be able to cool off.
- _____ 2. Come swimming with me. I don't want to go alone.
- _____ 3. Please write me a letter. I really like to get mail.
- _____ 4. Please write me a letter. I want to hear from you.

Directions: Follow these steps to write an invitation on another sheet of paper to persuade people to move to your town or city.

1. Think about reasons someone would want to live in your town. Make a list of all the good things there, like the schools, parks, annual parades, historic buildings, businesses where parents could work, scout groups, Little League, and so on. You might also describe your town's population, transportation, restaurants, celebrations, or even holiday decorations.
2. Now, select three or four items from your list. Write a sentence (or two) about each one from the reader's point of view. For example, instead of writing "Our Little League team won the championship again last year," you could tell the reader, "You could help our Little League team win the championship again this year."
3. Write a topic sentence to begin your invitation, and put your support sentences in order after it.
4. Read your invitation out loud to another person. Make any needed changes, and copy the invitation onto a clean sheet of paper.

Review

Directions: Read the questions. Then, write one or two sentences about the situation from both points of view.

What if your neighbor had a dog that barked all night and kept you awake?

Your point of view: _____

Your neighbor's point of view: _____

What if the school board wanted to begin holding classes every Saturday during the school year?

For Saturday classes: _____

Against Saturday classes: _____

Directions: Rewrite these sentence so they make a stronger statement:

Jacob made a decision to take the test today. _____

Kisha had a dream about the test results. _____

Directions: Write two facts and two opinions about your math class.

Facts: _____

Opinions: _____

Review

Directions: Write a persuasive essay convincing your town that a park is needed for older kids with equipment such as basketball courts, soccer and football fields, and a track. Be sure to end with a convincing statement.

Directions: Write a descriptive paragraph about these topics.

My Pet _____

My Mom _____

Describing Characters

When you write a story, your characters must seem like real people. You need to let your reader know not only how they look but how they act, and how they feel. You could just tell the reader that a character is friendly, scared, or angry, but your story will be more interesting if you show these feelings by the characters' actions.

Example:

Character: A frightened child

Adjectives and adverbs: red-haired, freckled, scared, lost, worried

Simile: as frightened as a mouse cornered by a cat

Action: He peeked between his fingers, but his mother was nowhere in sight.

Directions: Write adjectives, adverbs, similes, and/or metaphors that tell how each character feels. Then, write a sentence that shows how the character feels.



1. an angry woman

Adjectives and adverbs: _____

Metaphor or simile: _____

Sentence: _____

2. a disappointed man

Adjectives and adverbs: _____

Metaphor or simile: _____

Sentence: _____

3. a hungry child

Adjectives and adverbs: _____

Metaphor or simile: _____

Sentence: _____

4. a tired boy

Adjectives and adverbs: _____

Metaphor or simile: _____

Sentence: _____

Setting the Scene

Where and when a story takes place is called the **setting**. As with characters, you can tell about a setting—or you can show what the setting is like. Compare these two pairs of sentences:

The sun was shining.
The glaring sun made my eyes burn.

The bus was crowded.
Paige shouldered her way down the aisle,
searching for an empty seat on the crowded bus.

If you give your readers a clear picture of your story’s setting, they’ll feel as if they’re standing beside your characters. Include words that describe the sights, sounds, smells, feel, and even taste, if appropriate.

Directions: Write at least two sentences for each setting, clearly describing it for your readers.

1. an empty kitchen early in the morning _____

2. a locker room after a basketball game _____

3. a dark living room during a scary TV movie _____

4. a classroom on the first day of school _____

5. a quiet place in the woods _____

Creating a Plot

When you're writing a story, the **plot** is the problem your characters face and how they solve it. It's helpful to write a plot outline or summary before beginning a story.

In the beginning of a story, introduce the characters, setting, and problem.

Example: Oliver and Stella have never met their mother, who lives in another state. They decide they would like very much to meet her. They live with their grandmother and father. On the way home from school, they talk about how they can find and contact her.

In the middle, characters try different ways to solve the problem, usually failing at first.

Example: Oliver and Stella hurry home to ask their grandmother if she can help them find their mother. Their grandmother seems nervous and tells Oliver and Stella to discuss the matter with their father when he gets home from work. When Oliver and Stella's father comes home, they tell him about their plan. Their father is very quiet for several minutes. He says he needs some time to think about it and asks if he can let them know tomorrow. Oliver and Stella can hardly sleep that night. Getting through school the next day is tough as well. After school, Oliver and Stella wait by the window for their father's car to pull in the driveway.

In the end, the characters find a way to solve the problem. Not all stories have happy endings. Sometimes, the characters decide they can live with the situation the way it is.

Example: When their father pulls into the driveway, Oliver and Stella rush out to meet him. Their father hands them airplane tickets. Oliver and Stella hug each other. Then, they hug their father.

Directions: How do you think this story ends? Write a summary for the ending of this story.

Creating a Plot

As you plan your stories, consider these questions.

- Who are the main characters?
- What do they look like?
- Where do they live?
- When do they live?
- What is the problem?
- Why is there a problem?
- How do they solve it?
- How do they feel at first?
- How do they feel at the end?
- Did I leave any loose ends?
- Do I want a surprise ending?



Directions: Write the plot for a story of your own on another sheet of paper. Follow these steps.

1. Select two characters and a setting. Write some descriptive words and phrases you could use.
2. What kinds of problems might the characters face? Jot down your ideas.
3. Select a problem, and think of ways the characters might try to solve it. Number the alternatives in order, with the solution you will use last.
4. Add more details. Then, write a plot outline or summary.
5. Finally, write out the whole story. You can change your plot outline if you think of a better idea. Make your story exciting!
6. Read your story out loud to yourself. Is what happened clear? Make any needed changes, and rewrite your story neatly or type it on the computer and print it out. Be certain your story has a title.
7. Add illustrations or computer graphics to your story if you wish.

Writing Dialogue

Stories are more interesting when characters talk to each other. Conversations help show the characters' feelings and personalities. Compare these two scenes from a story:

Chad asked Angela to help him with his homework. She said she wouldn't, because she was mad at him for ignoring her when he was spending time with friends from his soccer team.

"Angela, would you be a real friend and help me with this math problem?" Chad asked with a big smile.

"I'm awfully busy, Chad," Angela answered without looking up. "Maybe you should ask your soccer friends, since you enjoy talking to them so much."

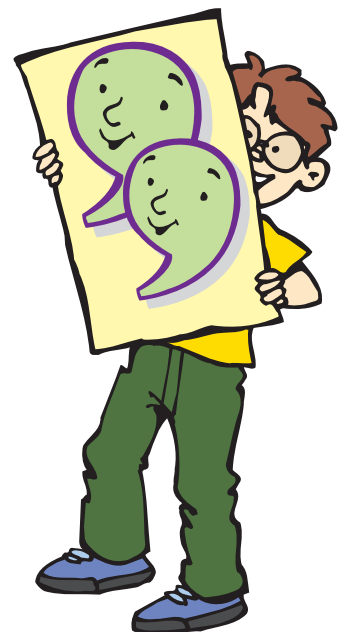
In the second version, we know Angela is angry, even though the writer didn't use that word. You can show how your characters feel by what they say and how they say it.

When you write dialogue, try to make the words sound natural, the way people really talk. Remember to start a new paragraph every time a different person speaks. Put quotation marks around the words the person says. Commas and periods at the ends of sentences go inside the quotation marks.

Directions: Write dialogue for what each character might say to a classmate in this situation. Show how the character feels without using the word for the feeling. Also, write the reply from the classmate. Use another sheet of paper for your writing.

The teacher explains a new assignment the class will do in groups. The bell rings, and everyone heads for the lunchroom.

1. A discouraged girl who isn't sure she can do the project
2. A self-confident boy who got an A on the last project
3. An impatient girl who has an idea and wants to get started
4. An angry boy who dislikes group projects
5. A bored girl who doesn't care about the project
6. A boy who is worried about a different problem in his life
7. A student who is afraid no one will want him or her for a partner on the project





Writing Dialogue

When it was Megan’s turn to present her book report to the class, she dropped all her notecards! Her face turned red, and she wished she was invisible, but all she could do was stand there and say what she could remember without her cards. It was awful!

Directions: Rewrite each paragraph below. Explain the same scenes and feelings using dialogue.

After class, Megan told her friend Ananya she had never been so embarrassed in her life. She saw everyone staring at her, and the teacher looked impatient, but there wasn’t anything she could do. Ananya assured Megan that no one disliked her because of what had happened.

When Megan got home, she told her mother about her book report. By then, she felt like crying. Her mother said not to get discouraged. In a couple of days, she would be able to laugh about dropping the cards.

When Megan’s older brother Jed came home, he asked her what was wrong. She briefly told him and said she never was going back to school. He started laughing. Megan got mad because she thought he was laughing at her. Then, Jed explained that he had done almost the same thing when he was in sixth grade. He was really embarrassed, too, but not for long.



Writing: Paraphrasing

Paraphrasing means “to restate something in your own words.”

Directions: Write the following sentences in your own words. The first one has been done for you.

1. He sat alone and watched movies throughout the cold, rainy night.

All through the damp, chilly evening, the boy watched television by himself.

2. Many animals such as elephants, zebras, and tigers live in the grasslands.

3. In art class, Sarah worked diligently on a clay pitcher, molding and shaping it on the pottery wheel.

4. The scientists frantically searched for a cure for the new disease that threatened the entire world population.

5. Quietly, the detective crept around the abandoned building, hoping to find the missing man.

6. The windmill turned lazily in the afternoon breeze.

Writing: Paraphrasing

Directions: Using synonyms and different word order, paraphrase the following paragraphs. The first one has been done for you.

Some of Earth’s resources, such as oil and coal, can be used only once. We should always, therefore, be careful how we use them. Some materials that are made from natural resources, including metal, glass, and paper, can be reused. This is called recycling.



Many natural resources, including coal and oil, can be used only one time. For this reason, it is necessary to use them wisely. There are other materials made from resources of the Earth that can be recycled, or used again.

Materials that can be recycled include metal, glass, and paper.

Recycling helps to conserve the limited resources of our land. For example, there are only small amounts of gold and silver ores in the earth. If we can recycle these metals, less of the ores need to be mined. While there is much more aluminum ore in the earth, recycling is still important. It takes less fuel energy to recycle aluminum than it does to make the metal from ore. Therefore, recycling aluminum helps to conserve fuel.

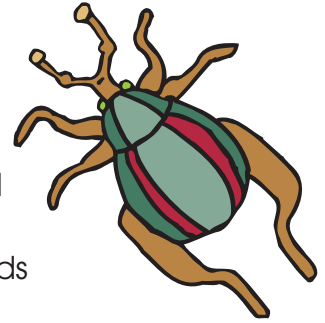
It is impossible to get minerals and fossil fuels from the earth without causing damage to its surface. In the past, people did not think much about making these kinds of changes to our planet. They did not think about how these actions might affect the future. As a result, much of the land around mines was left useless and ugly. This is not necessary, because such land can be restored to its former beauty.

Writing: Summarizing

A **summary** is a brief retelling of the main ideas of a reading selection. To summarize, write the author's most important points in your own words.

Directions: Write a two-sentence summary for each paragraph.

The boll weevil is a small beetle that is native to Mexico. It feeds inside the seed pods, or bolls, of cotton plants. The boll weevil crossed into Texas in the late 1800s. It has since spread into most of the cotton-growing areas of the United States. The boll weevil causes hundreds of millions of dollars worth of damage to cotton crops each year.



Summary: _____

Each spring, female boll weevils open the buds of young cotton plants with their snouts. They lay eggs inside the buds, and the eggs soon hatch into wormlike grubs. The grubs feed inside the buds, causing the buds to fall from the plant. They eat their way from one bud to another. Several generations of boll weevils may be produced in a single season.



Summary: _____

The coming of the boll weevil to the United States caused tremendous damage to cotton crops. Yet, there were some good results, too. Farmers were forced to plant other crops. In areas where a variety of crops were raised, the land is in better condition than it would have been if only cotton had been grown.

Summary: _____

Writing: Summarizing a Personal Narrative

Directions: Read the following narrative, and then follow the directions below and on page 333.

My Greatest Fear



I am scared of spiders. I realize this is not a logical fear, but I cannot help myself. I have been frightened by spiders since I was very young. For the following three reasons, spiders will never be pets of mine.

The first reason that I am scared of spiders is their appearance. I do not like their eight wispy, creepy legs. Spiders are never easily seen, but rather dark and unattractive. They are often hairy, and the mere thought of multiple eyeballs gives me shivers.

Spiders are not well-behaved. They are sly and always ready to sneak up on innocent victims. Spiders have habits of scurrying across floors, dropping from ceilings, and dangling from cobwebs. One never knows what to expect from a spider.

Finally, I am scared of spiders due to a "spider experience" as a child. Having just climbed into bed, I noticed a particularly nasty-looking spider on the ceiling over my bed. My father came into dispose of it, and it fell into bed with me. The thought of it crawling over me drove me from the bed shrieking. After that, I checked the ceiling nightly before getting into bed.

Many people love spiders. They are good for the environment and are certainly needed on our planet. However, because of my fear, irrational though it may be, I'd rather just avoid contact with arachnids.

Directions: Write a four-sentence summary of the narrative.

Writing: Summarizing a Personal Narrative

Write the main idea of the second paragraph.

Write the main idea of the third paragraph.

Write the main idea of the fourth paragraph.

Everyone has a fear of something. On another sheet of paper, write a five-paragraph personal narrative about a fear of your own. Use the following guide to help you organize your narrative.

Paragraph 1. State your fear.

Provide background information about fear.

Paragraph 2. State your first reason for fear.

Support this statement with at least three sentences.

Paragraph 3. State your second reason for fear.

Support this statement with at least three sentences.

Paragraph 4. State your third reason for fear.

Support this statement with at least three sentences.

Paragraph 5. Provide a summary of your narrative.

Restate your fear in different words from the opening sentence.



Writing: Outlining

An **outline** is a skeletal description of the main ideas and important details of a reading selection. Making an outline is a good study aid. It is particularly useful when you must write a paper.

Directions: Read the paragraphs, and then complete the outline below.

Weather has a lot to do with where animals live. Cold-blooded animals have body temperatures that change with the temperature of the environment. Cold-blooded animals include snakes, frogs, and lizards. They cannot live anywhere the temperatures stay below freezing for long periods of time. The body temperatures of warm-blooded animals do not depend on the environment.



Any animal with hair or fur—including dogs, elephants, and whales—is warm-blooded. Warm-blooded animals can live anywhere in the world where there is enough food to sustain them.

Some warm-blooded animals live where snow covers the ground all winter. These animals have different ways to survive the cold weather. Certain animals store up food to last throughout the snowy season. For example, the tree squirrel may gather nuts to hide in its home. Other animals hibernate in the winter. The ground squirrel, for example, stays in its burrow all winter long, living off the fat reserves in its body.

Title: _____

Main Topic: I. _____

Subtopic: A. Cold-blooded animals' temperatures change with environment.

Detail: 1. _____

Subtopic: B. _____

Detail: 1. They can live anywhere there is food.

Main Topic: II. _____

Subtopic: A. Animals have different ways to survive the cold.

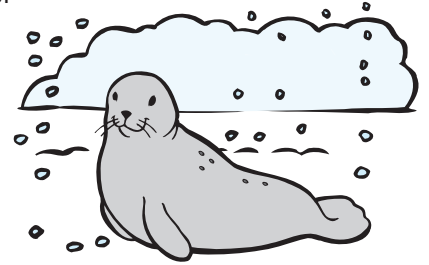
Details: 1. _____

2. _____

Review

Directions: Read the paragraph, and then follow the directions.

According to one estimate, 75 percent of all fresh water on Earth is in the form of ice. The polar regions of Earth are almost completely covered by ice. In some places, the ice is more than 8,000 feet thick. If all of this ice were spread out evenly, Earth would be covered with a 100-foot-thick layer of ice. Although ice is not an important source of fresh water today, it could be in the future. Some people have proposed towing large, floating masses of ice to cities to help keep up with the demand for fresh water.



1. Complete the outline of the paragraph.

Title: _____

Main Topic: I. 75 percent of fresh water on Earth is ice.

Subtopics: A. _____

B. _____

2. Check the most appropriate generalization:

Ice is the most plentiful source of fresh water.

Ice is important to the future.

3. Paraphrase the first sentence by restating it in your own words.

4. Is the author's purpose to inform, entertain, or persuade?

5. Where would you look to find information on the polar ice caps?

Review

Directions: Read the paragraph, and then follow the directions.

Constellations are groups of stars that have been given names. They often represent an animal, person, or object. One of the easiest constellations to identify is the Big Dipper, which is shaped like a spoon. Once the Big Dipper is located, it is easy to see Cassiopeia (a W), the Little Dipper (an upside-down spoon), and the North Star. The North Star's scientific name is Polaris, and it is the last star in the handle of the Little Dipper. Other constellations include Orion the hunter, Gemini the twins, Canis Major the dog, and Pegasus the winged horse. Many ancient cultures, including the Greeks and Native Americans, used the position of the stars to guide them. They also planned daily life activities, such as planting, hunting, and harvesting, by the path the constellations made through the sky. For thousands of years, humans have gazed at the sky, fascinated by the millions of stars and imagining pictures in the night.



1. Complete the outline of the paragraph.

Title: _____

Main Topic: I. _____

Subtopics: A. _____

B. _____

2. In three sentences, summarize the paragraph.

3. What is the author's purpose? _____

4. Under which topics would you look to find more information on constellations?

Using the Right Resources

Directions: Decide where you would look to find information on the following topics. All of these resources are available either in print or online form.

- **almanac** — contains tables and charts of statistics and information
- **atlas** — collection of maps
- **dictionary** — contains alphabetical listing of words with their meanings, pronunciations, and origins
- **encyclopedia** — a book, website, or CD-ROM with general information on many subjects
- **library catalog** — library resource showing available books by topic, title or author
- **Readers' Guide to Periodical Literature** — an index of articles in magazines and newspapers
- **thesaurus** — contains synonyms and antonyms of words

1. What is the capital of the Netherlands? _____
2. What form of government is practiced there? _____
3. What languages are spoken there? _____
4. What is the meaning of the word **indigenous**? _____
5. Where would you find information on conservation? _____

6. What is a synonym for **catastrophe**? _____
7. Where would you find a description of the play *Cats*? _____

8. Where would you find statistics on the annual rainfall in the Sahara?

9. What is the origin of the word **plentiful**? _____
10. What are antonyms for the word **plentiful**? _____
11. Where would you find statistics for the number of automobiles manufactured in the United States last year? _____

Making Inferences: Reference Sources

Directions: In the box are four different kinds of reference sources. On the line next to each question, write which source you would use to find the information. Some information can be found in more than one reference.

encyclopedia	almanac	dictionary	thesaurus
--------------	---------	------------	-----------

1. A list of words that mean the same as **strong** _____
2. How much rain fell in Iowa in the year 1992 _____
3. What part of speech the word **porch** is _____
4. How many different types of hummingbirds there are _____
5. Weather patterns in Texas for the last 2 years _____
6. A list of words that mean the opposite of **cold** _____
7. Who invented the telescope _____
8. How to pronounce the word **barometer** _____
9. How many syllables the word **elephant** has _____
10. What the difference is between African and Asian elephants _____
11. The population changes in New York between 1935 and 2015 _____
12. How fast a cheetah can run _____

Conducting Research



Directions: Read the following questions. Use the Internet or library resources to answer them.

1. Choose two figures from history. Research them on www.biography.com. Write two facts you found about each person.

2. Use a resource book or online search to find out what Mohs scale of hardness is and what is at the top and bottom of the scale.

3. What were the last three winners of the Caldecott Medal for best illustrations in children's books?

4. Name three types of butterflies. List the source of your information.

5. Visit the site www.libraryspot.com. Write three questions that a classmate could answer by using this site.

6. Use a library catalog to search for books about rain forests. List the titles and call numbers of three books you find.

Review

Directions: Read the following questions. Use the Internet or library resources to answer them.

1. Use a print or online children's almanac to find two facts about animals or the environment.

2. How tall is the Eiffel Tower? _____

3. List two sources you could use to find current information about the International Space Station.

4. Use a print or online atlas to find out what five South American countries share a border with Bolivia.

Directions: Check the resource you would use to find the following information.

1. How to play checkers almanac dictionary an Internet search

2. An example sentence using the word **breathe**

encyclopedia thesaurus dictionary

3. How many inches of snow fell in the Colorado Rockies last year

an atlas an Internet search thesaurus

4. How many syllables are in the word **justification**

almanac thesaurus dictionary

5. A synonym for **discontent**

encyclopedia almanac thesaurus

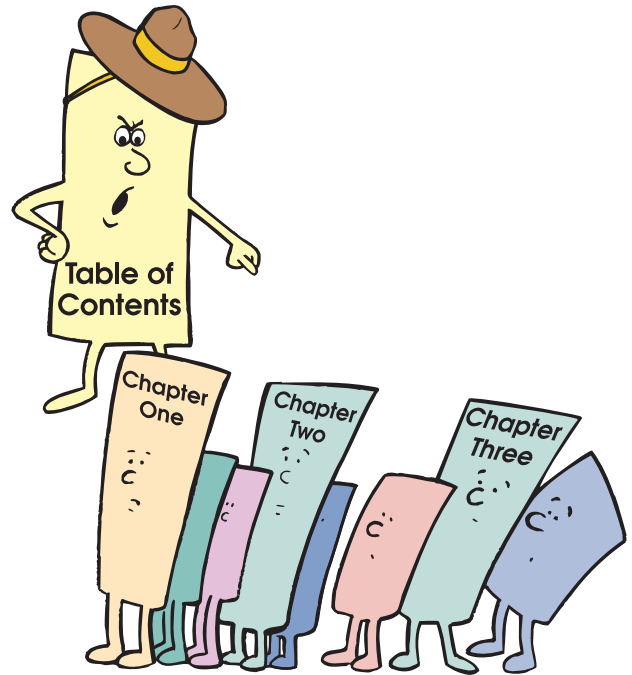


Table of Contents

The **table of contents**, located in the front of books or magazines, tells a lot about what is inside.

A table of contents in books lists the headings and page numbers for each chapter. **Chapters** are the parts into which books are divided. Also listed are chapter numbers and the sections and subsections, if any. Look at the sample table of contents below:

Contents	
Chapter 1: Planting a garden	2
Location	4
Fences	5
Chapter 2: Seeds	8
Vegetables	
Potatoes	9
Beans	10
Tomatoes	11
Fruits	
Melons	13
Pumpkins	14
Chapter 3: Caring for a garden	15
Weeding	16
Fertilizing	19



Directions: Using the table of contents above, answer the following questions.

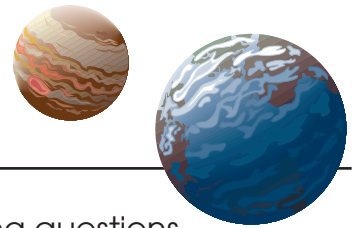
1. How many chapters are in this book? _____
2. What chapter contains information about things to plant? _____
3. On what page does information about fences begin? _____
4. What chapter tells you what you can use to help your garden grow better? _____
5. What page tells you how to use fertilizer? _____
6. What page tells you how far apart to plant pumpkin seeds? _____
7. What is on page 11? _____
8. What is on page 4? _____

Table of Contents

The table of contents below is divided into units and sections. **Units** are parts into which a book is divided. **Sections** are segments of each unit.

Table of Contents

UNIT ONE: The Sun	1	UNIT THREE: Constellations.	65
A Bright Light	5	Big Dipper	67
A Hot Star	10	Little Dipper	69
UNIT TWO: The Planets.	12	Polaris	71
Mercury	15	Others	74
Venus	21	UNIT FOUR: Space Wonders.	98
Earth	27	Comets	101
Mars	32	Meteors and Meteorites	105
Jupiter	39		
Saturn	49		
Uranus	54		
Neptune	58		
Dwarf Planets	61		



Directions: Using the table of contents above, answer the following questions.

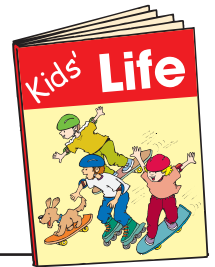
- How many units are in this book? _____
- Where would you find information about life on Mars? _____
- Where would you find information about the sun's heat and brightness? _____
- What is on page 27? _____
- Orion is a large group of stars, or constellation. Where would you find information about it? _____
- What is on page 101? _____
- Where would you find information about the moons of Jupiter? _____
- How many pages in this book are about Earth? _____
- How many pages in this book are about Polaris? _____
- Where would you read about the Big Dipper? _____

Table of Contents

In some magazines, the table of contents lists articles in numerical order. Other magazines' tables of contents are organized by subjects, by columns, and by features. **Subjects** are the topics covered in the articles. A **feature** is a specific kind of article, such as an article about sports or cooking. **Feature** also has another meaning. A regular feature is something that appears in every issue, such as letters to the editor, movie reviews, and sports statistics. Some magazines also call regular features "departments."

Columns are another kind of regular feature published in every issue. Columns are often written by the same person each time. A person who writes a column is called a **columnist**.

Most magazines' tables of contents will also give you an idea of what a story is about. In online magazines, the table of contents often includes links that you can click to jump to a particular page or article.



Kids' Life

Articles	Comics
10 Skateboarding in the U.S.A. Read about kids from across the country and how they make the best of their boards.	6 Little People
12 Summer Camp Believe it or not, camp is fun!	14 Skating Sam
20 Battle of Gettysburg It was a decisive clash in the American Civil War.	30 Double Trouble
25 Snacks in a Flash Look at these treats you can make yourself.	Columns
29 Martin Luther King, Jr. The man who made people think twice.	7 Videos
	32 The Great Outdoors
	39 Fun and Famous
	Departments
	34 Your Health
	36 Sports
	38 Letters to the Editor

Directions: Answer these questions about Kids' Life magazine.

1. On what page does the story about summer camp begin? _____
2. List the titles of the departments in this magazine:
 - a) _____
 - b) _____
 - c) _____
3. Can you tell what the Battle of Gettysburg is by reading the table of contents?

4. Is there any information in this magazine about in-line skating? _____

Table of Contents

The articles in this magazine are grouped according to subjects.

LIVING

Table of Contents

Exercise	Ride for a while with these experienced cyclists.	13
Discoveries	Walk with a man through the ditches where he discovered dinosaur bones.	27
Happenings	Earth Day becomes important once again.	5
Science	Find out why astronauts like their jobs.	45
Music	Tunes that are sung in the mountains.	33
People	Read about Joe Biden and how he got to be Vice President.	20
	Learn about Jim Henson, the man behind the Muppets.	28
Sports	Why the Cleveland Indians might win the title.	42
History	A look at the lives of soldiers who were at Valley Forge.	39
Departments		
	Living Well	6
	Comedy	12
	Movies	24
	Letters to the Editor	9
	Books	16
	Snacks	36

Directions: Answer these questions about *LIVING* magazine.

- How many departments are in this issue of the magazine? _____
- Circle the topics that are regular features in *LIVING*.

Books	Dinosaurs	Cleveland Indians	Vice Presidents
Comedy	Living Well	Snacks	Earth Day
- What page would you look at if you wanted to see reviews of current movies?

- Is there any information in this magazine about football? _____
- Who are the two people featured in this issue? _____
- Is there anything in this issue about cycling? _____
- Under what heading is it listed? _____

Indexes

An **index** is an alphabetical listing of names, topics, and important words. It is found in the back of a book. An index lists every page on which these items appear. For example, in a book about music, dulcimer might be listed this way: Dulcimer 2, 13, 26, 38. Page numbers may also be listed like this: Guitars 18–21. That means that information about guitars begins on page 18 and continues through page 21. **Subject** is the name of the item in an index. **Sub-entry** is a smaller division of the subject. For example, apples would be listed under fruit.

Index

N		<i>See also planet names.</i>	
Neptune	27	Pleiades	32
NGC 5128 (galaxy)	39	Polaris	35, 36
Novas	32	Pole star. <i>See</i> Polaris.	
O		Project Ozma	41
Observatories. <i>See</i> El Caracol		R	
Orbits of planets	10	Rings. <i>See</i> Planet rings.	
Orion rocket	43	S	
P		Sagittarius	37
Planetoids. <i>See</i> Asteroids.		Satellites	
Planet rings		Jupiter	24
Jupiter	23	Neptune	27
Saturn	9, 25	Saturn	25
Uranus	26	Uranus	26
Planets		<i>See also</i> Galilean satellites	
discovered by Greeks	7	Saturn	25
outside the solar system	40		
visible with the naked eye	9		

Directions: Answer the questions about the index from this book about the solar system.

1. On what pages is there information about Polaris? _____
2. On what pages is information about Saturn’s first ring found? _____
3. What is on page 41? _____
4. Where is there information about the pole star? _____
5. What is on page 43? _____
6. On what page would you find information about planets that are visible to the eye? _____
7. On what page would you find information about Jupiter’s satellites? _____

Indexes

Some magazines use indexes to guide their readers to information they contain.

Appetizers

Bacon-Wrapped Halibut	92
Scallops with Sorrel and Tomato	116
Shrimp and Basil Beignets	116
Shrimp and Vegetable Spring Rolls with Hoisin and Mustard Sauces	85
Sweet Potato Ribbon Chips	136

Soups

Lemongrass Soup, Hot, with Radishes and Chives	84
Roasted Garlic Soup	22
Vegetable Soup with Creamy Asparagus Flan	154

Salads, Salad Dressings

Arugula Salad with Roasted Beets, Walnuts, and Daikon	158
Chicken, Fennel, Orange, and Olive Salad	24
Jicama Salad	81
Tomato, Onion, and Zucchini Salad	152
Walnut Vinaigrette	158

Directions: Answer the questions about the index from *Bon Appetit* magazine.

- How many kinds of salad are listed in this issue? _____
- What is the recipe that contains radishes? _____
- Name the recipe found on page 24. _____
- On what page would you find an appetizer that includes scallops?
What is the name of this recipe? _____
- Can you find any listings that contain halibut? _____
- On what page is a recipe made from sweet potatoes?
What is the name of this recipe? _____
For what part of a meal would it be served? _____

Review

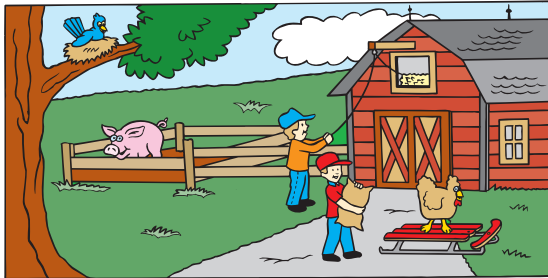
FARMING

Table of Contents

- 9 Farmers of the Midwest — Read about small farmers still trying to survive in the business.
- 15 Farmers’ Markets — Some farmers take their goods to town and sell them to the city folk.
- 26 Hay: The Cheapest Way — New technology helps produce bales of hay quicker and cheaper than in the past.
- 36 The Farm Family — Farming is a way of life, and everybody helps!

Departments

Letters to the Editor	5
Finances	7
High Tech	13
Haymaker	27



INDEX

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- Alabama 49
- Alps 21, 25
- Antarctica 10–12
- Antarctic Circle 8–10
- Arctic 12–14
- Arctic Circle 14
- Arctic Ocean 15
- Asia 37
- Athens 33
- Atlantic Ocean 11

- Baltic Sea 15, 30
- Baltimore 51
- Black Sea 37
- Bombay 39
- Brazil 59
- British Isles 19
- Buffalo 52
- Bug River 31

- Cadiz 27
- California 48
- Cambridge 19
- Cape of Good Hope 49
- China 11, 41
- Colorado River, Argentina 61
- Colorado River, U.S.A. 62
- Continents 2–3
- Cuba 55

Directions: Answer the questions about the table of contents from *Farming* magazine.

1. Is there any information about fashion in this magazine? _____
2. Is there any information about computers in this magazine? _____
3. Information about children on farms is probably included in which feature? _____
4. Are there any features about animals in this magazine? _____

Directions: Answer the questions about the index from this book about the world.

1. On what pages would you find information about the Baltic Sea? _____
2. What is listed on pages 2–3? _____
3. Where are the two Colorado Rivers? _____

Review

Directions: Follow the instructions for each section.

1. In your own words, explain why a table of contents is helpful.

2. A table of contents is often divided into units and sections.

What is a unit? _____

What is a section? _____

3. What is the purpose of breaking a table of contents down into units and sections?

4. What is an index?

5. What are the differences between a table of contents and an index?

6. Look at the table of contents in the front of this book. How many pages does the unit on Famous Athletes span?

Biographical Research

A **biography** is a written history of a person’s life. Often, information for a biography can be obtained from an encyclopedia, especially if a person is famous.

Most libraries have a biography section in the nonfiction area of the children's section. In this area, books are usually listed by the last name of the subject of the biography. For example, a biography of Amelia Earhart would appear after one about Mary Cassatt but before one about Bill Gates (Cassatt, Earhart, Gates).

There are also many websites where you can find biographies of athletes, scientists, politicians, artists, inventors, explorers, and so on. Like any other Internet searches, you must be careful to use only reliable, trustworthy sites. Sites such as www.biography.com, www.history.com, www.factmonster.com, and www.kidsclick.org are good places to start. If you ever feel unsure about the reliability of a website, be sure to check with a teacher or parent.

Directions: Answer these questions.

1. You are looking for biographies about the following people. Write the names in the order in which they would appear on the shelf in a library: Nat Turner, Eleanor Roosevelt, Wilma Rudolph, Wilbur Wright, Madeline Albright, and Jonas Salk.

2. Where was Abraham Lincoln born? Use a biographical or online encyclopedia to find the answer.

3. Look up Anne Lindbergh in a biographical resource and write down the years of her birth and death.

Biographical Research

Directions: Conduct research to find one fact about each of the following subjects. Use biographies or biographical encyclopedias you find at the library, online encyclopedias, or biographical Web sites.

1. Sally Ride

2. Frederick Douglass

3. Wilson Bentley

4. Frida Kahlo

5. Charles Goodyear

6. Serena Williams

7. Jeremy Lin

8. Stephen Hawking

9. Cynthia Rylant

Using the Library Catalog

Directions: Use the library catalog entries to answer the questions that follow.

Electric Ben: The Amazing Life and Times of Benjamin Franklin

Byrd, Robert.

Call Number: JB Franklin

New York: Dial Books for Young Readers, 2012.

ISBN: 978-0803737495

Subject: Franklin, Benjamin 1706–1790---Juvenile Literature

Inventors---United States---Biography---Juvenile Literature

Statesmen---United States---Biography---Juvenile Literature

1. What is the ISBN for *Electric Ben*? _____
2. How many subjects is the book listed under? _____
3. What is the book’s subtitle? _____
4. In what year was *Electric Ben* published? _____

Dogs on Duty : Soldiers’ Best Friends on the Battlefield and Beyond

Patent, Dorothy Hinshaw.

Call Number: J355.424

Bloomsbury USA Children’s, 2014.

ISBN: 978-0802736505

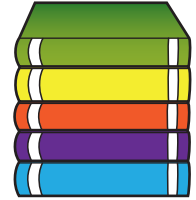
Subject: Dogs---War Use---Juvenile Literature

5. Who is the author of *Dogs on Duty*? _____
6. What is the book’s call number? _____
7. Is this book intended for children or adults? How do you know? _____

8. If you wanted to find more books on this subject, what search could you do in the library catalog?

Using the Library Catalog

A **library catalog** is a digital listing of the materials a library owns. Most libraries offer many search options. The most common ways to search are by title, author, subject, or keyword. If you don't find the book you are looking for at first, you may find it by changing your search. For example, if you can't find a book by title, try doing a keyword search using only one or two main words from the title.



Directions: Use a library catalog to answer the following questions.

1. What are the titles of three books by Roald Dahl?

2. Write the title of a children's book about volcanoes.

3. Write the author of one of the books in the Dear America series.

4. Who wrote the book Ice Island?

5. In what year was The Voyage of Lucy P. Simmons published?

6. Who is your favorite author? Write the author's name and the titles of two books he or she has published.

7. Who illustrated Seababy: A Little Otter Returns Home?

8. Do a keyword search for children's books about basketball. Write the titles and call numbers of two books that you find in your search results.

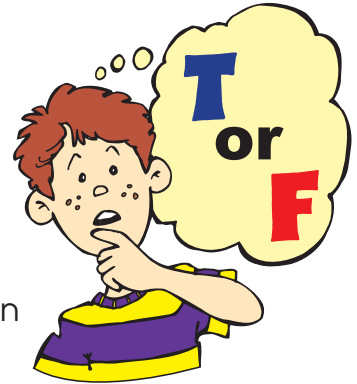
9. In what section of the library would you find Jean Lafitte: The Pirate Who Saved America?

10. What is the call number of the book The Giant and How He Humbugged America?

Review

Directions: Write **T** or **F** on the line beside each statement.

- _____ 1. A biography of Rosa Parks would come after a biography of Peyton Manning on a library shelf.
- _____ 2. A library is the only source of information for biographies.
- _____ 3. Most libraries shelve biographies in a separate section than other nonfiction books.



Directions: Write one biographical fact about each of the following people.

1. John F. Kennedy

2. Maya Lin

3. Gustav Klimt

4. Alma Flor Ada

5. Tiger Woods

Directions: Use a library catalog to answer the following questions.

1. Who is the author of *Same Sun Here*? _____

2. What is the ISBN for *What Came from the Stars*? _____

3. Who illustrated *Guys Read: The Sports Pages*? _____

4. Do a subject search for Civil War books. Write the call numbers and titles of two books in your search results.

Poetry

Format:

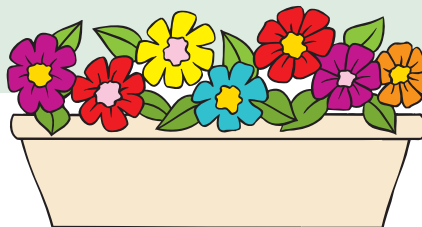
- Line 1: Name
- Line 2: Name is a (metaphor)
- Line 3: He/she is like (simile)
- Line 4: He/she (three action words)
- Line 5: He/she (relationship)
- Line 6: Name

Example:

Jessica
Jessica is a joy.
She is like a playful puppy.
She tumbles, runs, and laughs.
She's my baby sister!
Jessica

Directions: Build a poem that describes a friend or relative by using similes, metaphors, and other words of your choice. Follow the form of the example poem.





Poetry: Haiku

Haiku is a type of unrhymed Japanese poetry with three lines. The first line has five syllables. The second line has seven syllables. The third line has five syllables.

Example:



Katie

Katie leaps and bounds.
Runs free, full of life and joy.
Companion, friend, dog.



Directions: Write a haiku about a pet and another about a hobby you enjoy. Be sure to write a title on the first line. If you do not have a pet, write about a pet you might like to have.

Pet

Hobby

Poetry: Diamanté

A **diamanté** is a poem in the shape of a diamond. Diamantés have seven lines with this format:

- Line 1: one-word noun, opposite of word in line 7
- Line 2: two adjectives describing line 1
- Line 3: three **ing** or **ed** words about line 1
- Line 4: two nouns about line 1 and two nouns about line 7
- Line 5: three **ing** or **ed** words about line 7
- Line 6: two adjectives describing line 7
- Line 7: one word noun, opposite of word in line 1



Example:

child
 happy, playful
 running, singing, laughing
 toys, games, job, family
 working, driving, nurturing
 responsible, busy
 adult

Directions: Write a diamanté of your own.

Writing: Free Verse

Poems that do not rhyme and do not have a regular rhythm are called **free verse**. They often use adjectives, adverbs, similes, and metaphors to create word pictures.

My Old Cat

Curled on my bed at night,
 Quietly happy to see me,
 Soft, sleepy, relaxed,
 A calm island in my life.



Directions: Write your own free verse. Use the guidelines for each poem.

1. Write a two-line free verse poem about a feeling. Compare it to some kind of food. For example, anger could be a tangle of spaghetti. Give your poem a title.

2. Think of how someone you know is like a color—happy like yellow, for example. Write a two-line free verse poem on this topic without naming the person. Don't forget a title.

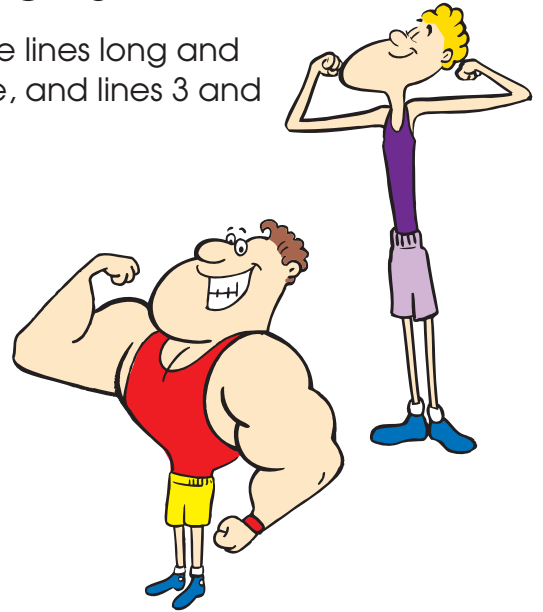
3. Write a four-line free verse poem, like "My Old Cat," that creates a word picture of a day at school.

Writing: Limericks

A **limerick** is a short, humorous poem. Limericks are five lines long and follow a specific rhyme pattern. Lines 1, 2, and 5 rhyme, and lines 3 and 4 rhyme.

Example:

There once was a young fellow named Fred
 Whose big muscles went right to his head.
 "I'll make the girls sigh,
 'Cause I'm quite a guy!"
 But the girls all liked Ted more than Fred!



Directions: Complete the limericks.

1. There was a young lady from Kent

Whose drawings were quite excellent.

So to the big city she went.

2. I have a pet squirrel named Sonny

He ran up a tree

As far as could be

3. There once was a boy who yelled, "Fire!"

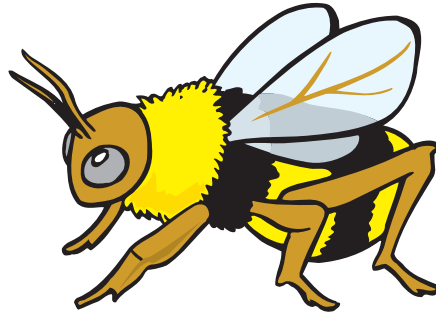
He just did not see

Writing: Acrostics

An **acrostic** is a poem that uses the letters of a word to begin each line. Read down, the first letter of each line spells the word. The poem tells something about the word that is spelled out.

Example:

In the grass or underground,
Now and then they fly around.
Slugs and worms and butterflies,
Each has its own shape and size.
Caterpillars, gnats, a bee,
Take them all away from me!



Directions: Write acrostic poems for the words **shoes** and **phone**. Your poems can rhyme or be free verse.

S _____

H _____

O _____

E _____

S _____

P _____

H _____

O _____

N _____

E _____

Directions: Write an acrostic poem for your name or a word of your choice on another sheet of paper. Draw a picture for your poem.

Friendly Letters

Directions: Study the format for writing a letter to a friend. Then, answer the questions.

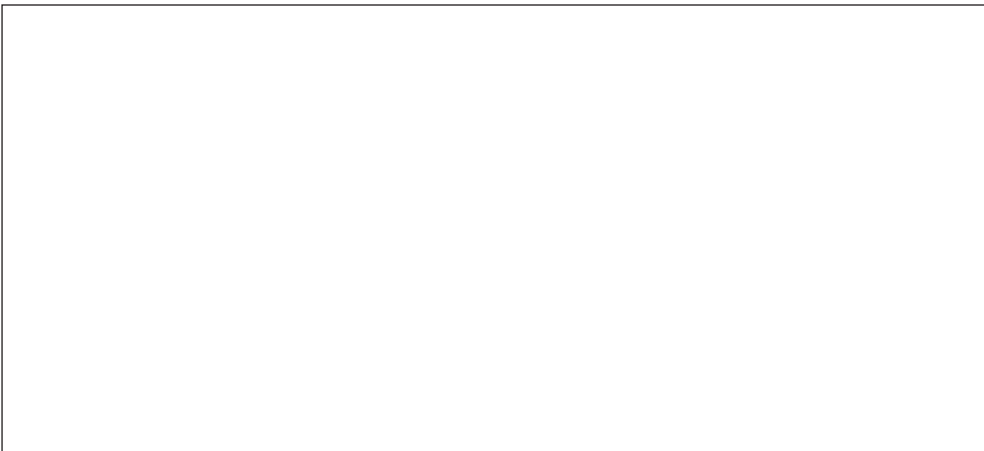
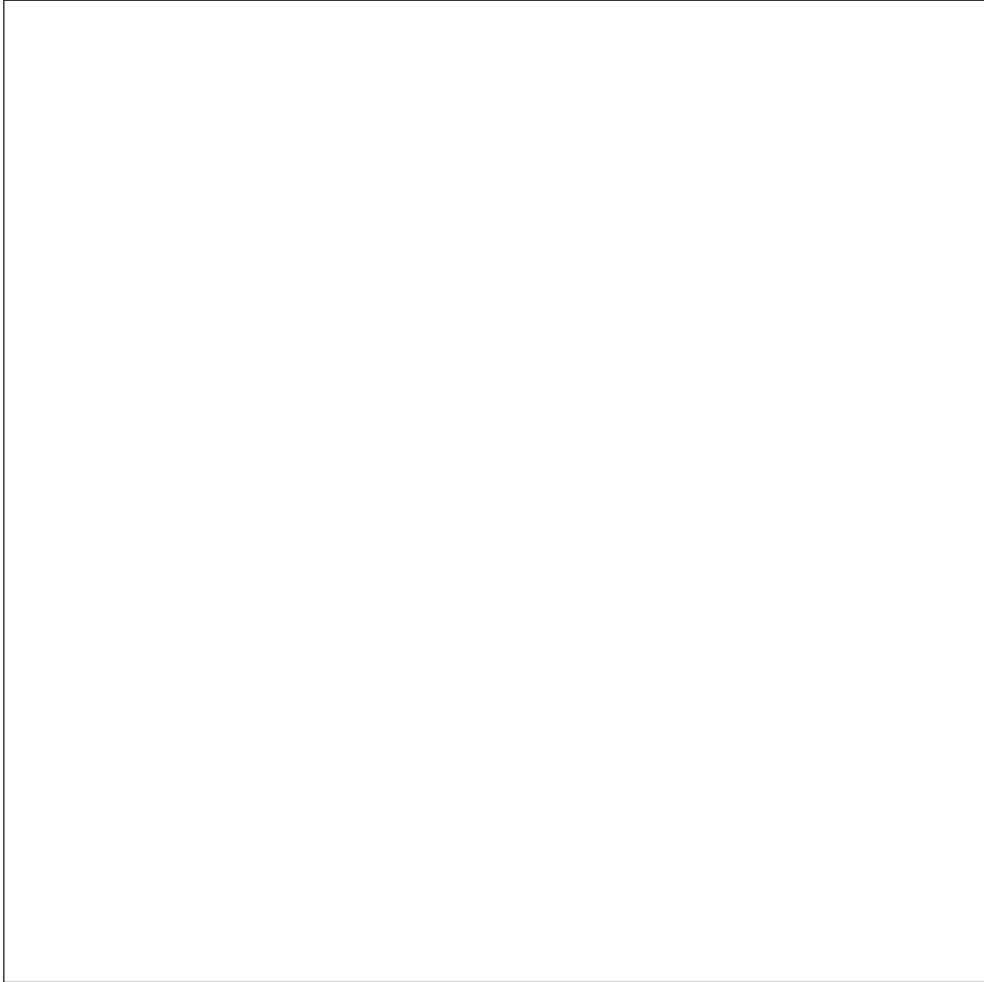
your return address	4500 Waverly Road Cincinnati, Ohio 45241
date	June 23, 2015
greeting	Dear Josh,
body	<p>How is your summer going? I am enjoying mine so far. I have been swimming twice already this week, and it is only Wednesday! I am glad there is a pool near our house.</p> <p>My parents said that you can stay overnight when your family comes for the 4th of July picnic. Do you want to? We can pitch a tent in the backyard and camp out. It will be a lot of fun!</p> <p>Please write back to let me know if you can stay over on the 4th. I will see you then!</p>
closing signature	Your friend, Michael

your return address	Michael Delaney 4500 Waverly Road Cincinnati, Ohio 45241
main address	Josh Sommers 3350 West First Ave. Columbus, OH 43212

1. What words are in the greeting? _____
2. What words are in the closing? _____
3. On what street does the writer live? _____

Friendly Letters

Directions: Follow the format for writing a letter to a friend. Don't forget to address the envelope!



MATH

$$\begin{array}{r} 347 \\ + 123 \\ \hline \end{array}$$

$$\frac{67}{5}$$

$$\begin{array}{r} 1.92 \\ \times 2.3 \\ \hline \end{array}$$

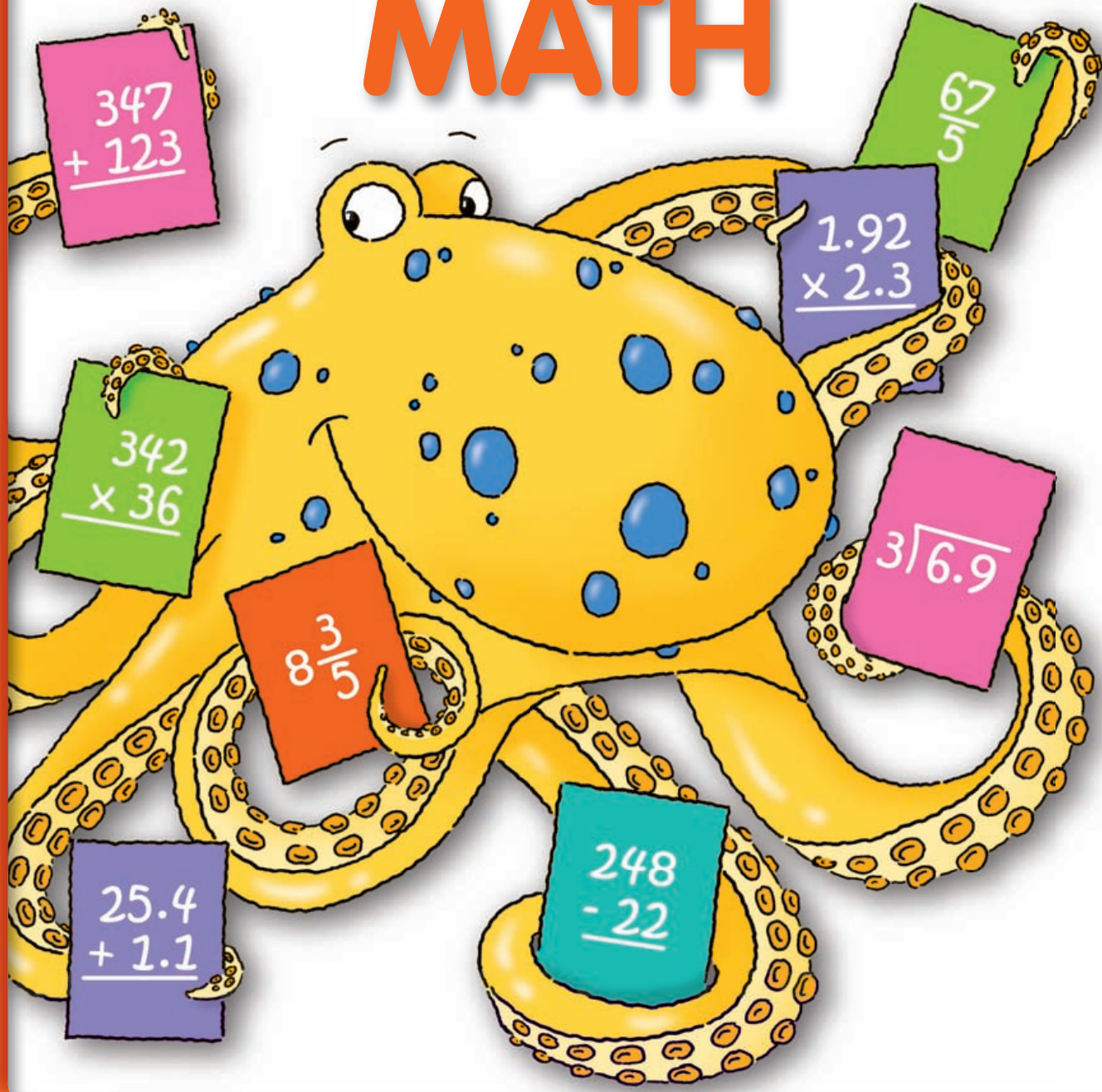
$$\begin{array}{r} 342 \\ \times 36 \\ \hline \end{array}$$

$$8\frac{3}{5}$$

$$3\overline{)6.9}$$

$$\begin{array}{r} 25.4 \\ + 1.1 \\ \hline \end{array}$$

$$\begin{array}{r} 248 \\ - 22 \\ \hline \end{array}$$

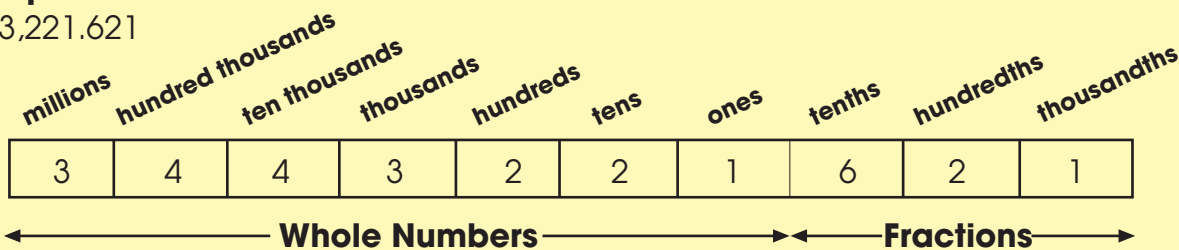


Place Value

Place value is the position of a digit in a number. A digit's place in a number shows its value. Numbers left of the decimal point represent **whole numbers**. Numbers right of the decimal point represent a part, or fraction, of a whole number. These parts are broken down into tenths, hundredths, thousandths, and so on.

Example:

3,443,221.621



Directions: Write the following number words as numbers.

- Three million, forty-four thousand, six hundred twenty-one _____
- One million, seventy-seven _____
- Nine million, six hundred thousand, one hundred two _____
- Twenty-nine million, one hundred three thousand, and nine tenths

- One million, one hundred thousand, one hundred seventy-one, and thirteen hundredths _____

Directions: In each box, write the corresponding number for each place value.

- | | | |
|----------------------|----------------------|-------------------|
| 1. 4,822,000.00 | <input type="text"/> | hundreds |
| 2. 55,907,003.00 | <input type="text"/> | thousands |
| 3. 190,641,225.07 | <input type="text"/> | hundred thousands |
| 4. 247,308,211.59 | <input type="text"/> | tenths |
| 5. 7,594,097.33 | <input type="text"/> | millions |
| 6. 201,480,110.01 | <input type="text"/> | hundred thousands |
| 7. 42,367,109,074.25 | <input type="text"/> | hundredths |



Place Value

The chart below shows the place value of each number.

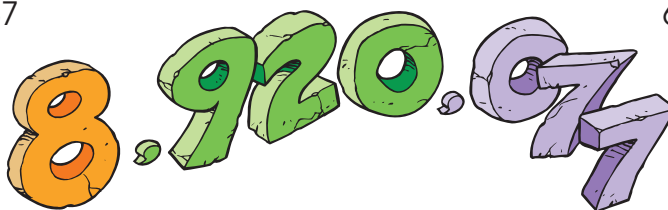


trillions	billions	millions	thousands	ones
h t o	h t o	h t o	h t o	h t o
2	1 4 0	9 0 0	6 8 0	3 5 0

Word form: two trillion, one hundred forty billion, nine hundred million, six hundred eighty thousand, three hundred fifty

Directions: Draw a line to the correct value of each underlined digit. The first one is done for you.

- | | |
|------------------------|--------------------|
| 6 <u>4</u> 3,000 | 2 hundred million |
| <u>1</u> 3,294,125 | 9 billion |
| <u>6</u> 78,446 | 40 thousand |
| 389, <u>2</u> 76 | 2 thousand |
| <u>1</u> 9,000,089,965 | 2 billion |
| 78, <u>7</u> 64 | 1 hundred thousand |
| 61 <u>2</u> ,689 | 9 thousand |
| <u>2</u> 98,154,370 | 70 thousand |
| 8 <u>9</u> ,256 | 10 million |
| 1, <u>3</u> 70 | 30 million |
| 853,6 <u>7</u> 2,175 | 7 hundred |
| <u>2</u> ,842,751,360 | 3 hundred |
| <u>1</u> 63,456 | 2 hundred |
| <u>4</u> 38,276,587 | 6 hundred thousand |



Expanded Notation

Expanded notation is writing out the value of each digit in a number.

Example:

$$8,920,077 = 8,000,000 + 900,000 + 20,000 + 70 + 7$$

Word form: Eight million, nine hundred twenty thousand, seventy-seven

Directions: Write the following numbers using expanded notation.

1. 20,769,033 _____

2. 1,183,541,029 _____

3. 776,003,091 _____

4. 5,920,100,808 _____

5. 14,141,543,760 _____

Directions: Write the following numbers.

1. $700,000 + 900 + 60 + 7$ _____

2. $35,000,000 + 600,000 + 400 + 40 + 2$ _____

3. $12,000,000 + 700,000 + 60,000 + 4,000 + 10 + 4$ _____

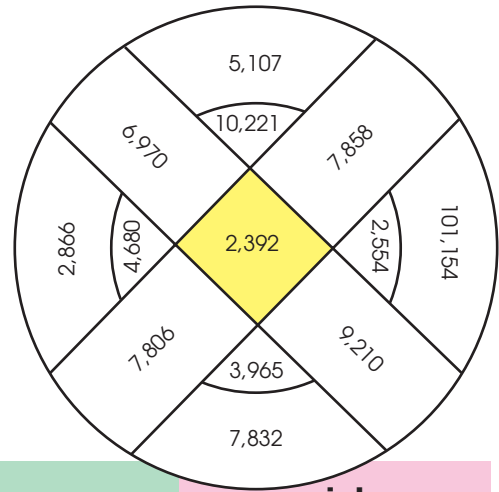
4. $80,000,000,000 + 8,000,000,000 + 400,000,000 + 80,000,000 + 10,000 + 400 + 30$

5. $4,000,000,000 + 16,000,000 + 30 + 2$ _____

Addition and Place Value

Directions: Add the problems below in which the digits with the same place value are lined up correctly. Then, cross out the problems in which the digits are not lined up correctly.

Find each answer in the diagram, and color that section.



yellow	blue	green	pink
$\begin{array}{r} 638 \\ 1,289 \\ + 465 \\ \hline 2,392 \end{array}$	 $\begin{array}{r} 98 \\ 324 \\ + 9,756 \\ \hline \end{array}$ 	$\begin{array}{r} 4,326 \\ 82 \\ + 699 \\ \hline \end{array}$	$\begin{array}{r} 589 \\ 95 \\ + 8,526 \\ \hline \end{array}$
$\begin{array}{r} 579 \\ 125 \\ + 244 \\ \hline \end{array}$	$\begin{array}{r} 296 \\ 2,183 \\ + 75 \\ \hline \end{array}$	$\begin{array}{r} 93,287 \\ 36 \\ + 7,831 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ 315 \\ + 7,492 \\ \hline \end{array}$
$\begin{array}{r} 83 \\ 1,298 \\ + 62 \\ \hline \end{array}$	$\begin{array}{r} 938 \\ 3,297 \\ + 445 \\ \hline \end{array}$	$\begin{array}{r} 1,849 \\ 964 \\ + 53 \\ \hline \end{array}$	$\begin{array}{r} 198 \\ 72 \\ + 68 \\ \hline \end{array}$
$\begin{array}{r} 987 \\ 934 \\ + 3,163 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 390 \\ + 9,785 \\ \hline \end{array}$	$\begin{array}{r} 856 \\ 642 \\ + 7,462 \\ \hline \end{array}$	$\begin{array}{r} 591 \\ 6,352 \\ + 27 \\ \hline \end{array}$
$\begin{array}{r} 57 \\ 7,520 \\ + 463 \\ \hline \end{array}$	$\begin{array}{r} 773 \\ 3,118 \\ + 74 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ 7,430 \\ + 338 \\ \hline \end{array}$	$\begin{array}{r} 919 \\ 52 \\ + 6,835 \\ \hline \end{array}$

Addition

Directions: Add the following numbers in your head without writing them out.

1. $17 + 33 =$ _____

2. $35 + 15 =$ _____

3. $75 + 25 =$ _____

4. $41 + 25 =$ _____

5. $27 + 23 =$ _____

6. $30 + 20 =$ _____

7. $12 + 18 =$ _____

8. $43 + 22 =$ _____

9. $16 + 34 =$ _____

10. $9 + 11 + 30 =$ _____

11. $29 + 21 + 40 =$ _____

12. $14 + 16 + 20 =$ _____

13. $37 + 13 + 25 =$ _____

14. $12 + 22 + 36 =$ _____

15. $19 + 21 + 57 =$ _____

16. $21 + 24 + 25 =$ _____

17. $63 + 14 + 11 =$ _____

18. $33 + 15 + 42 =$ _____

19. $25 + 15 + 60 =$ _____

20. $30 + 20 + 10 =$ _____

$$14 + 12 + 7 + 20 + 9 + 18 = ?$$

Addition Word Problems

Directions: Solve the following addition word problems.

1. 100 students participated in a sports card show in the school gym. Brad brought his entire collection of 2,000 cards to show his friends. He had 700 football cards and 400 basketball cards. If the rest of his cards were baseball cards, how many baseball cards did he bring with him?

2. Refreshments were set up in one area of the gym. Hot pretzels were a dollar, lemonade was 50 cents, fruit was 35 cents, and cookies were a quarter. If you purchased two of each item, how much money would you need?

3. It took each student 30 minutes to set up for the card show and twice as long to put everything away. The show was open for 3 hours. How much time did each student spend on this event?

4. 450 people attended the card show. 55 were mothers of students, 67 were fathers, 23 were grandparents, 8 were aunts and uncles, and the rest were kids. How many kids attended?

5. Of the 100 students who set up displays, most of them sold or traded some of their cards. Jonas sold 75 cards, traded 15 cards, and collected \$225. Kevin only sold 15 cards, traded 81 cards, and collected \$100. Valentina traded 200 cards, sold 10, and earned \$35. Of those listed, how many cards were sold, how many were traded, and how much money was earned?

sold _____ traded _____ earned \$ _____



Subtraction

Directions: Subtract the following numbers. When subtracting, begin on the right, especially if you need to regroup and borrow.

$$\begin{array}{r} 549 \\ - 162 \\ \hline \end{array}$$

$$\begin{array}{r} 823 \\ - 417 \\ \hline \end{array}$$

$$\begin{array}{r} 370 \\ - 244 \\ \hline \end{array}$$

$$\begin{array}{r} 648 \\ - 79 \\ \hline \end{array}$$

$$\begin{array}{r} 700 \\ - 343 \\ \hline \end{array}$$

$$\begin{array}{r} 475 \\ - 299 \\ \hline \end{array}$$

$$\begin{array}{r} 603 \\ - 425 \\ \hline \end{array}$$

$$\begin{array}{r} 354 \\ - 265 \\ \hline \end{array}$$

$$\begin{array}{r} 1,841 \\ - 952 \\ \hline \end{array}$$

$$\begin{array}{r} 2,597 \\ - 608 \\ \hline \end{array}$$

$$\begin{array}{r} 6,832 \\ - 1,774 \\ \hline \end{array}$$

$$\begin{array}{r} 9,005 \\ - 3,458 \\ \hline \end{array}$$

$$\begin{array}{r} 23,342 \\ - 9,093 \\ \hline \end{array}$$

$$\begin{array}{r} 53,790 \\ - 40,813 \\ \hline \end{array}$$

$$\begin{array}{r} 29,644 \\ - 19,780 \\ \hline \end{array}$$

$$\begin{array}{r} 35,726 \\ - 16,959 \\ \hline \end{array}$$

$$\begin{array}{r} 109,432 \\ - 79,145 \\ \hline \end{array}$$

$$\begin{array}{r} 350,907 \\ - 14,185 \\ \hline \end{array}$$

$$\begin{array}{r} 217,523 \\ - 44,197 \\ \hline \end{array}$$

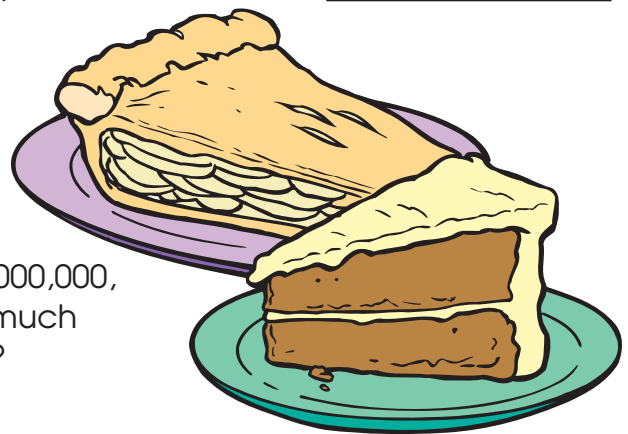
$$\begin{array}{r} 537,411 \\ - 406,514 \\ \hline \end{array}$$

Subtraction Word Problems

Directions: Solve the following subtraction word problems.

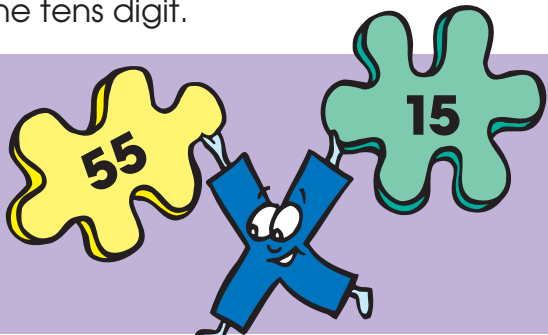
1. Last year, 28,945 people lived in Mike's town. This year, there are 31,889. How many people have moved in? _____
2. Brad earned \$227 mowing lawns. He spent \$168 on a new easel, paints, and other art supplies. How much money does he have left? _____
3. The school year has 180 days. Carrie has gone to 32 school days so far. How many more days does she have left? _____
4. Xavier wants a skateboard that costs \$128. He has saved \$47. How much more does he need? _____
5. To get to school, Imani walks 1,275 steps, and Carolyn walks 2,618 steps. How many more steps does Carolyn walk than Imani? _____
6. Sydney has placed 91 of the 389 pieces in a new puzzle she purchased. How many more does she have left to finish? _____
7. From New York, it's 2,823 miles to Los Angeles and 1,327 miles to Miami. How much farther away is Los Angeles? _____
8. Sheila read that a piece of carrot cake has 236 calories, but a piece of apple pie has 427 calories. How many calories will she save by eating the cake instead of the pie? _____
9. Ichiro's summer camp costs \$223, while Sam's costs \$149. How much more does Tim's camp cost?

10. Last year, the nation's budget was \$45,000,000,000, but the nation spent \$52,569,342,000. How much more than its budget did the nation spend?



Multiplication

Directions: Multiply the following numbers. Be sure to keep the numbers aligned, and place a 0 in the ones place when multiplying by the tens digit.

Example:	Correct	Incorrect	
	$\begin{array}{r} 55 \\ \times 15 \\ \hline 275 \\ 550 \\ \hline 825 \end{array}$	$\begin{array}{r} 55 \\ \times 15 \\ \hline 275 \\ \hline 55 \\ \hline 330 \end{array}$	

1.
$$\begin{array}{r} 12 \\ \times 6 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 44 \\ \times 9 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 27 \\ \times 7 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 92 \\ \times 6 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 85 \\ \times 9 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 78 \\ \times 24 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 32 \\ \times 17 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 19 \\ \times 46 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 63 \\ \times 12 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 38 \\ \times 77 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 125 \\ \times 6 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 641 \\ \times 25 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 713 \\ \times 47 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 586 \\ \times 45 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 294 \\ \times 79 \\ \hline \end{array}$$

16. $20 \times 4 \times 7 =$ _____

17. $9 \times 5 \times 11 =$ _____

18. $16 \times 2 \times 2 =$ _____

19. $7 \times 6 \times 3 =$ _____

20. $33 \times 11 \times 3 =$ _____

21. $2 \times 8 \times 10 =$ _____

Multiplying with Zeros

Directions: Multiply the following numbers. If a number ends with zero, you can eliminate it while calculating the rest of the answer. Then, count how many zeros you took off, and add them to your answer.

Example:

$$\begin{array}{r} 550 \\ \times 50 \\ \hline 27,500 \end{array}$$

Take off 2 zeros

Add on 2 zeros

$$\begin{array}{r} 500 \\ \times 5 \\ \hline 2,500 \end{array}$$

Take off 2 zeros

Add on 2 zeros

1.
$$\begin{array}{r} 300 \\ \times 6 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 400 \\ \times 7 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 620 \\ \times 5 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 290 \\ \times 7 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 142 \\ \times 20 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 505 \\ \times 50 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 340 \\ \times 70 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 600 \\ \times 60 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 550 \\ \times 380 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 290 \\ \times 150 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 2,040 \\ \times 360 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 8,800 \\ \times 200 \\ \hline \end{array}$$

13. Bruce traveled 600 miles each day of a 10-day trip. How far did he go during the entire trip? _____

14. 30 children each sold 20 items for the school fundraiser. Each child earned \$100 for the school. How much money did the school collect? _____

15. $10 \times 40 \times 2 =$ _____

16. $30 \times 30 \times 10 =$ _____

17. $100 \times 60 \times 10 =$ _____

18. $500 \times 11 \times 2 =$ _____

19. $9 \times 10 \times 10 =$ _____

20. $7,000 \times 20 \times 10 =$ _____

Division

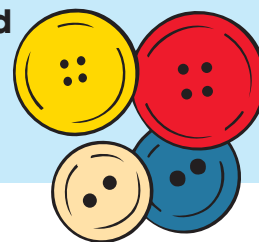
In a division problem, the **dividend** is the number to be divided, the **divisor** is the number used to divide, and the **quotient** is the answer. To check your work, multiply your answer times the divisor, and you should get the dividend.

Example:

$$\begin{array}{r} 130 \leftarrow \text{quotient} \\ \text{divisor} \rightarrow 4 \overline{)520} \leftarrow \text{dividend} \\ \underline{4} \\ 12 \\ \underline{12} \\ 00 \end{array}$$

Check:

$$\begin{array}{r} 130 \leftarrow \text{quotient} \\ \times 4 \leftarrow \text{divisor} \\ \hline 520 \leftarrow \text{dividend} \end{array}$$



Directions: Solve the following division problems.

1. $3 \overline{)546}$

2. $5 \overline{)720}$

3. $2 \overline{)458}$

4. $4 \overline{)796}$

5. $7 \overline{)896}$

6. $4 \overline{)128}$

7. $4 \overline{)376}$

8. $5 \overline{)225}$

9. $3 \overline{)684}$

10. $6 \overline{)924}$

11. $25 \overline{)475}$

12. $16 \overline{)768}$

13. $14 \overline{)840}$

14. $22 \overline{)418}$

15. $21 \overline{)693}$

Directions: Solve these division problems in your head. Challenge yourself for speed and accuracy.

1. $22 \div 2 =$ _____

2. $15 \div 3 =$ _____

3. $72 \div 9 =$ _____

4. $36 \div 4 =$ _____

5. $27 \div 9 =$ _____

6. $56 \div 8 =$ _____

7. $81 \div 9 =$ _____

8. $42 \div 6 =$ _____

9. $63 \div 9 =$ _____

10. $60 \div 5 =$ _____

11. $70 \div 10 =$ _____

12. $98 \div 7 =$ _____

13. $55 \div 5 =$ _____

14. $64 \div 8 =$ _____

15. $84 \div 3 =$ _____

Division Word Problems

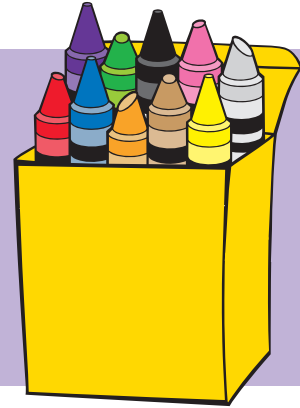
In the example below, 368 is being divided by 4. 4 won't divide into 3, so move over one position, and divide 4 into 36. 4 goes into 36 nine times. Then, multiply 4×9 to get 36. Subtract 36 from 36. The answer is 0, less than the divisor, so 9 is the right number. Now bring down the 8, divide 4 into it, and repeat the process.

Example:

$$\begin{array}{r} 9 \\ 4 \overline{)368} \\ \underline{36} \\ 0 \end{array}$$

$$\begin{array}{r} 92 \\ 4 \overline{)368} \\ \underline{36} \\ 08 \\ \underline{8} \\ 0 \end{array}$$

To check your division, multiply $4 \times 92 = 368$.



Directions: Solve the following division problems. (For some problems, you will also need to add or subtract.)

- Kristy helped the kindergarten teacher put a total of 192 crayons into 8 boxes. How many crayons did they put into each box?

- The scout troop has to finish a 12-mile hike in 3 hours. How many miles an hour will they have to walk?

- At her slumber party, Makayla had 4 friends and 25 pieces of candy. If she kept 5 pieces and divided the rest among her friends, how many pieces did each friend get?

- Miles's book has 147 pages. He wants to read the same number of pages each day and finish reading the book in 7 days. How many pages should he read each day?

- Brian and 2 friends are going to share 27 marbles. How many will each person get?

- To help the school, 5 parents agreed to sell 485 tickets for a raffle. How many tickets will each person have to sell to do his/her part?

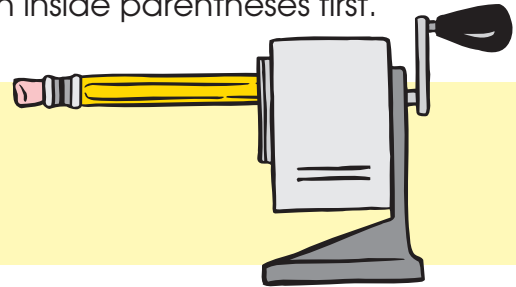
- Jorge is going to weed his neighbor's garden for \$3 an hour. How many hours does he have to work to make \$72?

Equations

In an **equation**, the value on the left of the equal sign must equal the value on the right. Remember the order of operations: solve from left to right, multiply or divide numbers before adding or subtracting, and do the operation inside parentheses first.

Example:

$$\begin{array}{l} 6 + 4 - 2 = 4 \times 2 \\ \underbrace{}_{10} - 2 = \underbrace{}_8 \\ 8 = 8 \end{array}$$



Directions: Write the correct operation signs in the blanks to make accurate equations.

1. $(25 \text{ ______ } 25) \text{ ______ } 2 = 100 \text{ ______ } 75$
2. $(76 \text{ ______ } 24) \text{ ______ } 3 = 150 \text{ ______ } 2$
3. $140 \text{ ______ } 2 \text{ ______ } 10 = 500 \text{ ______ } 50 \text{ ______ } 150$
4. $2,100 \text{ ______ } 2,000 \text{ ______ } 60 = 80 \text{ ______ } 2$
5. $80 \text{ ______ } 8 \text{ ______ } 4 = 160 \text{ ______ } 160 \text{ ______ } 160$
6. $(55 \text{ ______ } 100) \text{ ______ } 11 = (1,000 \text{ ______ } 2) \text{ ______ } 4$
7. $137 \text{ ______ } 81 \text{ ______ } 52 = 3 \text{ ______ } 90$
8. $3,000 \text{ ______ } 10 \text{ ______ } 10 = (600 \text{ ______ } 300) \text{ ______ } 30$
9. $(720 \text{ ______ } 20) \text{ ______ } 4 = 37 \text{ ______ } 5$
10. $(457 \text{ ______ } 43) \text{ ______ } 500 = (21 \text{ ______ } 40) \times 0$



Equations

Directions: Write the correct operation signs in the blanks to make accurate equations.

1. $5 \underline{\quad} 5 \underline{\quad} 5 = 3 \underline{\quad} 5 \underline{\quad} 0$

2. $(50 \underline{\quad} 0) \underline{\quad} 2 = 25 \underline{\quad} 2 \underline{\quad} 2$

3. $2 \underline{\quad} 2 \underline{\quad} 2 \underline{\quad} 2 = 2 \underline{\quad} 2 \underline{\quad} 4$

4. $(4 \underline{\quad} 5) \underline{\quad} 5 \underline{\quad} 5 = 2 \underline{\quad} 3 \underline{\quad} 5$

5. $(25 \underline{\quad} 5) \underline{\quad} 2 \underline{\quad} 3 = 3 \underline{\quad} 6 \underline{\quad} 2 \underline{\quad} 5$

6. $(125 \underline{\quad} 7) \underline{\quad} 2 \underline{\quad} 3 = 100 \underline{\quad} 2 \underline{\quad} 4 \underline{\quad} 70 \underline{\quad} 10$

7. $(100 \underline{\quad} 10) \underline{\quad} 5 \underline{\quad} 10 = 10 \underline{\quad} 5 \underline{\quad} 100 \underline{\quad} 10$

8. $35 \underline{\quad} 35 \underline{\quad} 5 \underline{\quad} 2 = 5 \underline{\quad} 3 \underline{\quad} 2 \underline{\quad} 5$

9. $(60 \underline{\quad} 2) \underline{\quad} 3 = 3 \underline{\quad} 3 \underline{\quad} 3 \underline{\quad} 0 \underline{\quad} 15 \underline{\quad} (5 \underline{\quad} 15)$

10. $(120 \underline{\quad} 4) \underline{\quad} 7 \underline{\quad} 3 = (7 \underline{\quad} 7) \underline{\quad} (2 \underline{\quad} 5)$

11. $(91 \underline{\quad} 3 \underline{\quad} 6) \underline{\quad} 3 = 2 \underline{\quad} 5 \underline{\quad} 1 \underline{\quad} 3 \underline{\quad} (2 \underline{\quad} 5)$

12. $(16 \underline{\quad} 4) \underline{\quad} 8 = 5 \underline{\quad} 5 \underline{\quad} (3 \underline{\quad} 3) \underline{\quad} 6$

13. $0 \underline{\quad} 5 \underline{\quad} 15 \underline{\quad} 4 = 3 \underline{\quad} 3 \underline{\quad} 3 \underline{\quad} 8$

14. $16 \underline{\quad} 3 \underline{\quad} 12 \underline{\quad} (2 \underline{\quad} 20) = (2 \underline{\quad} 2) \underline{\quad} 6 \underline{\quad} 10 \underline{\quad} (2 \underline{\quad} 7)$

15. $21 \underline{\quad} (3 \underline{\quad} 3) \underline{\quad} 3 \underline{\quad} 1 = 3 \underline{\quad} 1 \underline{\quad} 2 \underline{\quad} 20$



Rounding and Estimating

Rounding is expressing a number to the nearest whole number, ten, thousand, or other value. **Estimating** is using an approximate number instead of an exact one. When rounding a number, we say a country has 98,000,000 citizens instead of 98,347,425. We can round numbers to the nearest whole number, the nearest hundred, or the nearest million—whatever is appropriate.

Here are the steps: 1) Decide where you want to round the number. 2) If the digit to the right is less than 5, leave the digit at the rounding place unchanged. 3) If the digit to the right is 5 or more, increase the digit at the rounding place by 1.

Examples: 587 rounded to the nearest hundred is 600.
 535 rounded to the nearest hundred is 500.
 21,897 rounded to the nearest thousand is 22,000.
 21,356 rounded to the nearest thousand is 21,000.

When we estimate numbers, we use rounded, approximate numbers instead of exact ones.

Example: A hamburger that costs \$1.49 and a drink that costs \$0.79 total about \$2.30 (\$1.50 plus \$0.80).

Directions: Use rounding and estimating to find the answers to these questions. You may have to add, subtract, multiply, or divide.

1. Sarita is having a party and wants to fill 11 cups from a 67-ounce bottle of juice. About how many ounces should she pour into each cup? _____
2. Hannah studied 28 minutes every day for 4 days. About how long did she study in all? _____
3. About how much does this lunch cost? \$1.19 \$ 0.39 \$ 0.49 _____
4. The numbers below show how long Frank spent studying last week. Estimate how many minutes he studied for the whole week.
 Monday: 23 minutes Tuesday: 37 minutes Wednesday: 38 minutes
 Thursday: 12 minutes _____
5. One elephant at the zoo weighs 1,417 pounds, and another one weighs 1,789 pounds. About how much heavier is the second elephant? _____
6. If Jordan studied a total of 122 minutes over 4 days, about how long did he study each day? _____
7. It's 549 miles to Dover and 345 miles to Albany. About how much closer is Albany? _____

Rounding

Directions: Round each number, and then estimate the answer. You can use a calculator to find the exact answer.



Round to the nearest ten.

Estimate

Actual Answer

1. $86 \div 9 =$

2. $237 + 488 =$

3. $49 \times 11 =$

4. $309 + 412 =$

5. $625 - 218 =$



Round to the nearest hundred.

6. $790 - 70 =$

7. $690 \div 70 =$

8. $2,177 - 955 =$

9. $4,792 + 3,305 =$

10. $5,210 \times 90 =$

Round to the nearest thousand.

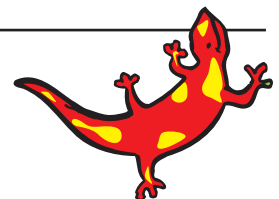
11. $4,078 + 2,093 =$

12. $5,525 - 3,065 =$

13. $6,047 \div 2,991 =$

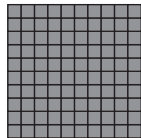
14. $1,913 \times 4,216 =$

15. $7,227 + 8,449 =$

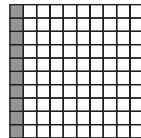


Decimals

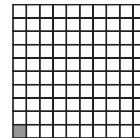
A **decimal** is a number that includes a period called a **decimal point**. The digits to the right of the decimal point are a value less than one.



one whole



one tenth



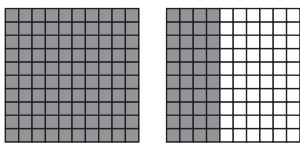
one hundredth

The place value chart below helps explain decimals.

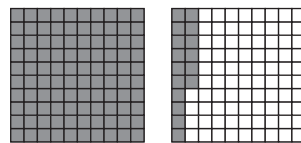
hundreds	tens	ones	.	tenths	hundredths	thousandths
6	3	2	.	4		
	4	7	.	0	5	
		8	.	0	0	9

A decimal point is read as "and." The first number, 632.4, is read as "six hundred thirty-two and four tenths." The second number, 47.05, is read as "forty-seven and five hundredths." The third number, 8.009, is read as "eight and nine thousandths."

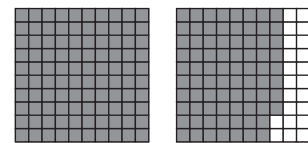
Directions: Write the decimals shown below. Two have been done for you.



1. 1.4



2. _____



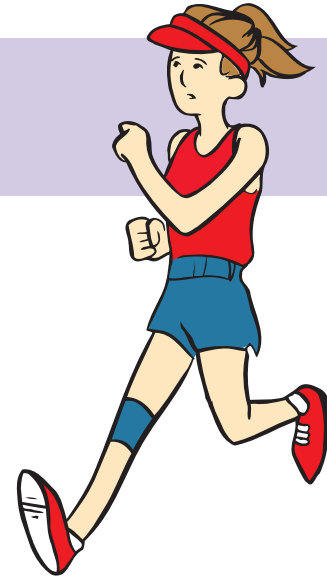
3. _____

- 4. six and five tenths 6.5
- 5. twenty-two and nine tenths _____
- 6. thirty-six and fourteen hundredths _____
- 7. forty-seven hundredths _____
- 8. one hundred six and four tenths _____
- 9. seven and three hundredths _____
- 10. one tenth less than 0.6 _____
- 11. one hundredth less than 0.34 _____
- 12. one tenth more than 0.2 _____

Adding and Subtracting Decimals

When adding or subtracting decimals, place the decimal points under each other. That way, you add tenths to tenths, for example, not tenths to hundredths. Add or subtract beginning on the right, as usual. Carry or borrow numbers in the same way. Adding 0 to the end of decimals does not change their value, but sometimes makes them easier to add and subtract.

Examples:	$\begin{array}{r} 39.40 \\ + 6.81 \\ \hline 46.21 \end{array}$	$\begin{array}{r} 0.064 \\ + 0.470 \\ \hline 0.534 \end{array}$	$\begin{array}{r} 3.56 \\ - .09 \\ \hline 3.47 \end{array}$	$\begin{array}{r} 6.83 \\ - 2.14 \\ \hline 4.69 \end{array}$
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Directions: Solve the following problems.

1. Write each set of numbers in a column and add them.

a. $2.56 + 0.6 + 76 =$ _____

b. $93.5 + 23.06 + 1.45 =$ _____

c. $3.23 + 91.34 + 0.85 =$ _____

2. Write each pair of numbers in a column and subtract them.

A. $7.89 - 0.56 =$ _____ B. $34.56 - 6.04 =$ _____ C. $7.6 - 3.24 =$ _____

3. In a relay race, Alice ran her part in 23.6 seconds, Xian did hers in 24.7 seconds, and Erin took 20.09 seconds. How many seconds did they take altogether?

4. Although Erin ran her part in 20.09 seconds today, yesterday it took her 21.55 seconds. How much faster was she today?

5. Add this grocery bill:
potatoes—\$3.49; milk—\$2.09; bread—\$0.99; apples—\$2.30

6. A yellow coat cost \$47.59, and a blue coat cost \$36.79. How much more did the yellow coat cost?

7. A box of Oat Boats cereal has 14.6 ounces. A box of Nut Crunch has 17.85 ounces. How much more cereal is in the Nut Crunch box?

8. The Oat Boats cereal has 4.03 ounces of sugar in it. Nut Crunch cereal has only 3.76 ounces. How much more sugar is in a box of Oats Boats?

Multiplying Decimals by Two-Digit Numbers

To multiply by a 2-digit number, just repeat the same steps. In the example below, first multiply 4 times 9, 4 times 5, and 4 times 3. Then, multiply 2 times 9, 2 times 5, and 2 times 3. You may want to place a 0 in the ones place to make sure this answer, 718, is one digit to the left. Now, add 1,436 + 7,180 to get the final answer.

Example:

$\begin{array}{r} 359 \\ \times 24 \\ \hline 6 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 36 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1,436 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1,436 \\ \underline{80} \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1,436 \\ \underline{180} \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1,436 \\ \underline{7,180} \\ 8,616 \end{array}$
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When one or both numbers in a multiplication problem have decimals, check to see how many digits are right of the decimal. Then, place the decimal point the same number of places to the left in the answer. Here's how the example above would change if it included decimals:

$\begin{array}{r} 35.9 \\ \times 0.24 \\ \hline 8.616 \end{array}$	$\begin{array}{r} 3.59 \\ \times 24 \\ \hline 86.16 \end{array}$
--	--

The first example has one digit to the right of the decimal in 35.9 and two more in 0.24, so the decimal point is placed three digits to the left in the answer: 8.616. The second example has two digits to the right of the decimal in 3.59 and none in 24, so the decimal point is placed two digits to the left in the answer: 86.16. (Notice that you do not have to line up the decimals in a multiplication problem.)

Directions: Solve the following problems.

1. Zoe wants to buy 3 T-shirts that cost \$15.99 each. How much will they cost altogether? _____
2. Ari is making \$8.50 an hour packing groceries. How much will he make in 8 hours? _____
3. Justin made 36 frozen smoothie pops and sold them all at the school carnival for \$0.75 each. How much would it cost to buy all 36 of them? _____
4. Last year, the carnival made \$467. This year it made 2.3 times as much. How much money did the carnival make this year? _____
5. Troy's car will go 21.8 miles on a gallon of gasoline. His motorcycle will go 1.7 times as far. How far will his motorcycle travel on one gallon of gas? _____

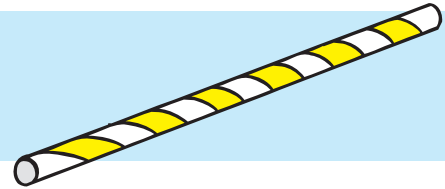


Multiplying Decimals

In some problems, you may need to add zeros in order to place the decimal point correctly.

Examples:

$\begin{array}{r} 0.34 \\ \times 0.08 \\ \hline 0.0272 \end{array}$	$\begin{array}{r} 0.0067 \\ \times \quad 4 \\ \hline 0.0268 \end{array}$	$\begin{array}{r} 0.046 \\ \times 0.07 \\ \hline 0.00322 \end{array}$
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Directions: Solve the following problems.

1.
$$\begin{array}{r} 0.15 \\ \times 0.02 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 0.67 \\ \times 0.08 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 7.3 \\ \times 0.06 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 3.59 \\ \times 0.08 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 0.061 \\ \times 0.014 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 7.10 \\ \times 0.042 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 5.05 \\ \times 0.08 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 8.75 \\ \times 0.067 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 0.0647 \\ \times 0.3 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 3.62 \\ \times 0.003 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 1.07 \\ \times 0.05 \\ \hline \end{array}$$

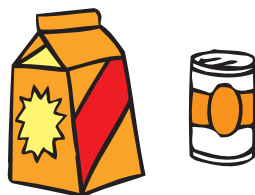
12.
$$\begin{array}{r} 3.03 \\ \times 0.07 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 0.02 \\ \times 0.02 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 0.501 \\ \times 0.03 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 0.321 \\ \times 0.09 \\ \hline \end{array}$$

16. The players and coaches gathered for refreshments after the soccer game. Of the 30 people there, 0.50 of them had energy drinks, 0.20 of them had fruit juice, and 0.30 of them had water. How many people had each type of drink?



energy drink _____

fruit juice _____

water _____

Dividing Decimals by Two-Digit Numbers

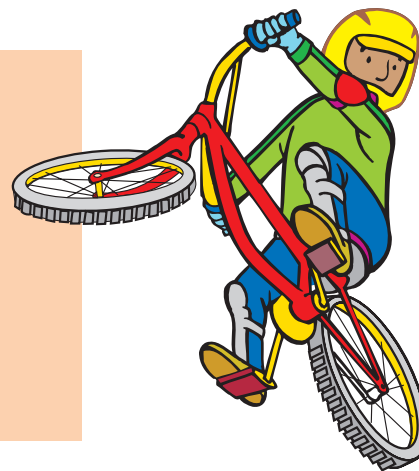
Dividing by a 2-digit divisor (34 in the example below) is very similar to dividing by a 1-digit divisor. In this example, 34 will divide into 78 twice. Then, multiply 34 x 2 to get 68. Subtract 68 from 78. The answer is 10, which is smaller than the divisor, so 2 was the right number. Now, bring down the next 8. 34 goes into 108 three times. Continue dividing as with a 1-digit divisor.

Example:

$$\begin{array}{r} 2 \\ 34 \overline{) 7,888} \\ \underline{68} \\ 10 \end{array}$$

$$\begin{array}{r} 23 \\ 34 \overline{) 7,888} \\ \underline{68} \\ 108 \\ \underline{102} \\ 6 \end{array}$$

$$\begin{array}{r} 232 \\ 34 \overline{) 7,888} \\ \underline{68} \\ 108 \\ \underline{102} \\ 68 \\ \underline{68} \\ 0 \end{array}$$



To check your division, multiply: $34 \times 232 = 7,888$.

When the dividend has a decimal, place the decimal point for the answer directly above the decimal point in the dividend.

Examples:

$$14 \overline{) 50.4} \quad 3.6$$

$$34 \overline{) 303.28} \quad 8.92$$

Directions: Solve the following problems.

1. $56 \overline{) 7.28}$ 2. $23 \overline{) 18.63}$ 3. $62 \overline{) 255.44}$ 4. $71 \overline{) 82.36}$ 5. $4 \overline{) 8.580}$

6. If socks cost \$8.97 for 3 pairs, how much does one pair cost? _____
7. If granola bars are 6 for \$2.58, how much is one granola bar? _____
8. You buy a bike for \$152.25 and agree to make 21 equal payments. How much will each payment be? _____
9. You and two friends agree to spend several hours loading a truck. The truck driver gives you \$66.75 to share. How much will each person get? _____
10. You buy 14 sandwiches, and the bill comes to \$32.06. How much did each sandwich cost? _____

Dividing with Zeros

Sometimes you have a remainder in division problems. You can add a decimal point and zeros to the dividend and keep dividing until you have the answer.

Example:

$$\begin{array}{r} 49 \\ 25 \overline{)1,241} \\ \underline{100} \\ 241 \\ \underline{225} \\ 16 \end{array}$$

$$\begin{array}{r} 49.64 \\ 25 \overline{)1,241.00} \\ \underline{100} \\ 241 \\ \underline{225} \\ 160 \\ \underline{150} \\ 100 \\ \underline{100} \\ 0 \end{array}$$



Directions: Solve the following problems.

1. $2 \overline{)2.5}$

2. $4 \overline{)115}$

3. $12 \overline{)738}$

4. $8 \overline{)586}$

5. $25 \overline{)3,415}$

6. Amelia's grandparents sent her a check for \$130 to share with her 7 brothers and sisters. How much will each of the 8 children get if the money is divided evenly?

7. A vendor had 396 balloons to sell and 16 workers. How many balloons should each worker sell in order to sell out?

8. Eight of the workers turned in a total of \$754. How much did each worker collect if he or she sold the same number of items?

9. A total of 744 tickets were collected from 15 amusement ride operators on the first day of the fair. If each ride required one ticket per person, and they each collected the same number of tickets, how many people rode each ride?

Do you think that was possible? Why? _____

10. Five people were hired to clean up the area after the fair closed. They turned in a bill for 26 hours of labor. How many hours did each person work?

Dividing Decimals by Decimals

When a divisor has a decimal, eliminate it before dividing. If there is one digit right of the decimal in the divisor, multiply the divisor and dividend by 10. If there are two digits right of the decimal in the divisor, multiply the divisor and dividend by 100.

Multiply the divisor and dividend by the same number whether or not the dividend has a decimal. The goal is to have a divisor with no decimal.

Examples: $2.3 \overline{)89} \times 10 = 23 \overline{)890}$ $4.11 \overline{)67.7} \times 100 = 411 \overline{)6,770}$
 $4.9 \overline{)35.67} \times 10 = 49 \overline{)356.7}$ $0.34 \overline{)789} \times 100 = 34 \overline{)78,900}$

After removing the decimal from the divisor, solve the problem in the usual way.

Directions: Solve the following problems.

1. $3.5 \overline{)10.15}$

2. $6.7 \overline{)415.4}$

3. $0.21 \overline{)924}$

4. $73 \overline{)50.37}$

5. If a car travels 1066.8 miles in 16.8 hours, what is the average speed in miles per hour the car travels? _____

6. Mrs. Gutierrez plans to make chili on Friday night. She bought 1.5 lbs. of ground chicken for \$8.63. How much does the chicken cost per pound? _____

7. Aiden spent a total of \$18.75 on rides at the fair. If each ticket cost \$1.25, how many rides did he go on? _____

8. Mr. Washington bought 13.8 gallons of gas for \$39.61. What was the price of gas per gallon that day? _____

Decimals and Fractions

A **fraction** is a number that names part of something. The top number in a fraction is called the **numerator**. The bottom number is called the **denominator**. Since a decimal also names part of a whole number, every decimal can also be written as a fraction. For example, 0.1 is read as "one tenth" and can also be written $\frac{1}{10}$. The decimal 0.56 is read as "fifty-six hundredths" and can also be written $\frac{56}{100}$.

Examples:

$$0.7 = \frac{7}{10} \quad 0.34 = \frac{34}{100} \quad 0.761 = \frac{761}{1,000} \quad \frac{5}{10} = 0.5 \quad \frac{58}{100} = 0.58 \quad \frac{729}{1,000} = 0.729$$

Even a fraction that doesn't have 10, 100, or 1,000 as the denominator can be written as a decimal. Sometimes you can multiply both the numerator and denominator by a certain number so the denominator is 10, 100, or 1,000. (You can't just multiply the denominator. That would change the amount of the fraction.)

Examples:

$$\frac{3}{5} \times \frac{2}{2} = \frac{6}{10} = 0.6 \qquad \frac{4}{25} \times \frac{4}{4} = \frac{16}{100} = 0.16$$

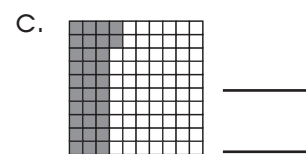
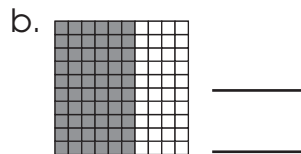
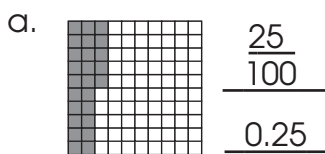
Other times, divide the numerator by the denominator.

Examples:

$$\frac{3}{4} = 4 \overline{)3.00} = 0.75 \qquad \frac{5}{8} = 8 \overline{)5.000} = 0.625$$

Directions: Follow the instructions below.

1. For each square, write a decimal and a fraction to show the part that is colored. The first one has been done for you.



2. Change these decimals to fractions.

a. $0.6 =$ b. $0.54 =$ c. $0.751 =$ d. $0.73 =$ e. $0.592 =$ f. $0.2 =$

3. Change these fractions to decimals. If necessary, round the decimals to the nearest hundredth.

a. $\frac{3}{10} =$ b. $\frac{89}{100} =$ c. $\frac{473}{1,000} =$ d. $\frac{4}{5} =$ e. $\frac{35}{50} =$
f. $\frac{7}{9} =$ g. $\frac{1}{3} =$ h. $\frac{23}{77} =$ i. $\frac{12}{63} =$ j. $\frac{4}{16} =$

Equivalent Fractions and the Lowest Term

Equivalent fractions name the same amount. For example, $\frac{1}{2}$, $\frac{5}{10}$, and $\frac{50}{100}$ are exactly the same amount. They all mean half of something. (And they are all written as the same decimal: 0.5.) To find an equivalent fraction, multiply the numerator and denominator of any fraction by the same number.

Examples: $\frac{3}{4} \times 3 = \frac{9}{12}$ $\frac{9}{12} \times 4 = \frac{36}{48}$ Thus, $\frac{3}{4}$, $\frac{9}{12}$ and $\frac{36}{48}$ are all equivalent fractions.

Most of the time, we want fractions in their lowest terms. It's easier to work with $\frac{3}{4}$ than $\frac{36}{48}$. To find a fraction's lowest term, instead of multiplying both parts of a fraction by the same number, divide.

Examples: $\frac{36}{48} \div 12 = \frac{3}{4}$ The lowest term for $\frac{36}{48}$ is $\frac{3}{4}$.

If the numerator and denominator in a fraction can't be divided by any number, the fraction is in its lowest term. The fractions below are in their lowest terms.

Examples: $\frac{34}{61}$ $\frac{3}{5}$ $\frac{7}{9}$ $\frac{53}{90}$ $\frac{78}{83}$ $\frac{3}{8}$

Directions: Follow the instructions below.

1. Write two equivalent fractions for each fraction. Make sure you multiply the numerator and denominator by the same number. The first one is done for you.

- | | |
|---|---|
| <p>a. $\frac{1}{2} \times 3 = \frac{3}{6}$ $\frac{1}{2} \times 4 = \frac{4}{8}$</p> | <p>b. $\frac{2}{3} \times \underline{\quad} = \underline{\quad}$ $\frac{2}{3} \times \underline{\quad} = \underline{\quad}$</p> <p> $\frac{2}{3} \times \underline{\quad} = \underline{\quad}$ $\frac{2}{3} \times \underline{\quad} = \underline{\quad}$</p> |
| <p>c. $\frac{3}{5} \times \underline{\quad} = \underline{\quad}$ $\frac{3}{5} \times \underline{\quad} = \underline{\quad}$</p> <p> $\frac{3}{5} \times \underline{\quad} = \underline{\quad}$ $\frac{3}{5} \times \underline{\quad} = \underline{\quad}$</p> | <p>d. $\frac{8}{9} \times \underline{\quad} = \underline{\quad}$ $\frac{8}{9} \times \underline{\quad} = \underline{\quad}$</p> <p> $\frac{8}{9} \times \underline{\quad} = \underline{\quad}$ $\frac{8}{9} \times \underline{\quad} = \underline{\quad}$</p> |

2. Find the lowest terms for each fraction. Make sure your answers can't be divided by any other numbers. The first one has been done for you.

- | | | |
|---|---|---|
| <p>a. $\frac{2}{36} \div 2 = \frac{1}{18}$</p> | <p>b. $\frac{12}{25} \div \underline{\quad} = \underline{\quad}$</p> <p> $\frac{12}{25} \div \underline{\quad} = \underline{\quad}$</p> | <p>c. $\frac{12}{16} \div \underline{\quad} = \underline{\quad}$</p> <p> $\frac{12}{16} \div \underline{\quad} = \underline{\quad}$</p> |
| <p>d. $\frac{3}{9} \div \underline{\quad} = \underline{\quad}$</p> <p> $\frac{3}{9} \div \underline{\quad} = \underline{\quad}$</p> | <p>e. $\frac{25}{45} \div \underline{\quad} = \underline{\quad}$</p> <p> $\frac{25}{45} \div \underline{\quad} = \underline{\quad}$</p> | <p>f. $\frac{11}{44} \div \underline{\quad} = \underline{\quad}$</p> <p> $\frac{11}{44} \div \underline{\quad} = \underline{\quad}$</p> |

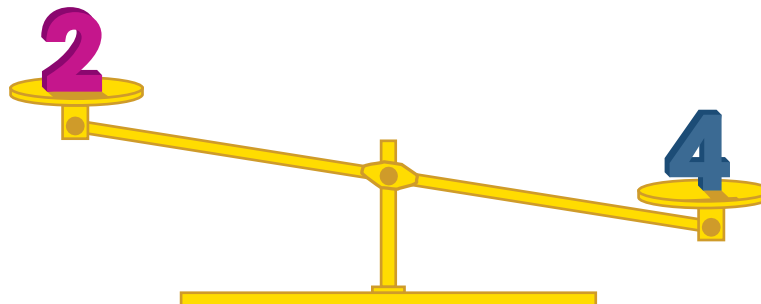
Greatest Common Factor

The **greatest common factor (GCF)** is the largest number that will divide evenly into a set of numbers. In the example, both numbers can be divided evenly by 2 and 4; therefore, 4 is the greatest common factor.

Example: 12 and 20 2, 4 (can be divided evenly into both numbers)
4 (greatest common factor)

Directions: Circle the greatest common factor for each pair of numbers.

- | | | | | |
|----------------|----|----|----|----|
| 1. 56 and 72 | 6 | 10 | 8 | 2 |
| 2. 45 and 81 | 7 | 5 | 9 | 3 |
| 3. 28 and 49 | 7 | 11 | 4 | 6 |
| 4. 10 and 35 | 3 | 5 | 9 | 7 |
| 5. 42 and 30 | 4 | 2 | 5 | 6 |
| 6. 121 and 33 | 12 | 9 | 4 | 11 |
| 7. 96 and 48 | 48 | 15 | 6 | 3 |
| 8. 12 and 132 | 2 | 10 | 12 | 9 |
| 9. 108 and 27 | 14 | 9 | 3 | 27 |
| 10. 44 and 32 | 4 | 6 | 8 | 10 |
| 11. 16 and 88 | 12 | 2 | 8 | 5 |
| 12. 72 and 144 | 9 | 11 | 7 | 72 |



Least Common Multiple

The **least common multiple (LCM)** is the lowest possible multiple any pair of numbers have in common.

Examples: 2 and 4

The lowest common multiple is 4, because 4 is a multiple for each number and it is the lowest possible.

6 and 7

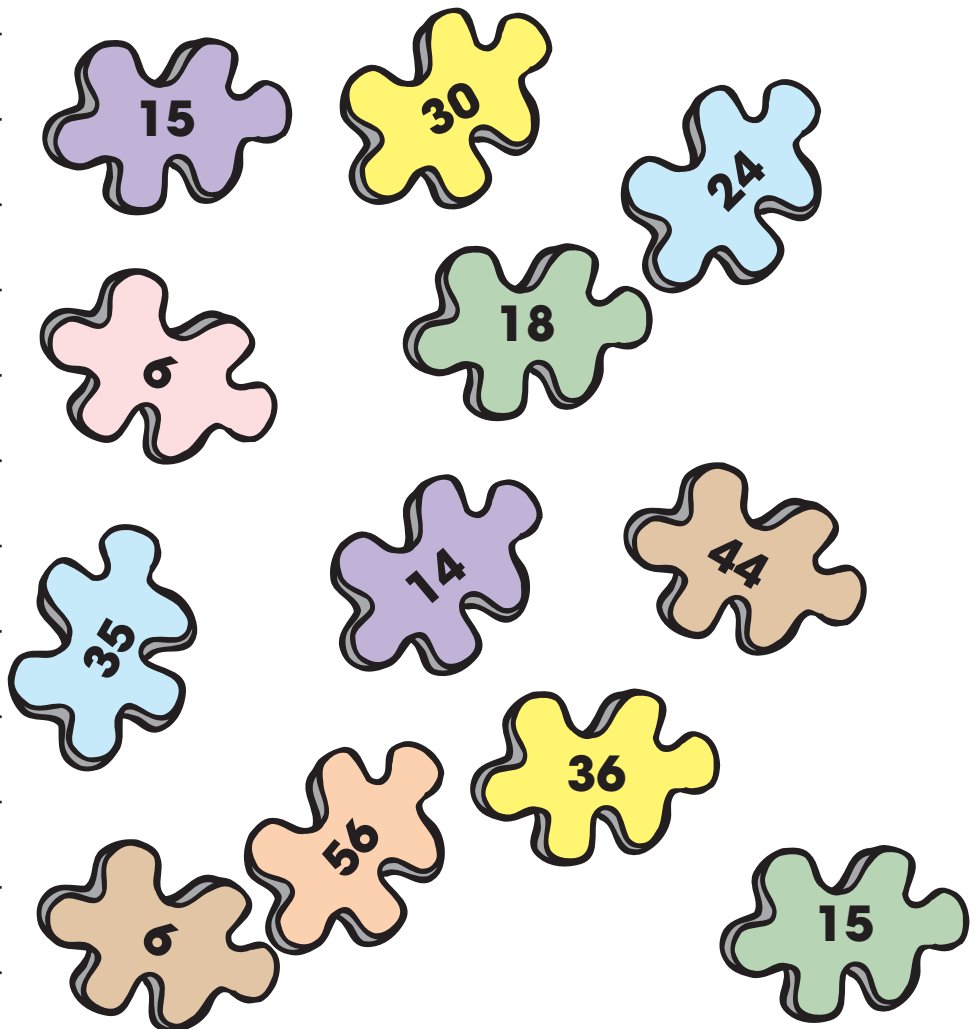
Multiples of 6 are 6, 12, 18, 24, 30, 36, 42.

Multiples of 7 are 7, 14, 21, 28, 35, 42.

42 is the lowest multiple that 6 and 7 have in common.

Directions: Find the least common multiple for each pair of numbers.

1. 7 and 8 = _____
2. 2 and 3 = _____
3. 11 and 4 = _____
4. 5 and 3 = _____
5. 7 and 2 = _____
6. 9 and 4 = _____
7. 2 and 6 = _____
8. 10 and 3 = _____
9. 7 and 5 = _____
10. 9 and 6 = _____
11. 12 and 8 = _____
12. 15 and 3 = _____



Comparing Decimals and Fractions

The symbol $>$ means "greater than." The number on its left is greater than that on its right. The symbol $<$ means "less than." The number on its left is less than that on its right. An equal sign, $=$, shows the same value on each side.

Directions: Use the sign $>$, $=$ or $<$ to make each statement true.



1. 0.4 $\frac{2}{3}$

2. 1.25 $\frac{3}{2}$

3. 0.7 $\frac{4}{5}$

4. 0.68 $\frac{5}{7}$

5. 0.1 $\frac{1}{12}$

6. 0.45 $\frac{1}{2}$



7. 0.75 $\frac{3}{8}$

8. 0.6 $\frac{5}{8}$

9. 0.54 $\frac{2}{5}$

10. 0.8 $\frac{4}{6}$

11. 0.25 $\frac{1}{7}$

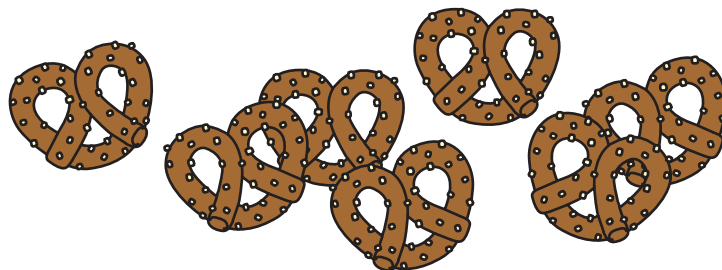
12. 1.8 $\frac{12}{7}$

13. 0.625 $\frac{4}{8}$

14. 0.33 $\frac{1}{3}$



15. Jenna looked carefully at the labels on two different types of pretzels. The pretzel rods had $\frac{3}{4}$ pound in the package. The package of mini pretzels claimed it had 0.67 pounds of pretzels inside. Were the pretzel rods $<$, $>$, or $=$ to the mini pretzels?



Mixed Numbers and Improper Fractions

A **mixed number** is a whole number and a fraction, such as $1\frac{3}{4}$. An **improper fraction** has a numerator that is larger than its denominator, such as $\frac{16}{3}$. To write an improper fraction as a mixed number, divide the numerator by the denominator. The quotient becomes the whole number, and the remainder becomes the fraction.

Examples:

$$\frac{16}{3} = 3 \overline{)16} = 5\frac{1}{3}$$

$$\frac{28}{5} = 5 \overline{)28} = 5\frac{3}{5}$$



To change a mixed number into an improper fraction, multiply the whole number by the denominator and add the numerator.

Examples:

$$4\frac{1}{3} = 4 \times 3 = 12 + 1 = 13 \quad \frac{13}{3}$$

$$8\frac{4}{7} = 8 \times 7 = 56 + 4 = 60 \quad \frac{60}{7}$$

Directions: Follow the instructions below.

1. Change the improper fractions to mixed numbers, and reduce to lowest terms. Use another sheet of paper if necessary. The first one has been done for you.

a. $\frac{34}{6} = 6 \overline{)34} = 5\frac{4}{6} = 5\frac{2}{3}$

b. $\frac{65}{4} =$

c. $\frac{23}{8} =$

d. $\frac{89}{3} =$

e. $\frac{45}{9} =$

f. $\frac{32}{5} =$

g. $\frac{13}{7} =$

h. $\frac{24}{9} =$

i. $\frac{31}{2} =$

j. $\frac{84}{23} =$

2. Change these mixed numbers into improper fractions. The first one has been done for you.

a. $4\frac{6}{7} = 4 \times 7 = 28 + 6 = \frac{34}{7}$

b. $2\frac{1}{9} =$

c. $5\frac{4}{5} =$

d. $12\frac{1}{4} =$

e. $6\frac{7}{8} =$

f. $3\frac{9}{11} =$

g. $8\frac{3}{12} =$

h. $1\frac{6}{14} =$

i. $4\frac{2}{3} =$

j. $9\frac{4}{15} =$

Adding Fractions

When adding fractions, if the denominators are the same, simply add the numerators. When the result is an improper fraction, change it to a mixed number.

Examples: $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ $\frac{3}{9} + \frac{7}{9} = \frac{10}{9} = 1\frac{1}{9}$

If the denominators of fractions are different, change them so they are the same. To do this, find equivalent fractions. In the first example below, $\frac{1}{4}$ and $\frac{3}{8}$ have different denominators, so change $\frac{1}{4}$ to the equivalent fraction $\frac{2}{8}$. Then, add the numerators. In the second example, $\frac{5}{7}$ and $\frac{2}{3}$ also have different denominators. Find a denominator both 7 and 3 divide into. The lowest number they both divide into is 21. Multiply the numerator and denominator of $\frac{5}{7}$ by 3 to get the equivalent fraction $\frac{15}{21}$. Then, multiply the numerator and denominator of $\frac{2}{3}$ by 7 to get the equivalent fraction $\frac{14}{21}$.

Examples:

$\begin{array}{r} \frac{1}{4} \times 2 = \frac{2}{8} \\ \frac{3}{8} \\ + \frac{2}{8} \\ \hline \frac{5}{8} \end{array}$	$\begin{array}{r} \frac{5}{7} \times 3 = \frac{15}{21} \\ \frac{2}{3} \times 7 = \frac{14}{21} \\ + \frac{15}{21} + \frac{14}{21} = \frac{29}{21} \\ \hline \frac{29}{21} = 1\frac{8}{21} \end{array}$
---	--



Directions: Solve the following problems. Find equivalent fractions when necessary.

1. $\frac{3}{5}$	2. $\frac{7}{8}$	3. $\frac{1}{9}$	4. $\frac{2}{6}$	5. $\frac{2}{15}$
$\frac{1}{5}$	$\frac{2}{16}$	$\frac{2}{9}$	$\frac{2}{6}$	$\frac{1}{15}$
$+ \frac{1}{5}$	$+ \frac{2}{16}$	$+ \frac{2}{9}$	$+ \frac{2}{6}$	$+ \frac{1}{15}$


6. Cora is making some soup. She needs $\frac{1}{2}$ cup diced yellow onion and $\frac{1}{4}$ cup chopped green onion. How much onion does she need altogether? _____
7. Henry is painting a wall. Yesterday, he painted $\frac{1}{3}$ of it. Today, he painted $\frac{1}{4}$ of it. How much has he painted altogether? _____
8. Zahra ate $\frac{1}{6}$ of a pie. Her father ate $\frac{1}{4}$ of it. How much did they eat altogether? _____

Subtracting Fractions

Subtracting fractions is very similar to adding them, in that the denominators must be the same. If the denominators are different, use equivalent fractions.

Examples:

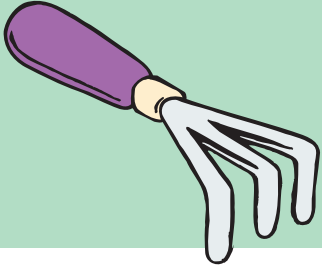
$\frac{3}{4}$	$\frac{2 \times 8}{5 \times 8} = \frac{16}{40}$
$-\frac{1}{4}$	$\frac{1 \times 5}{-8 \times 5} = \frac{5}{40}$
$\frac{2}{4} = \frac{1}{2}$	$\frac{11}{40}$



Adding and subtracting mixed numbers are also similar. Often, though, change the mixed numbers to improper fractions. If the denominators are different, use equivalent fractions.

Examples:

$2\frac{3}{5} = \frac{13}{5}$	$3\frac{3}{14} = \frac{45}{14} = \frac{45}{14}$
$-1\frac{4}{5} = \frac{9}{5}$	$-2\frac{1}{7} = \frac{15}{7} \times 2 = \frac{30}{7}$
$\frac{4}{5}$	$\frac{15}{14} = 1\frac{1}{14}$



Directions: Solve the following problems. Use equivalent fractions and improper fractions where necessary.

- | | | | | |
|------------------|-------------------|-------------------|------------------|-------------------|
| 1. $\frac{6}{7}$ | 2. $1\frac{2}{9}$ | 3. $2\frac{3}{6}$ | 4. $\frac{3}{4}$ | 5. $2\frac{1}{3}$ |
| $-\frac{5}{7}$ | $-\frac{4}{9}$ | $-\frac{4}{5}$ | $-\frac{1}{2}$ | $-\frac{3}{4}$ |

6. Leah promised to weed the flower garden for $1\frac{1}{2}$ hours this morning. So far she has pulled weeds for $\frac{3}{4}$ of an hour. How much longer does she have to work? _____
7. Vijay started out with $1\frac{1}{4}$ gallons of paint. He used $\frac{3}{8}$ gallon of the paint on his boat. How much paint is left? _____
8. A certain movie lasts $2\frac{1}{2}$ hours. Tess has already watched it for $1\frac{2}{3}$ hours. How much longer is the movie? _____
9. Nico didn't finish $\frac{1}{8}$ of the math problems on a test. He made mistakes on $\frac{1}{6}$ of the problems. The rest he answered correctly. What fraction of the problems did he answer correctly? _____

Multiplying Fractions

To multiply two fractions, multiply the numerators, and then multiply the denominators. If necessary, change the answer to its lowest term.

Examples: $\frac{3}{4} \times \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$ $\frac{1}{8} \times \frac{4}{5} = \frac{4}{40} = \frac{1}{10}$

To multiply a whole number by a fraction, first write the whole number as a fraction (with 1 as the denominator). Then, multiply as above. You may need to change an improper fraction to a mixed number.



Examples: $\frac{2}{3} \times \frac{4}{1} = \frac{8}{3} = 2\frac{2}{3}$ $\frac{3}{7} \times \frac{6}{1} = \frac{18}{7} = 2\frac{4}{7}$

Directions: Solve the following problems, writing answers in their lowest terms.

1. $\frac{1}{5} \times \frac{2}{3} =$ 2. $\frac{1}{3} \times \frac{4}{7} =$ 3. $\frac{2}{8} \times 3 =$ 4. $\frac{2}{6} \times \frac{1}{2} =$

5. Tim lost $\frac{1}{8}$ of his marbles. If he had 56 marbles, how many did he lose? _____

6. Drew is making $\frac{2}{3}$ of a recipe for spaghetti sauce. How much will he need of each ingredient below?

$1\frac{1}{4}$ cups water = _____ 2 cups tomato paste = _____

$\frac{3}{4}$ teaspoon oregano = _____ $4\frac{1}{2}$ teaspoons salt = _____

7. Carrie bought 2 dozen bagels and asked for $\frac{3}{4}$ of them to be honey grain. How many were honey grain? _____

8. Sofia let her hair grow 14 inches long and then had $\frac{1}{4}$ of it cut off. How much was cut off? _____

9. Ethan has finished $\frac{7}{8}$ of 40 math problems. How many has he done? _____

10. If Jaya's cat eats $\frac{2}{3}$ can of cat food every day, how many cans should Jaya buy for a week? _____

Dividing Fractions

Reciprocals are two fractions that, when multiplied together, make 1. To divide a fraction by a fraction, turn one of the fractions upside down and multiply. The upside-down fraction is a reciprocal of its original fraction. If you multiply a fraction by its reciprocal, you always get 1.

Examples of reciprocals: $\frac{2}{3} \times \frac{3}{2} = \frac{6}{6} = 1$ $\frac{9}{11} \times \frac{11}{9} = \frac{99}{99} = 1$

Examples of dividing by fractions: $\frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$ $\frac{2}{5} \div \frac{2}{7} = \frac{2}{5} \times \frac{7}{2} = \frac{14}{10} = \frac{7}{5} = 1\frac{2}{5}$

To divide a whole number by a fraction, first write the whole number as a fraction with a denominator of 1. (Write a mixed number as an improper fraction.) Then, finish the problem as explained above.

Examples: $4 \div \frac{2}{6} = \frac{4}{1} \times \frac{6}{2} = \frac{24}{2} = 12$ $3\frac{1}{2} \div \frac{2}{5} = \frac{7}{2} \times \frac{5}{2} = \frac{35}{4} = 8\frac{3}{4}$

Directions: Solve the following problems, writing answers in their lowest terms. Change any improper fractions to mixed numbers.

1. $\frac{1}{3} \div \frac{2}{5} =$ 2. $\frac{6}{7} \div \frac{1}{3} =$ 3. $3 \div \frac{3}{4} =$ 4. $\frac{1}{4} \div \frac{2}{3} =$

5. Judy has 8 candy bars. She wants to give $\frac{1}{3}$ of a candy bar to everyone in her class. Does she have enough for all 24 students? _____

6. A big jar of glue holds $3\frac{1}{2}$ cups. How many little containers that hold $\frac{1}{4}$ cup each can you fill? _____

7. A container holds 27 ounces of frozen yogurt. How many $4\frac{1}{2}$ -ounce servings is that? _____

8. It takes $2\frac{1}{2}$ teaspoons of powdered mix to make 1 cup of hot chocolate. How many cups can you make with 45 teaspoons of mix? _____

9. Each cup of hot chocolate also takes $\frac{2}{3}$ cup of milk. How many cups of hot chocolate can you make with 12 cups of milk? _____

Review



Directions: Follow the instructions below.

- Write each of these decimals as fractions
 - $0.43 =$
 - $0.6 =$
 - $0.783 =$
 - $0.91 =$
- Write each of these fractions as decimals, rounding them to the nearest hundredth
 - $\frac{3}{10} =$
 - $\frac{4}{7} =$
 - $\frac{3}{9} =$
 - $\frac{64}{100} =$
- Write two equivalent fractions for each of these
 - $\frac{2}{6} =$
 - $\frac{1}{4} =$
 - $\frac{5}{8} =$
- Change these fractions into their lowest terms
 - $\frac{4}{16} =$
 - $\frac{6}{18} =$
 - $\frac{5}{90} =$
 - $\frac{9}{24} =$
- Change these improper fractions into mixed numbers
 - $\frac{30}{9} =$
 - $\frac{46}{3} =$
 - $\frac{38}{6} =$
 - $\frac{18}{4} =$
- Change these mixed numbers into improper fractions
 - $3\frac{1}{6} =$
 - $7\frac{3}{8} =$
 - $4\frac{2}{7} =$
 - $8\frac{1}{9} =$
- George has written $1\frac{1}{8}$ pages of a report that is supposed to be $3\frac{1}{2}$ pages long. How much more does he have to write? _____
- Mira ate $\frac{3}{8}$ of half a pizza. How much of the whole pizza did she eat? _____
- Alexa's family is driving to Los Angeles. They drove $\frac{1}{6}$ of the way the first day and $\frac{1}{5}$ of the way the second day. How much of the trip have they completed so far? _____
- Antonio gets \$6 a week for his allowance. He saved $\frac{1}{2}$ of it last week and $\frac{1}{3}$ of it this week. How much money did he save in these 2 weeks? _____
- Of 32 students in one class, $\frac{5}{8}$ have a brother or sister. How many students are only children? _____
- In one class, $\frac{1}{5}$ of the students were born in January, $\frac{1}{10}$ in February, and $\frac{1}{10}$ in March. How much of the class was born in these 3 months? _____

Review

Directions: Follow the instructions below.

Add.

1. $\frac{4}{16} + \frac{5}{8} =$

2. $\frac{1}{6} + \frac{1}{3} =$

3. $\frac{2}{10} + \frac{4}{5} =$

4. $\frac{3}{5} + \frac{9}{10} =$

Subtract.

1. $\frac{15}{9} - \frac{2}{3} =$

2. $\frac{3}{4} - \frac{3}{8} =$

3. $\frac{4}{7} - \frac{2}{14} =$

4. $\frac{3}{5} - \frac{1}{10} =$

Multiply.

1. $\frac{1}{2} \times \frac{4}{16} =$

2. $\frac{1}{3} \times \frac{4}{9} =$

3. $\frac{5}{12} \times \frac{1}{4} =$

4. $\frac{3}{16} \times \frac{3}{4} =$

Divide.

1. $\frac{3}{5} \div \frac{1}{3} =$

2. $4 \div \frac{1}{2} =$

3. $\frac{1}{4} \div \frac{1}{3} =$

4. $3\frac{3}{4} \div \frac{1}{3} =$

Write >, <, or = to make the statements true.

1. $0.5 \bigcirc \frac{5}{8}$

2. $0.8 \bigcirc \frac{4}{5}$

3. $0.35 \bigcirc \frac{2}{5}$

4. $1.3 \bigcirc \frac{7}{8}$



Trial and Error

Often, the quickest way to solve a problem is to make a logical guess, and test it to see if it works. The first guess, or trial, will probably not be the correct answer—but it should help you figure out a better, more reasonable guess.



Directions: Use trial and error to find the solutions to these problems.

1. Mr. McFerron is between 30 and 50 years old. The sum of the digits in his age is 11. His age is an even number. How old is Mr. McFerron?

2. The key for number 5 does not work on Carson's calculator. How can he use his broken calculator to subtract 108 from 351?

3. Tasha likes to swim a certain number of miles each day for 3 days straight. Then, she increases her mileage by 1 for the next 3 days, and so on. Over a 9-day period, Tasha swims a total of 27 miles. She swims equal mileage Monday, Tuesday, and Wednesday. She swims another amount on Thursday, Friday, and Saturday. She swims yet a third amount on Sunday, Monday, and Tuesday. How many miles does Tasha swim each day?

_____	Monday	_____	Tuesday	_____	Wednesday
_____	Thursday	_____	Friday	_____	Saturday
_____	Sunday	_____	Monday	_____	Tuesday

Trial and Error

Directions: Use trial and error to complete each diagram so all the equations work.

Example:

$$\underline{6}, \underline{7} \begin{cases} + \rightarrow \underline{13} \\ \times \rightarrow \underline{42} \end{cases}$$

$$\underline{\quad}, \underline{4} \begin{cases} + \rightarrow \underline{\quad} \\ \times \rightarrow \underline{28} \end{cases}$$

$$\underline{4}, \underline{\quad} \begin{cases} + \rightarrow \underline{12} \\ \times \rightarrow \underline{\quad} \end{cases}$$

$$\underline{\quad}, \underline{\quad} \begin{cases} + \rightarrow \underline{8} \\ \times \rightarrow \underline{16} \end{cases}$$

$$\underline{7}, \underline{\quad} \begin{cases} + \rightarrow \underline{7} \\ \times \rightarrow \underline{\quad} \end{cases}$$

$$\underline{\quad}, \underline{\quad} \begin{cases} + \rightarrow \underline{15} \\ \times \rightarrow \underline{56} \end{cases}$$

$$\underline{\quad}, \underline{9} \begin{cases} + \rightarrow \underline{17} \\ \times \rightarrow \underline{\quad} \end{cases}$$

$$\underline{\quad}, \underline{9} \begin{cases} + \rightarrow \underline{\quad} \\ \times \rightarrow \underline{54} \end{cases}$$

$$\underline{\quad}, \underline{16} \begin{cases} + \rightarrow \underline{31} \\ \times \rightarrow \underline{\quad} \end{cases}$$

$$\underline{\quad}, \underline{\quad} \begin{cases} + \rightarrow \underline{11} \\ \times \rightarrow \underline{10} \end{cases}$$

$$\underline{\quad}, \underline{\quad} \begin{cases} + \rightarrow \underline{101} \\ \times \rightarrow \underline{100} \end{cases}$$

Choosing a Method

This table explains different methods of computation that can be used to solve a problem.

Method		
Mental Math	– Calculating in your head.	– Use with small numbers, memorized facts, and multiples of tens, hundreds, thousands, and so on.
Objects/Diagram	– Drawing or using an object to represent the problem.	– Use to model the situation.
Pencil and Paper	– Calculating the answer on paper.	– Use when a calculator is not available and the problem is too difficult to solve mentally.
Calculator	– Using a calculator or computer to find the solution.	– Use with large numbers or for a quick answer.
Trial and Error	– Making a guess at the answer and trying to see if it works.	– Use when unsure what to do or if none of the methods above work.

Directions: Circle the method of computation that seems best for solving each problem. Then, solve the problem.

- The School Days Fun Fair has 38 booths and 23 games. How many booths and games total are in the fair?
 - Paper and Pencil
 - Objects/Diagram
 Answer: _____
- The lemonade stand was stocked with 230 cups. On the first day, 147 drinks were sold. How many cups were left?
 - Objects/Diagram
 - Paper and Pencil
 Answer: _____
- There are 3 cars in the tram to transport people from the parking lot to the fair. Each car can seat 9 people. How many people can ride the tram at one time?
 - Objects/Diagram
 - Trial and Error
 Answer: _____

Choosing a Method

Directions: Write what method you will use for each problem. Then, find the answer.

1. Jenna receives an allowance of \$3.50 a week. This week, her mother paid her in nickels, dimes, and quarters. She received more dimes than quarters. How many of each coin did her mom use to pay her?

Method: _____

Answer: _____

2. You are buying your lunch at school. There are 4 people in front of you and 7 people behind you. How many people are standing in line? (Hint: it's not 11 people.)

Method: _____

Answer: _____

3. A runner can run 1 mile in 12 minutes. He ran for 30 minutes today. How far did he run?

Method: _____

Answer: _____

4. A family of four goes out to dinner. They decide to order a 16-piece pizza. Each person likes something different on his or her pizza, but each will eat equal amounts. Maria likes pepperoni and sausage, Tony likes ham and pineapple, Mom likes cheese only, and Dad likes mushrooms. Maria is allergic to mushrooms, so her slices can't be next to Dad's. Mom detests pineapple, so her slices can't be next to Tony's. How will the restaurant arrange their pizza?

Method: _____

Answer: _____

5. The Petting Zoo has 72 animals in aquariums, 32 animals in cages, and 57 animals fenced in. How many animals does the Petting Zoo have?

Method: _____

Answer: _____

Multi-Step Problems

Some problems take more than one step to solve. First, plan each step needed to find the solution. Then, solve each part to find the answer.

Example: Tickets for a bargain matinee cost \$4 for adults and \$3 for children. How much would tickets cost for a family of 2 adults and 3 children?

Step 1: Find the cost of the adults' tickets.

2	x	\$4	=	\$8
adults		each ticket		total
3	x	\$3	=	\$9
children		each ticket		total
\$8	+	\$9	=	\$17
adults		children		total

Step 2: Find the cost of the children's tickets.

Step 3: Add to find the sum of the tickets.

The tickets cost \$17 total.

Directions: Write the operations you will use to solve each problem. Then, find the answer.

- Arden and her father are riding their bikes 57 miles to Arden's grandma's house. They ride 13 miles and then take a water break. Then, they ride 15 miles to a rest area for a picnic lunch. How many miles do Arden and her father have left to ride after lunch?

Operations: _____

Answer: _____

- A triathlete bikes 15 miles at 20 miles per hour, runs 5 miles at 6 miles per hour, and swims 1 mile at 4 miles per hour. How long does the triathlon take her to complete?

Operations: _____

Answer: _____

- Ray bought strawberries for \$1.99, blueberries for \$1.40, and 2 pints of raspberries for \$1.25 per pint. How much did Ray spend on berries?

Operations: _____

Answer: _____

Hidden Questions

When solving a story problem, you may find that some information you want is not stated in the problem. You must ask yourself what information you need and decide how you can use the data in the problem to find this information. The problem contains a hidden question to find before you can solve it.

Example: Chris and his mother are building a birdhouse. He buys 4 pieces of wood for \$2.20 each. How much change should he get back from \$10?

Step 1: Find the hidden question:

What is the total cost of the wood? $\$2.20 \times 4 = \8.80

Step 2: Use your answer to the hidden question to solve the problem.

$\$10.00 - \$8.80 = \$1.20$



Directions: Write the hidden questions. Then, solve the problems.

- Chris used 3 nails to attach each board to the frame. After nailing 6 boards, he had 1 nail left. How many nails did Chris have before he started?

Hidden Question: _____

Answer: _____

- Chris sawed a 72-inch post into 3 pieces. Two of the pieces were each 20 inches long. How long was the third piece?

Hidden Question: _____

Answer: _____

- It took Chris and his mom 15 hours to make a birdhouse. They thought it would take 3 days. How many hours early did they complete the job?

Hidden Question: _____

Answer: _____

- It takes Chris 15 hours to make a birdhouse and 9 hours to make a birdfeeder. He worked for 42 hours and made 1 birdhouse and some birdfeeders. How many birdfeeders did Chris make?

Hidden Question: _____

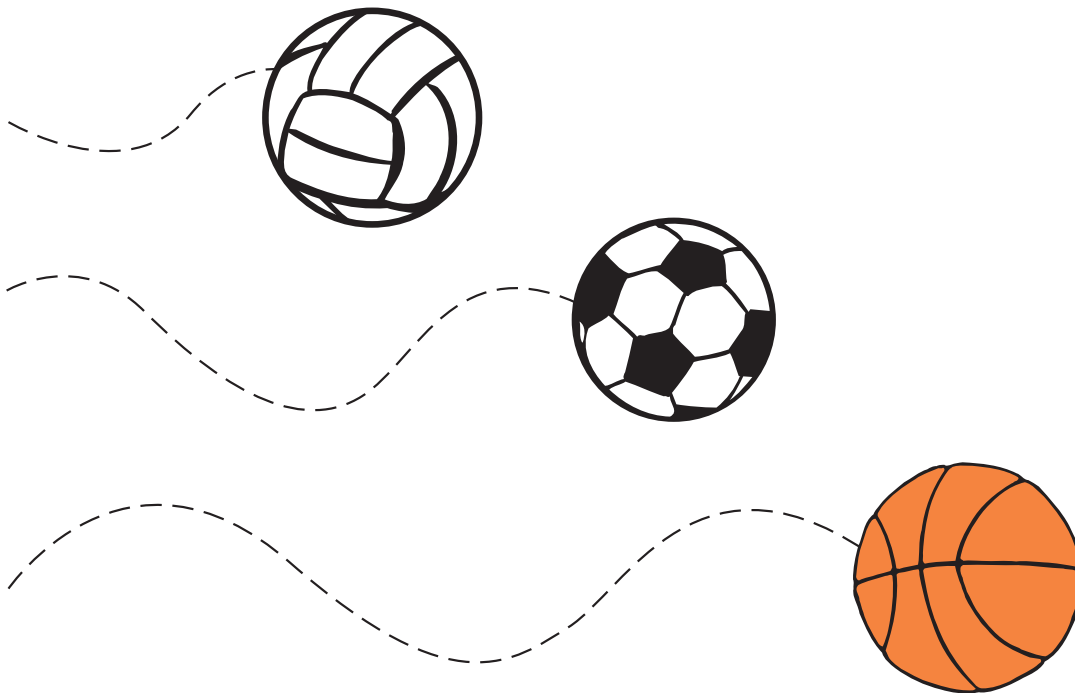
Answer: _____

Logic Problems

Directions: Use the clues below to figure out this logic problem.

Three friends all enjoy sports. Each of their favorite sports involves a ball. Two of these sports are played on courts, and one is played on a field.

- Rachel likes to run and doesn't have to be a good catcher.
- Trinity is a good jumper.
- Betsy is also a good jumper, but she is a good ball handler.



Which sport does each girl play?

Trinity _____

Betsy _____

Rachel _____

A Cool Logic Problem

A family with 5 children went to the frozen-yogurt shop. The children all ordered different flavors.

Directions: Use the clues and the chart to help you write which child ate which flavor of frozen yogurt. Write a dot in the chart for the correct answer. Cross out all the other boxes in that row and column.

- No person had frozen yogurt with the same first initial as his or her name
- Neither of the twins, Corey and Cody, like peanut butter. Corey thinks vanilla is boring.
- The children are the twins, Julia, the brother who got chocolate, and the sister who ate peanut butter.

	Rocky Road	Chocolate Chip	Vanilla	Chocolate	Peanut Butter
Corey					
Cody					
Miranda					
Julia					
Lucas					

Who ate which flavor?

Corey _____

Cody _____

Miranda _____

Julia _____

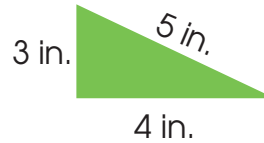
Lucas _____



Perimeter

The **perimeter** is the distance around a shape formed by straight lines, such as a square or triangle. To find the perimeter of a shape, add the lengths of its sides.

Examples:



For the square, add $8 + 8 + 8 + 8 = 32$. Or, write a formula using **P** for **perimeter** and **s** for the **sides**:

$$P = 4 \times s$$

$$P = 4 \times 8$$

$$P = 32 \text{ inches}$$

For the rectangle, add $4 + 5 + 4 + 5 = 18$. Or, use a different formula, using **l** for **length** and **w** for **width**. In formulas with parentheses, first do the adding, multiplying, and so on, in the parentheses:

$$P = (2 \times l) + (2 \times w)$$

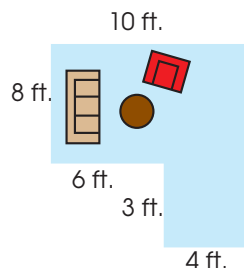
$$P = (2 \times 5) + (2 \times 4)$$

$$P = 10 + 8$$

$$P = 18$$

For the triangle, the sides are all different lengths, so the formula doesn't help. Instead, add the sides: $3 + 4 + 5 = 12$ inches.

Directions: Find the perimeter of each shape below. Use the formula whenever possible.



1. Find the perimeter of the room pictured at left. $P =$ _____

2. Brandy plans to frame a picture with a sheet of construction paper. Her picture is 8 in. wide and 13 in. long. She wants the frame to extend 1 in. beyond the picture on all sides. How wide and long should the frame be? What is the perimeter of her picture and of the frame?

Length and width of frame: _____

Perimeter of picture: _____

Perimeter of frame: _____

3. A square has a perimeter of 120 feet. How long is each side? _____

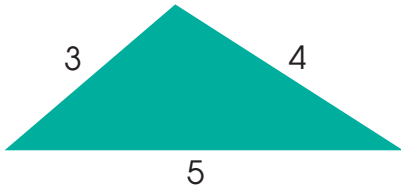
4. A triangle with equal sides has a perimeter of 96 inches. How long is each side? _____

5. A rectangle has two sides that are each 14 feet long and a perimeter of 50 feet. How wide is it? _____

Perimeter

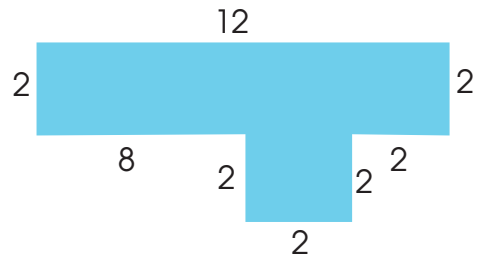
Directions: Find the perimeter of each shape below.

1.



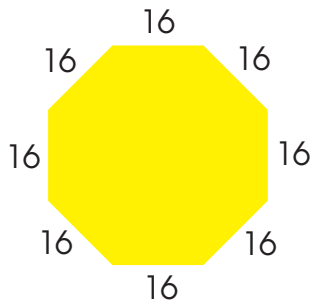
P = _____

2.



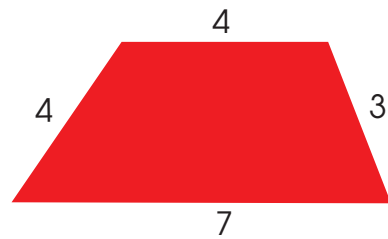
P = _____

3.



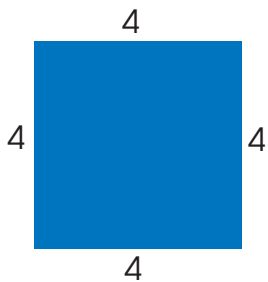
P = _____

4.



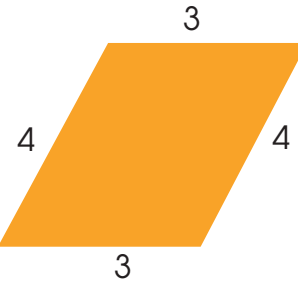
P = _____

5.



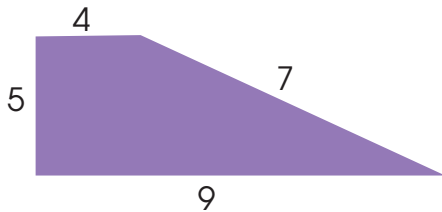
P = _____

6.



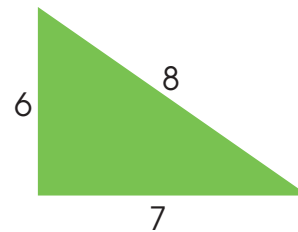
P = _____

7.



P = _____

8.



P = _____

Area: Squares and Rectangles

The **area** is the number of square units that covers a certain space. To find the area, multiply the length by the width. The answer is in square units, shown by adding a superscript 2 (²) to the number.

Examples:



3 in.



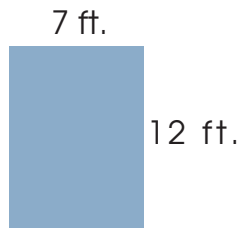
5 in.

8 in.

For the rectangle, use this formula: **$A = l \times w$**
 $A = 8 \times 5$
 $A = 40 \text{ in.}^2$

For the square formula, **s** stands for side: **$A = s \times s$** (or s^2)
 $A = 3 \times 3$ (or 3^2)
 $A = 9 \text{ in.}^2$

Directions: Find the area of each shape below.



7 ft.

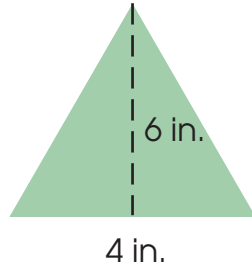
12 ft.

- Find the area of a room that is 12 feet long and 7 feet wide. $A =$ _____
- A farmer's field is 32 feet on each side. How many square feet does she have to plow? _____
- Kwan's bedroom is 10 feet by 12 feet. How many square feet of carpeting would cover the floor? _____
- Two of Kwan's walls are 7.5 feet high and 12 feet long. The other two are the same height and 10 feet long. How many square feet of wallpaper would cover all four walls?
 Square feet for 12-foot wall = _____ $\times 2 =$ _____
 Square feet for 10-foot wall = _____ $\times 2 =$ _____
- A clothes shop moved from a store that was 35 by 22 feet to a new location that was 53 by 32 feet. How many more square feet does the store have now?
 Square feet for first location = _____
 Square feet for new location = _____ Difference = _____
- A school wanted to purchase a climber for the playground. The one they selected would need 98 square feet of space. The only space available on the playground was 12 feet long and 8 feet wide. Will there be enough space for the climber? _____

Area: Triangles

Finding the area of a triangle requires knowing the size of the base and the height. For the triangle formula, use **b** for **base** and **h** for **height**. Multiply $\frac{1}{2}$ times the size of the base, and then multiply by the height. The answer will be in square units.

Example:



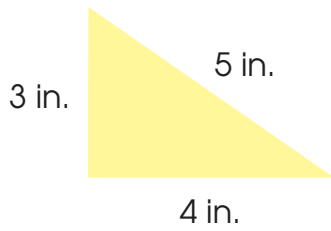
$$A = \frac{1}{2} \times b \times h$$

$$A = \frac{1}{2} \times 4 \times 6$$

$$A = 12 \text{ in.}^2$$

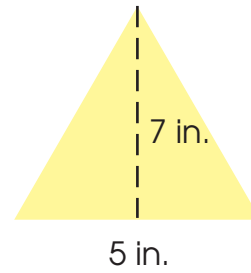
Directions: Apply the formula to find the area of each triangle below.

1.



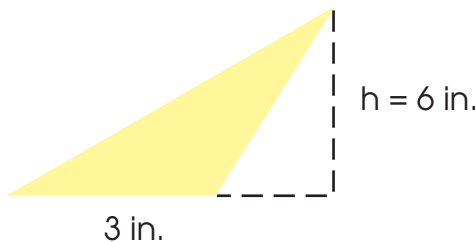
A = _____

2.



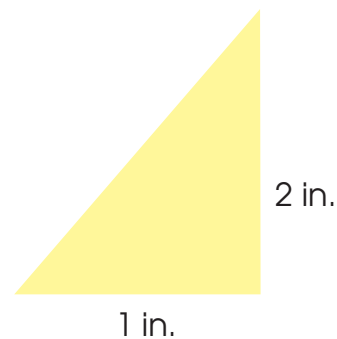
A = _____

3.



A = _____

4.



A = _____

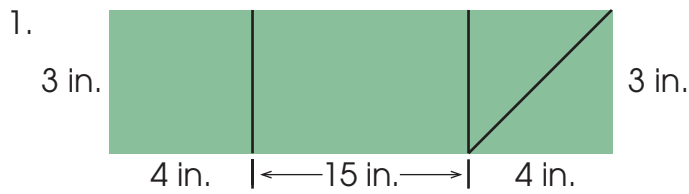
5. Addison wanted to make a sail for her new boat. The base of the triangular sail would be 7 feet, and the height would be 6 feet. Find the area.

A = _____

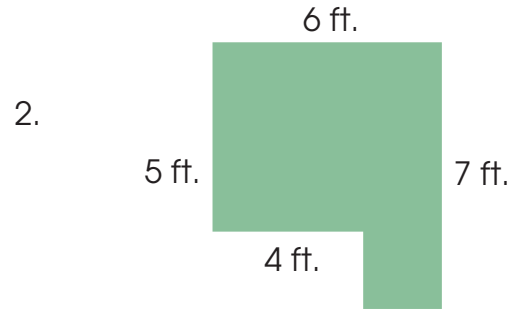
Area Challenge

When finding the area of an unusual shape, first try to divide it into squares, rectangles, or triangles. Find the area of each of those parts, and then add your answers together to find the total area of the object.

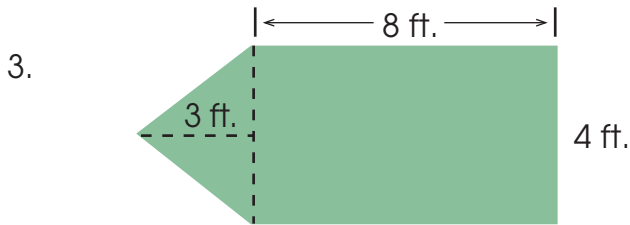
Directions: Find the area of each shape below.



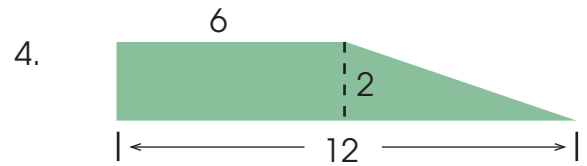
Total area = _____



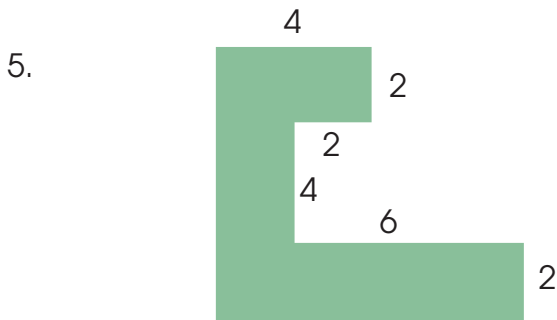
Total area = _____



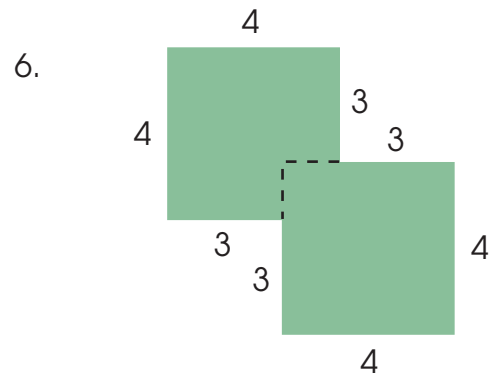
Total area = _____



Total area = _____



Total area = _____ units²



Total area = _____ units²

Volume

Volume is the number of cubic units that fills a space. A **cubic unit** has 6 equal sides, like a child's block. To find the volume (**V**) of something, multiply the length (**l**) by the width (**w**) by the height (**h**), or **$V = l \times w \times h$** . The answer will be in cubic units (³). Sometimes it's easier to understand volume if you imagine a figure is made of small cubes.

Example: **$V = l \times w \times h$**

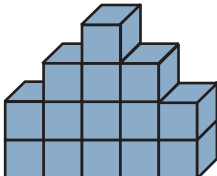
$V = 4 \times 6 \times 5$

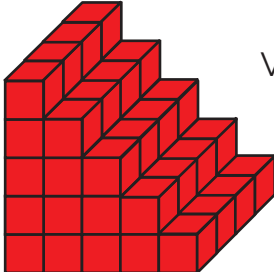
$V = 120 \text{ in.}^3$

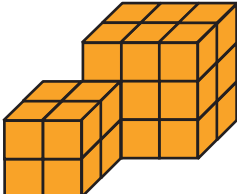
Directions: Solve the following problems.

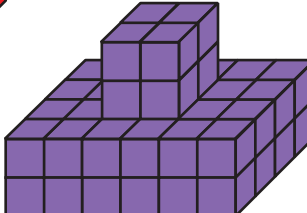
1. What is the volume of a cube that is 7 inches on each side? _____
2. How many cubic inches of cereal are in a box that is 10 inches long, 6 inches wide, and 4.5 inches high? _____
3. Jeremy made a tower of five blocks that are each 2.5 inches square. How many cubic inches are in his tower? _____
4. How many cubic feet of gravel are in the back of a full dump truck that measures 7 feet wide by 4 feet tall by 16 feet long? _____
5. Will 1,000 cubic inches of dirt fill a flower box that is 32 inches long, 7 inches wide, and 7 inches tall? _____
6. A mouse needs 100 cubic inches of air to live for an hour. Will your pet mouse be okay for an hour in an airtight box that's 4.5 inches wide by 8.25 inches long by 2.5 inches high? _____

7. Find the volume of the figures below. 1 cube = 1 inch³

A.  $V =$ _____

C.  $V =$ _____

B.  $V =$ _____

D.  $V =$ _____

Geometric Patterns

Geometric patterns can be described in several ways. **Similar shapes** have the same shape but in differing sizes. **Congruent shapes** have the same geometric pattern but may be facing in different directions. **Symmetrical shapes** are identical when divided in half.

Directions: Use the terms **similar**, **congruent**, or **symmetrical** to describe the following patterns.

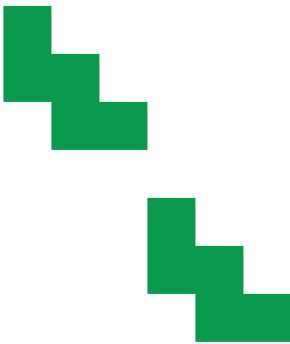
1.



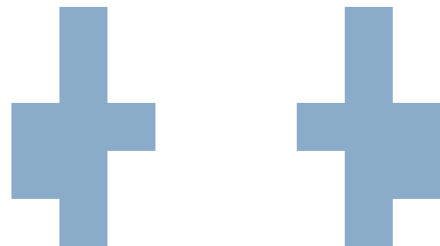
2.



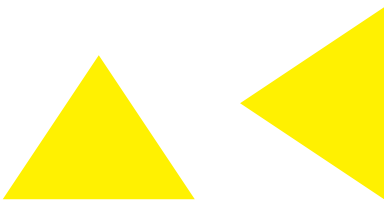
3.



4.



5.



6.



7.



Angles

Angles are named according to the number of degrees between the lines. The degrees are measured with a protractor.

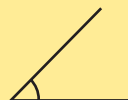
Examples:



straight angle
(measures 180°)



right angle
(90°)



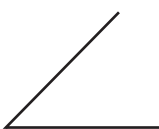
acute angle
(less than 90°)

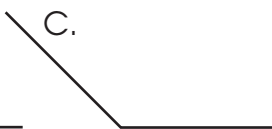



obtuse angle
(more than 90°)


Directions: Study the examples. Then, follow the instructions below.

- Use a protractor to measure each angle below. Then, write whether it is straight, right, acute, or obtuse.

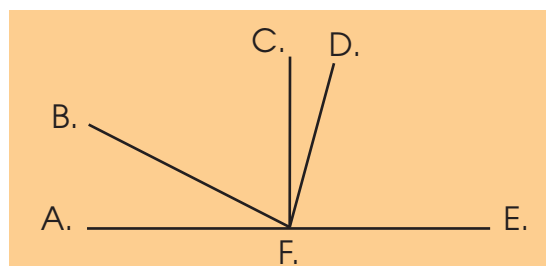
A.  Degrees: _____ Kind of angle: _____

C.  Degrees: _____ Kind of angle: _____

B.  Degrees: _____ Kind of angle: _____

D.  Degrees: _____ Kind of angle: _____

- The angles in this figure are named by letters. Write the number of degrees in each angle and whether it is straight, right, acute, or obtuse.



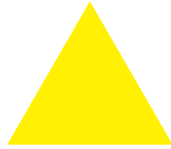
- a. Angle AFB Degrees: _____ Kind of angle: _____
- b. Angle AFC Degrees: _____ Kind of angle: _____
- c. Angle AFD Degrees: _____ Kind of angle: _____
- d. Angle AFE Degrees: _____ Kind of angle: _____
- e. Angle BFD Degrees: _____ Kind of angle: _____

Types of Triangles

The sum of angles in all triangles is 180° . However, triangles come in different shapes. They are categorized by the length of their sides and by their types of angles.

Equilateral:

Three equal sides



Acute:

Three acute angles



Isosceles:

Two equal sides



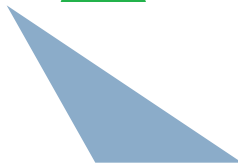
Right:

One right angle



Scalene:

Zero equal sides



Obtuse:

One obtuse angle

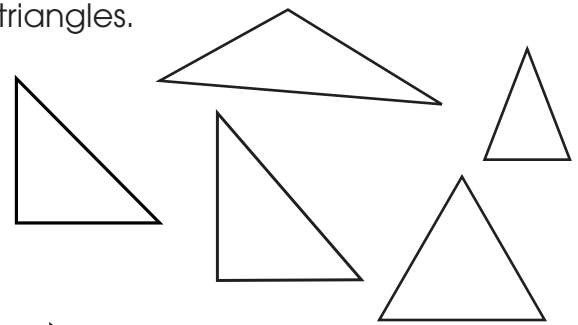


One triangle can be a combination of types, such as isosceles and obtuse.

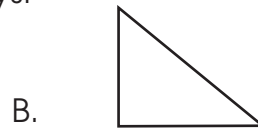
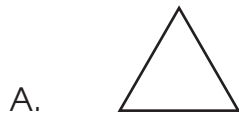
Directions: Study the examples. Then, complete the exercises below

1. Read these directions, and color in the correct triangles.

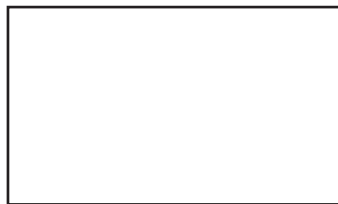
- Color the right scalene triangle blue.
- Color the obtuse scalene triangle red.
- Color the equilateral triangle yellow.
- Color the right isosceles triangle green.
- Color the acute isosceles triangle black.



2. Describe each of these triangles in two ways.



3. In the space below, draw the following triangles.



scalene triangle



equilateral triangle



obtuse triangle

Finding Angles

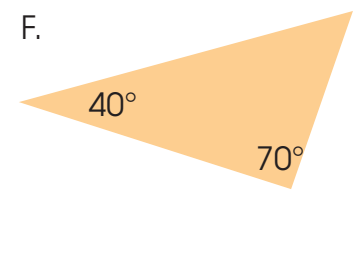
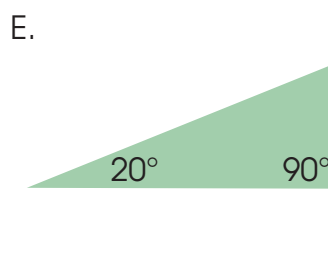
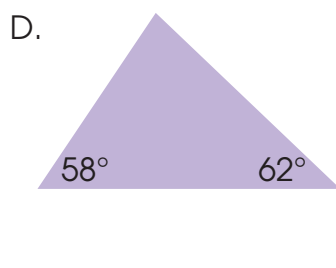
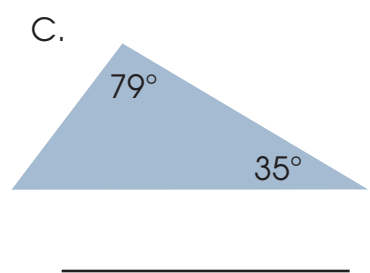
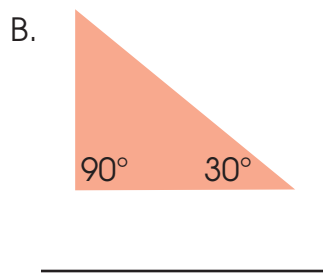
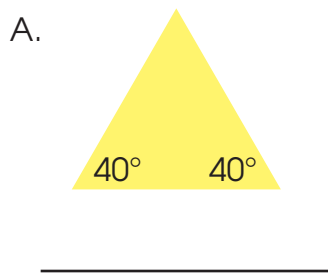
All triangles have three angles. The sum of these angles is 180° . Therefore, if we know the number of degrees in two of the angles, we can add them together and then subtract from 180 to find the size of the third angle.

Directions: Follow the instructions below.

1. Circle the number that shows the third angle of triangles A through F. Then, describe each triangle two ways. The first one has been done for you.

- | | | |
|--------------------------|--|---------------------------|
| A. $60^\circ, 60^\circ$ | 45° 50° 60° | <u>equilateral, acute</u> |
| B. $35^\circ, 55^\circ$ | 27° 90° 132° | _____ |
| C. $30^\circ, 120^\circ$ | 30° 74° 112° | _____ |
| D. $15^\circ, 78^\circ$ | 65° 87° 98° | _____ |
| E. $28^\circ, 93^\circ$ | 61° 59° 70° | _____ |
| F. $12^\circ, 114^\circ$ | 60° 50° 54° | _____ |

2. Find the number of degrees in the third angle of each triangle below.



Types of Quadrilaterals

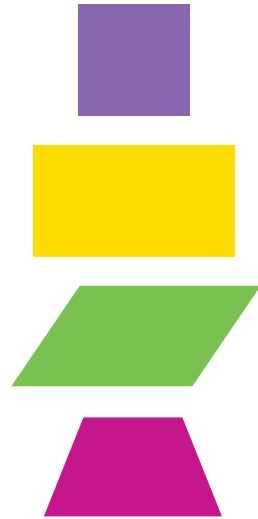
A **quadrilateral** is a shape with four sides and four angles. The sum of angles in all quadrilaterals is 360° . Like triangles, quadrilaterals come in different shapes and are categorized by their sides and their angles.

A **square** has four parallel sides of equal length and four 90° angles.

A **rectangle** has four parallel sides, but only its opposite sides are equal length; it has four 90° angles.

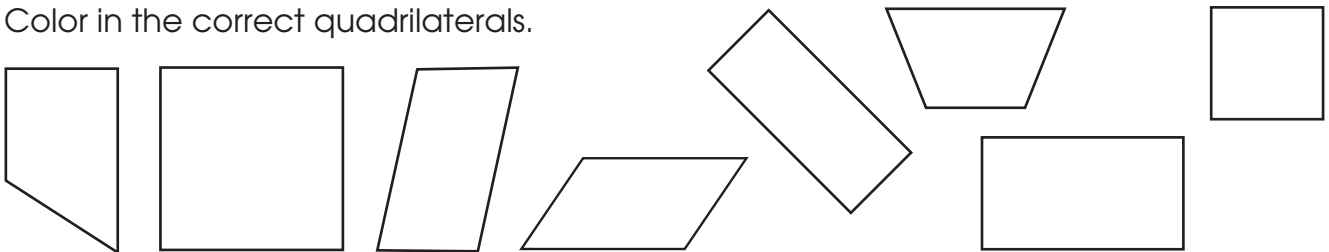
A **parallelogram** has four parallel sides, with the opposite sides of equal length.

A **trapezoid** has two opposite sides that are parallel; its sides may or may not be equal length; its angles may include none, one, or two that are 90° .



Directions: Study the examples. Then, complete the exercises below.

1. Color in the correct quadrilaterals.



Color two squares blue.

Color two parallelograms yellow.

Color two rectangles red.

Color two trapezoids green.

2. Circle the number that shows the missing angle for each quadrilateral. Then name the possible quadrilaterals that could have those angles.

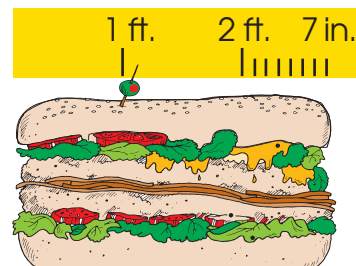
- | | | | | |
|------------------------------------|------------|------------|-------------|-------|
| A. $90^\circ, 90^\circ, 90^\circ$ | 45° | 90° | 180° | _____ |
| B. $65^\circ, 115^\circ, 65^\circ$ | 65° | 90° | 115° | _____ |
| C. $90^\circ, 110^\circ, 90^\circ$ | 45° | 70° | 125° | _____ |
| D. $100^\circ, 80^\circ, 80^\circ$ | 40° | 80° | 100° | _____ |
| E. $90^\circ, 120^\circ, 50^\circ$ | 50° | 75° | 100° | _____ |

Length in Customary Units

The **customary system** of measurement is the most widely used in the United States. It measures length in inches, feet, yards, and miles.

Examples:

- 12 inches (in.) = 1 foot (ft.)
- 3 ft. (36 in.) = 1 yard (yd.)
- 5,280 ft. (1,760 yds.) = 1 mile (mi.)



To change to a larger unit, divide. To change to a smaller unit, multiply.

Examples:

- | | | |
|---|-----------------|----------------------|
| To change inches to feet, divide by 12. | 24 in. = 2 ft. | 27 in. = 2 ft. 3 in. |
| To change feet to inches, multiply by 12. | 3 ft. = 36 in. | 4 ft = 48 in. |
| To change inches to yards, divide by 36. | 108 in. = 3 yd. | 80 in. = 2 yd. 8 in. |
| To change feet to yards, divide by 3. | 12 ft. = 4 yd. | 11 ft. = 3 yd. 2 ft. |

Sometimes in subtraction you have to borrow units.

- | | | | |
|------------------|---|---|--|
| Examples: | $\begin{array}{r} 3 \text{ ft. } 4 \text{ in.} \\ - 1 \text{ ft. } 11 \text{ in.} \\ \hline 1 \text{ ft. } 5 \text{ in.} \end{array}$ | $\begin{array}{r} 3 \text{ yd.} \\ - 1 \text{ yd. } 2 \text{ ft.} \\ \hline 1 \text{ yd. } 1 \text{ ft.} \end{array}$ | $\begin{array}{r} 2 \text{ yd. } 3 \text{ ft.} \\ - 1 \text{ yd. } 2 \text{ ft.} \\ \hline 1 \text{ yd. } 1 \text{ ft.} \end{array}$ |
|------------------|---|---|--|

Directions: Solve the following problems.

1. 108 in. = ____ ft.
2. 68 in. = ____ ft. ____ in.
3. 8 ft. = ____ yd. ____ ft.
4. 3,520 yd. = ____ mi.
5. What form of measurement (inches, feet, yards, or miles) would you use for each item below?

a. pencil _____	b. vacation trip _____
c. playground _____	d. wall _____
6. One side of a square box is 2 ft. 4 in. What is the perimeter of the box? _____
7. Jason is 59 in. tall. Kent is 5 ft. 1 in. tall. Who is taller and by how much? _____
8. Kyra bought a doll 2 ft. 8 in. tall for her little sister. She found a box that is 29 in. long. Will the doll fit in that box? _____
9. Dan's dog likes to go out in the backyard, which is 85 ft. wide. The dog's chain is 17 ft. 6 in. long. If Dan attaches one end of the chain to a pole in the middle of the yard, will his dog be able to leave the yard? _____

Length in Metric Units

The **metric system** measures length in meters, centimeters, millimeters, and kilometers.

Examples:

A **meter (m)** is about 40 inches or 3.3 feet.

A **centimeter (cm)** is $\frac{1}{100}$ of a meter or 0.4 inches.

A **millimeter (mm)** is $\frac{1}{1000}$ of a meter or 0.04 inches.

A **kilometer (km)** is 1,000 meters or 0.6 miles.

As before, divide to find a larger unit, and multiply to find a smaller unit.

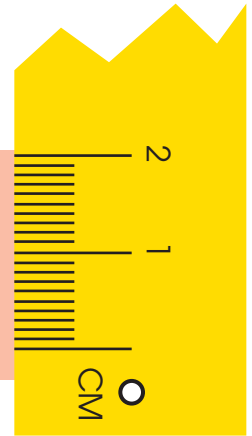
Examples:

To change cm to mm, multiply by 10.

To change cm to meters, divide by 100.

To change mm to meters, divide by 1,000.

To change km to meters, multiply by 1,000.



Directions: Solve the following problems.

- 600 cm = _____ m 2. 12 cm = _____ mm 3. 47 m = _____ cm 4. 3 km = _____ m
- In the sentences below, write the missing unit: m, cm, mm, or km.
 - A fingernail is about 1 _____ thick.
 - An average car is about 5 _____ long.
 - Someone could walk 1 _____ in 10 minutes.
 - A finger is about 7 _____ long.
 - A street could be 3 _____ long.
 - The Earth is about 40,000 _____ around at the equator.
 - A pencil is about 17 _____ long.
 - A noodle is about 4 _____ wide.
 - A teacher's desk is about 1 _____ wide.
- A nickel is about 1 mm thick. How many nickels would be in a stack 1 cm high? _____
- Is something 25 cm long closer to 10 inches or 10 feet? _____
- Is something 18 mm wide closer to 0.7 inch or 7 inches? _____
- Would you get more exercise running 4 km or 500 m? _____
- Which is taller, something 40 m or 350 cm? _____

Weight in Customary Units

Here are the main ways to measure weight in customary units:

16 ounces (oz.) = 1 pound (lb.)

2,000 lb. = 1 ton (tn.)

To change ounces to pounds, divide by 16.

To change pounds to ounces, multiply by 16.

As with measurements of length, you may have to borrow units in subtraction.

Example:

$$\begin{array}{r} 4 \text{ lb. } 5 \text{ oz.} = 3 \text{ lb. } 21 \text{ oz.} \\ - 2 \text{ lb. } 10 \text{ oz.} \quad - 2 \text{ lb. } 10 \text{ oz.} \\ \hline 1 \text{ lb. } 11 \text{ oz.} \end{array}$$



Directions: Solve the following problems.

1. 48 oz. = _____ lb. 2. 39 oz. = _____ lb. 3. 4 lb. = _____ oz. 4. 1.25 tn. = _____ lb.

5. What form of measurement would you use for each of these: ounces, pounds, or tons?
 a. pencil _____ b. elephant _____ c. person _____

6. Which is heavier, 0.25 ton or 750 pounds? _____

7. Twenty-two people, each weighing an average of 150 lb., want to get on an elevator that can carry up to 1.5 tons. How many of them should wait for the next elevator? _____

8. A one ton truck is carrying 14 boxes that weigh 125 lb. each. It comes to a small bridge with a sign that says, "Bridge unsafe for trucks over 2 tons." Is it safe for the truck and the boxes to cross the bridge? _____

9. A large box of Oat Boats contains 2 lb. 3 oz. of cereal, while a box of Honey Hunks contains 1 lb. 14 oz. How many more ounces are in the box of Oat Boats? _____

10. A can of Peter's Powdered Drink Mix weighs 2 lb. 5 oz. A can of Petunia's Powdered Drink Mix weighs 40 oz. Which one is heavier? _____

11. A can of Peter's Drink Mix is 12 cents an ounce. How much does it cost? _____

12. How many 5-oz. servings could you get from a fish that weighs 3 lb. 12 oz.? _____

Weight in Metric Units

A **gram (g)** is about 0.035 oz.

A **milligram (mg)** is $\frac{1}{1000}$ g or about 0.000035 oz.

A **kilogram (kg)** is 1,000 g or about 2.2 lb.

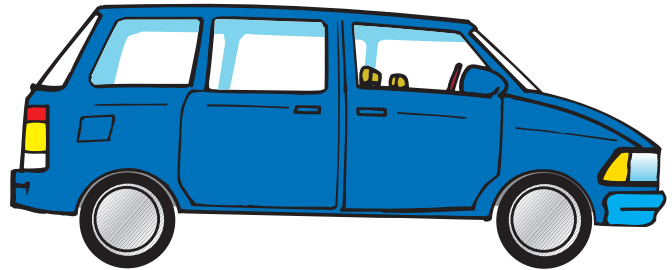
A **metric ton (t)** is 1,000 kg or about 1.1 tn.

To change g to mg, multiply by 1,000.

To change g to kg, divide by 1,000.

To change kg to g, multiply by 1,000.

To change t to kg, multiply by 1,000.



Directions: Solve the following problems.

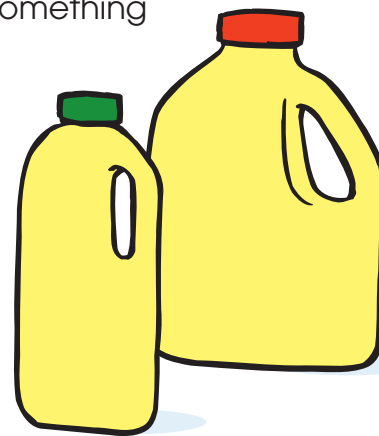
1. 3 kg = _____ g
2. 2 g = _____ mg
3. 145 g = _____ kg
4. 3,000 kg = _____ t
5. _____ g = 450 mg
6. 3.5 t = _____ kg
7. Write the missing units below: g, mg, kg, or t.
 - a. A sunflower seed weighs less than 1 _____.
 - b. A serving of cereal contains 14 _____ of sugar.
 - c. The same serving of cereal has 250 _____ of salt.
 - d. A bowling ball weighs about 7 _____.
 - e. A whale weighs about 90 _____.
 - f. A math textbook weighs about 1 _____.
 - g. A safety pin weighs about 1 _____.
 - h. An average car weighs about 1 _____.
8. Is 200 g closer to 7 oz. or 70 oz.? _____
9. Is 3 kg closer to 7 lb. or 70 lb.? _____
10. Does a metric ton weigh more or less than a ton measured by the customary system? _____
11. How is a kilogram different from a kilometer? _____
12. Which is heavier, 300 g or 1 kg? _____

Capacity in Customary Units

Here are the main ways to measure capacity (how much something will hold) in customary units:

- 8 fluid ounces (fl. oz.) = 1 cup (c.)
- 2 c. = 1 pint (pt.)
- 2 pt. = 1 quart (qt.)
- 4 qt. = 1 gallon (gal.)

To change ounces to cups, divide by 8.
 To change cups to ounces, multiply by 8.
 To change cups to pints or pints to quarts, divide by 2.
 To change pints to cups or quarts to pints, multiply by 2.



As with measurements of length and weight, you may have to borrow units in subtraction.

Example:

$$\begin{array}{r} 3 \text{ gal. } 2 \text{ qt.} = 2 \text{ gal. } 6 \text{ qt.} \\ - 1 \text{ gal. } 3 \text{ qt.} \\ \hline 1 \text{ gal. } 3 \text{ qt.} \end{array}$$



Directions: Solve the following problems.

1. 32 fl. oz. = ____ pt.
2. 4 gal. = ____ pt.
3. ____ c. = 24 fl. oz.
4. 5 pt. = ____ qt.
5. 16 pt. = ____ gal.
6. 3 pt. = ____ fl. oz.
7. A large can of soup contains 19 fl. oz. A serving is about 8 oz. How many cans should you buy if you want to serve 7 people? _____
8. A container of strawberry ice cream holds 36 fl. oz. A container of chocolate ice cream holds 2 pt. Which one has more ice cream? How much more? _____
9. A day-care worker wants to give 15 children each 6 fl. oz. of milk. How many quarts of milk does she need? _____
10. This morning, the day-care supervisor bought 3 gal. of milk. The kids drank 2 gal. 3 c. How much milk is left for tomorrow? _____
11. Harriet bought 3 gal. 2 qt. of paint for her living room. She used 2 gal. 3 qt. How much paint is left over? _____
12. Yusef's favorite punch takes a pint of raspberry sherbet. If he wants to make $1\frac{1}{2}$ times the recipe, how many fl. oz. of sherbet does he need? _____

Capacity in Metric Units

A **liter (L)** is a little over 1 quart.

A **milliliter (mL)** is $\frac{1}{1000}$ of a liter, or about 0.03 oz.

A **kiloliter (kL)** is 1,000 liters or about 250 gallons.

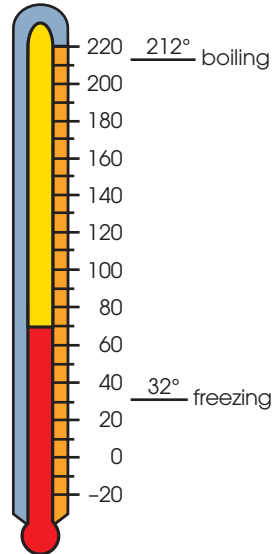
Directions: Solve the following problems.



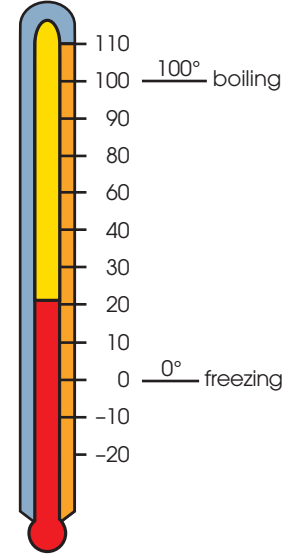
1. 5,000 mL = _____ L
2. 2,000 L = _____ kL
3. 3 L = _____ mL
4. Write the missing unit: L, mL, or kL.
 - a. A swimming pool holds about 100 _____ of water.
 - b. An eyedropper is marked for 1 and 2 _____.
 - c. A pitcher could hold 1 or 2 _____ of juice.
 - d. A teaspoon holds about 5 _____ of medicine.
 - e. A birdbath might hold 5 _____ of water.
 - f. A tablespoon holds about 15 _____ of salt.
 - g. A bowl holds about 250 _____ of soup.
 - h. We drank about 4 _____ of punch at the party.
5. Which is more, 3 L or a gallon? _____
6. Which is more, 400 mL or 40 oz.? _____
7. Which is more, 1 kL or 500 L? _____
8. Is 4 L closer to a quart or a gallon? _____
9. Is 480 mL closer to 2 cups or 2 pints? _____
10. Is a mL closer to 4 drops or 4 teaspoonsful? _____
11. How many glasses of juice containing 250 mL each could you pour from a 1-L jug? _____
12. How much water would you need to water an average-sized lawn, 1 kL or 1 L? _____

Temperature in Customary and Metric Units

The customary system measures temperature in Fahrenheit (F°) degrees.



The metric system uses Celsius (C°) degrees.



Directions: Study the thermometers, and answer these questions.

1. Write in the temperature from both systems:

	Fahrenheit	Celsius
a. freezing	_____	_____
b. boiling	_____	_____
c. comfortable room temperature	_____	_____

2. Underline the most appropriate temperature for both systems.

a. a reasonably hot day	34°	54°	84°	10°	20°	35°
b. a cup of hot chocolate	95°	120°	190°	60°	90°	120°
c. comfortable water to swim in	55°	75°	95°	10°	25°	40°

3. If the temperature is 35°C, is it summer or winter? _____

4. Would ice cream stay frozen at 35°F? _____

5. Which is colder, -10°C or -10°F? _____

6. Which is warmer, 60°C or 60°F? _____

Review

Directions: Complete the following exercises.

1. 372 in. = _____ yd. _____ ft.
2. 4 km = _____ m
3. 1.25 lb. = _____ oz.
4. 2,000 mg = _____ g
5. 1 qt. = _____ oz.
6. 10,000 mL = _____ L
7. Todd has a board that is 6 ft. 3 in. long. He needs to cut it to 4 ft. 9 in. How much should he cut off?

8. In a contest, Lauren threw a ball 12 yd. Jiao threw the ball 500 in. Who threw the farthest?

9. Would you measure this workbook in mm or cm?

10. Which is heavier, a box of books that weighs 4 lb. 6 oz. or a box of dishes that weighs 80 oz.?

11. A 1-lb. package has 10 hot dogs. How many ounces does each hot dog weigh?

12. Would the amount of salt (sodium) in 1 oz. of pretzels be 170 g or 170 mg?

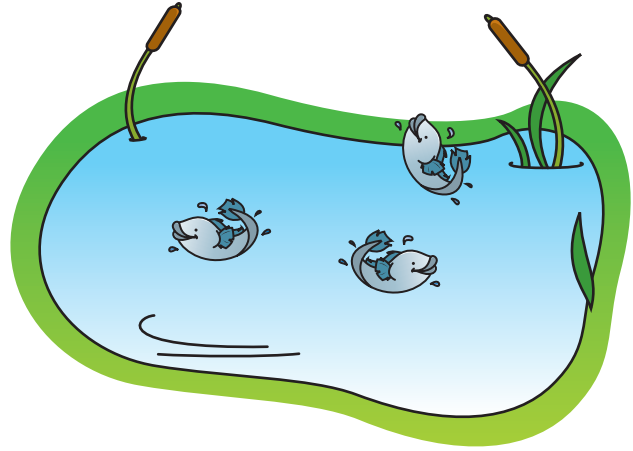
13. If a family ate half a gallon of frozen yogurt, how many fluid ounces would be left?

14. You want to serve 6 fl. oz of fruit juice to each of 16 friends at your party. How many quarts of juice should you buy?

15. Would you measure water in a fish pond with L or kL?

16. Would popsicles melt at 5°C?

17. Would soup be steaming hot at 150°F?



Ratios

A **ratio** is a comparison of two quantities. For example, a wall is 96 in. high; a pencil is 8 in. long. By dividing 8 into 96, you find it would take 12 pencils to equal the height of the wall. The ratio, or comparison, of the wall to the pencil can be written three ways:

1 to 12; 1:12; $\frac{1}{12}$. In this example, the ratio of triangles to circles is 4:6.

The ratio of triangles to squares is 4:9. The ratio of circles to squares is 6:9. These ratios will stay the same if we divide both numbers in the ratio by the same number.



Examples: $\frac{4}{6} \div 2 = \frac{2}{3}$ $\frac{6}{9} \div 3 = \frac{2}{3}$
 $\frac{4}{6} \div 2 = \frac{2}{3}$ $\frac{6}{9} \div 3 = \frac{2}{3}$ (There is no number that will divide into both 4 and 9.)

By reducing 4:6 and 6:9 to their lowest terms, they are the same—2:3. This means that 2:3, 4:6, and 6:9 are all equal ratios. You can also find equal ratios for all three by multiplying both numbers of the ratio by the same number.

Examples: $\frac{4}{6} \times 3 = \frac{12}{18}$ $\frac{6}{9} \times 5 = \frac{30}{45}$ $\frac{4}{6} \times 4 = \frac{16}{24}$
 $\frac{4}{6} \times 3 = \frac{12}{18}$ $\frac{6}{9} \times 5 = \frac{30}{45}$ $\frac{4}{6} \times 4 = \frac{16}{24}$

Directions: Solve the following problems.

1. Write two more equal ratios for each of the following by multiplying or dividing both numbers in the ratio by the same number.

- a. $\frac{1}{2}$ $\frac{2}{4}$ $\frac{3}{6}$ _____
- b. $\frac{1}{4}$ $\frac{2}{8}$ $\frac{4}{16}$ _____
- c. $\frac{8}{24}$ $\frac{1}{3}$ $\frac{3}{9}$ _____

2. Circle the ratios that are equal.

- a. $\frac{1}{6}$ $\frac{3}{6}$ b. $\frac{15}{25}$ $\frac{3}{5}$ c. $\frac{2}{7}$ $\frac{10}{35}$ d. $\frac{2}{3}$ $\frac{6}{10}$

3. Write each ratio three ways.

- a. stars to faces _____
- b. faces to trees _____
- c. stars to all other shapes _____



4. Write two equal ratios (multiplying or dividing) for:

- a. stars to faces _____
- b. faces to trees _____
- c. stars to all other shapes _____



Missing Numbers in Ratios

You can find a missing number (n) in an equal ratio. First, figure out which number has already been multiplied to get the number you know. (In the first example, 3 is multiplied by 3 to get 9; in the second example, 2 is multiplied by 6 to get 12.) Then, multiply the other number in the ratio by the same number (3 and 6 in the examples).

Examples: $\frac{3}{4} = \frac{9}{n}$ $\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$ $n = 12$ $\frac{1}{2} = \frac{n}{12}$ $\frac{1}{2} \times \frac{6}{6} = \frac{6}{12}$ $n = 6$

Directions: Solve the following problems.

1. Find each missing number.

a. $\frac{1}{2} = \frac{n}{12}$ $n =$ _____

b. $\frac{1}{5} = \frac{n}{15}$ $n =$ _____

c. $\frac{3}{2} = \frac{18}{n}$ $n =$ _____

d. $\frac{5}{8} = \frac{n}{32}$ $n =$ _____

e. $\frac{8}{3} = \frac{16}{n}$ $n =$ _____

f. $\frac{n}{14} = \frac{5}{7}$ $n =$ _____



2. If a basketball player makes 9 baskets in 12 tries, what is her ratio of baskets to tries, in lowest terms? _____

3. At the next game, the player has the same ratio of baskets to tries. If she tries 20 times, how many baskets should she make? _____

4. At the third game, she still has the same ratio of baskets to tries. This time she makes 12 baskets. How many times did she probably try? _____

5. If a driver travels 40 miles in an hour, what is his ratio of miles to minutes, in lowest terms? _____

6. At the same speed, how far would the driver travel in 30 minutes? _____

7. At the same speed, how long would it take him to travel 60 miles? _____

Proportions

A **proportion** is a statement that two ratios are equal. To make sure ratios are equal, called a proportion, we multiply the cross products.

Examples of proportions:

$$\frac{1}{5} = \frac{2}{10} \quad \frac{1}{2} \times \frac{10}{5} = \frac{10}{10} \quad \frac{3}{7} = \frac{15}{35} \quad \frac{3}{7} \times \frac{35}{15} = \frac{105}{105}$$

These two ratios are not a proportion:

$$\frac{4}{3} = \frac{5}{6} \quad \frac{4}{3} \times \frac{6}{5} = \frac{24}{15}$$

To find a missing number (n) in a proportion, multiply the cross products and divide.

Examples:

$$\frac{n}{30} = \frac{1}{6}$$

$$n \times 6 = 1 \times 30$$

$$n \times 6 = 30$$

$$n = \frac{30}{6}$$

$$n = 5$$



Directions: Solve the following problems.

1. Write = between the ratios if they are a proportion. Write \neq if they are not a proportion. The first one has been done for you.

a. $\frac{1}{2} \text{ (=) } \frac{6}{12}$

b. $\frac{13}{18} \text{ () } \frac{20}{22}$

c. $\frac{2}{6} \text{ () } \frac{5}{15}$

d. $\frac{5}{6} \text{ () } \frac{20}{24}$

2. Find the missing numbers in these proportions.

a. $\frac{2}{5} = \frac{n}{15}$ $n = \underline{\hspace{2cm}}$

b. $\frac{3}{8} = \frac{9}{n}$ $n = \underline{\hspace{2cm}}$

c. $\frac{n}{18} = \frac{4}{12}$ $n = \underline{\hspace{2cm}}$

3. One issue of a magazine costs \$2.99, but if you buy a subscription, 12 issues cost \$35.88. Is the price at the same proportion? _____

4. A muffin recipe calls for 3 cups of flour to make 24 muffins. How much flour is needed for 36 muffins? _____

5. The same recipe requires 4 teaspoons of cinnamon for 36 muffins. How many teaspoons is needed to make 48 muffins? (Answer will include a fraction.) _____

6. The recipe also calls for 2 cups of sugar for 36 muffins. How much sugar should you use for 48 muffins? (Answer will include a fraction.) _____

Percents

Percent means “per 100.” A percent is a ratio that compares a number with 100. The same number can be written as a decimal and a percent. To change a decimal to a percent, move the decimal point two places to the right and add the % sign. To change a percent to a decimal, drop the % sign and place a decimal point two places to the left.

Examples: $0.25 = 25\%$ $0.1 = 10\%$ $1.456 = 145.6\%$
 $32\% = 0.32$ $99\% = 0.99$ $203\% = 2.03$

A percent or decimal can also be written as a ratio or fraction.

Example: $0.25 = 25\% = \frac{25}{100} = \frac{1}{4} = 1:4$

To change a fraction or ratio to a percent, first change it to a decimal. Divide the numerator by the denominator.

Examples: $\frac{1}{3} = 3 \overline{)1.00} \begin{array}{l} 0.33\frac{1}{3} = 33\frac{1}{3}\% \end{array}$ $\frac{2}{5} = 5 \overline{)2.0} \begin{array}{l} 0.4 = 40\% \end{array}$



Directions: Solve the following problems.

1. Change the percents to decimals.

a. $3\% =$ _____ b. $75\% =$ _____ c. $14\% =$ _____ d. $115\% =$ _____

2. Change the decimals and fractions to percents.

a. $0.56 =$ _____ % b. $0.03 =$ _____ % c. $\frac{3}{4} =$ _____ % d. $\frac{1}{5} =$ _____ %

3. Change the percents to ratios in their lowest terms. The first one has been done for you.

a. $75\% = \frac{75}{100} = \frac{3}{4} = 3:4$ b. $40\% =$ _____

c. $35\% =$ _____ d. $70\% =$ _____

4. The class was 45% girls. What percent was boys? _____

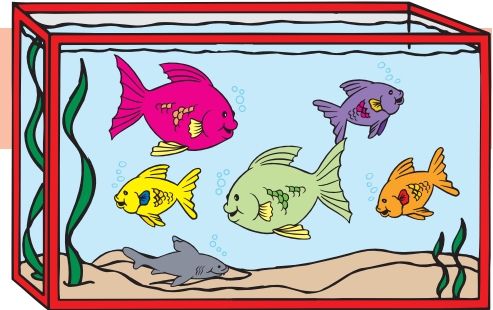
5. Half the shoes in one store were on sale. What percent of the shoes were their ordinary price? _____

6. Tierra read 84 pages of a 100-page book. What percent of the book did she read? _____

Percents

To find the percent of a number, change the percent to a decimal and multiply.

Examples: 45% of \$20 = $0.45 \times \$20 = \9.00
 125% of 30 = $1.25 \times 30 = 37.50$



Directions: Solve the following problems. Round the answers to the nearest hundredth where necessary.

1. Find the percent of each number.

- a. 26% of 40 = _____
- b. 12% of 329 = _____
- c. 73% of 19 = _____
- d. 2% of 24 = _____

2. One family spends 35% of its weekly budget of \$375 on food. How much do they spend? _____

3. A shirt in a store usually costs \$15.99, but today it's on sale for 25% off. The clerk says you will save \$4.50. Is that true? _____

4. A book that usually costs \$12 is on sale for 25% off. How much will it cost? _____

5. After you answer 60% of 150 math problems, how many do you have left to do? _____

6. A pet store's shipment of tropical fish was delayed. Nearly 40% of the 1,350 fish died. About how many lived? _____

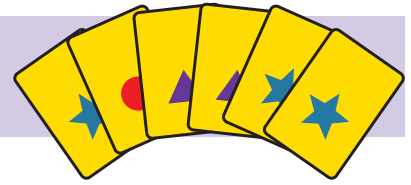
7. The shipment had 230 angelfish, which died in the same proportion as the other kinds of fish. About how many angelfish died? _____

8. A church youth group was collecting cans of food. Their goal was 1,200 cans, but they exceeded their goal by 25%. How many cans did they collect? _____

Probability

Probability is the ratio of favorable outcomes to possible outcomes in an experiment. You can use probability (P) to figure out how likely something is to happen. For example, six picture cards are turned facedown—3 cards have stars, 2 have triangles, and 1 has a circle. What is the probability of picking the circle? Using the formula below, you have a 1 in 6 probability of picking the circle, a 2 in 6 probability of picking a triangle, and a 3 in 6 probability of picking a star.

Example: $P = \frac{\text{number of favorable outcomes}}{\text{number of trials}}$ $P = \frac{1}{6} = 1:6$



Directions: Solve the following problems.

1. A class has 14 girls and 15 boys. If all of their names are put on separate slips in a hat, what is the probability of each person's name being chosen? _____
2. In the same class, what is the probability that a girl's name will be chosen? _____
3. In this class, 3 boys are named Jack. What is the probability that a slip with "Jack" written on it will be chosen? _____
4. A spinner on a board game has the numbers 1–8. What is the probability of spinning and getting a 4? _____
5. A paper bag holds these colors of wooden beads: 4 blue, 5 red, and 6 yellow. If you select a bead without looking, do you have an equal probability of getting each color? _____
6. Using the same bag of beads, what is the probability of reaching in and drawing out a red bead (in lowest terms)? _____
7. In the same bag, what is the probability of not getting a blue bead? _____
8. In a carnival game, plastic ducks have spots. The probability of picking a duck with a yellow spot is 2:15. There is twice as much probability of picking a duck with a red spot. What is the probability of picking a duck with a red spot? _____
9. In this game, all the other ducks have green spots. What is the probability of picking a duck with a green spot (in lowest terms)? _____

Possible Combinations

Today the cafeteria is offering 4 kinds of sandwiches, 3 kinds of drinks, and 2 kinds of fruits. How many possible combinations could you make? To find out, multiply the number of choices together.



Example: $4 \times 3 \times 2 = 24$ possible combinations

Directions: Solve the following problems.

1. If Juan has 3 shirts and 4 pairs of shorts, how many combinations can he make? _____
2. Jamilla can borrow 1 book and 1 magazine at a time from her classroom library. The library has 45 books and 16 magazines. How many combinations are possible? _____
3. Kerry's mother is redecorating the living room. She has narrowed her choices to 6 kinds of wallpaper, 3 shades of paint, and 4 colors of carpeting that all match. How many possible combinations are there? _____
4. Maya has 6 sweaters that she can combine with pants to make 24 outfits. How many pairs of pants does she have? _____
5. Cooper can get to school by walking, taking a bus, riding his bike, or asking his parents for a ride. He can get home the same ways, except his parents aren't available then. How many combinations can he make of ways to get to school and get home? _____
6. Gabby's middle school offers 3 different language classes, 3 art classes, and 2 music classes. If she takes one class in each area, how many possible combinations are there? _____
7. Vikram's school offers 4 language classes, 3 art classes, and some music classes. If Vikram can make 36 possible combinations, how many music classes are there? _____
8. AAA Airlines schedules 12 flights a day from Chicago to Atlanta. Four of those flights go on to Orlando. From the Orlando airport you can take a bus, ride in a taxi, or rent a car to get to Disneyworld. How many different ways are there to get from Chicago to Disneyworld if you make part of your trip on AAA Airlines? _____

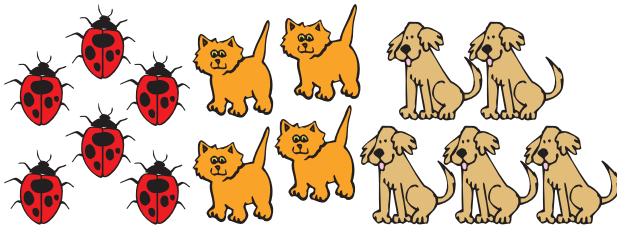
Review

Directions: Solve the following problems. Round answers to the nearest hundredth where necessary.

1. Write an equal ratio for each of these:

a. $\frac{1}{7} =$ _____ b. $\frac{5}{8} =$ _____ c. $\frac{15}{3} =$ _____ d. $\frac{6}{24} =$ _____

2. State the ratios below in lowest terms.



a. cats to bugs = _____

b. cats to dogs = _____

c. dogs to all other objects = _____

3. If Shawn drives 45 miles an hour, how far could he go in 40 minutes? _____

4. At the same speed, how many minutes would it take Shawn to drive 120 miles? _____



5. Mr. Herman is building a doghouse in proportion to his family's house. The family's house is 30 ft. high and the doghouse is 5 ft. high. If the family house is 42 ft. wide, how wide should the doghouse be? _____

6. The family house is 24 ft. from front to back. How big should Mr. Herman make the doghouse? _____

7. Change these numbers to percents:

a. $0.56 =$ _____ b. $\frac{4}{5} =$ _____ c. $0.04 =$ _____ d. $\frac{3}{8} =$ _____

8. Which is a better deal, a blue bike for \$125 at 25% off or a red bike for \$130 at 30% off? _____

9. If sales tax is 6%, what would be the total price of the blue bike? _____

10. Richard bought 6 raffle tickets for a free bike. If 462 tickets were sold, what is Richard's probability of winning? _____

11. Lilly bought 48 tickets in the same raffle. What are her chances of winning? _____

Comparing Data

Data is gathered information. The **range** is the difference between the highest and lowest number in a group of numbers. The **median** is the number in the middle when numbers are listed in order. The **mean** is the average of the numbers. We can compare numbers or data by finding the range, median, or mean.

Example: 16, 43, 34, 78, 8, 91, 26

To compare these numbers, we first need to put them in order: 8 16 26 34 43 78 91. By subtracting the lowest number (8) from the highest one (91), we find the range: 83. By finding the number that falls in the middle, we have the median: 34 (If no number fell exactly in the middle, we would average the two middle numbers.) By adding them and dividing by the number of numbers (7), we get the mean: 42.29 (rounded to the nearest hundredth).

Directions: Solve the following problems. Round answers to the nearest hundredth where necessary.

1. Find the range, median, and mean of these numbers: 19, 5, 84, 27, 106, 38, 75.

Range: _____ Median: _____ Mean: _____

2. Find the range, median, and mean finishing times for 6 runners in a race. Here are their times in seconds: 14.2, 12.9, 13.5, 10.3, 14.8, 14.7.

Range: _____ Median: _____ Mean: _____



3. If the runner who won the race in 10.3 seconds had run even faster and finished in 7 seconds, would the mean time be higher or lower? _____

4. If that runner had finished in 7 seconds, what would be the median time? _____

5. Here are the high temperatures in one city for a week: 65, 72, 68, 74, 81, 68, 85. Find the range, median, and mean temperatures.

Range: _____ Median: _____ Mean: _____

6. Find the range, median, and mean test scores for this group of students: 41, 32, 45, 36, 48, 38, 37, 42, 39, 36.

Range: _____ Median: _____ Mean: _____

Tables

Organizing data into tables makes it easier to compare numbers. As evident in the example, putting many numbers in a paragraph is confusing. When the same numbers are organized in a table, you can compare numbers in a glance. Tables can be arranged several ways and still be easy to read and understand.

Example: Money spent on groceries:

Family A: week 1 — \$98.50; week 2 — \$134.25; week 3 — \$142.00; week 4 — \$103.50.

Family B: week 1 — \$160.25; week 2 — \$192.50; week 3 — \$171.25; week 4 — \$173.50.

	Week 1	Week 2	Week 3	Week 4
Family A	\$98.50	\$134.25	\$142.00	\$103.50
Family B	\$160.25	\$192.50	\$171.25	\$173.50

Directions: Complete the following exercises.

1. Finish the table below, and then answer the questions.

Data: Steve weighs 185 lb. and is 6 ft. 2 in. tall. George weighs 218 lb. and is 6 ft. 3 in. tall. Chuck weighs 178 lb. and is 6 ft. 1 in. tall. Henry weighs 166 lb. and is 6 ft. tall.

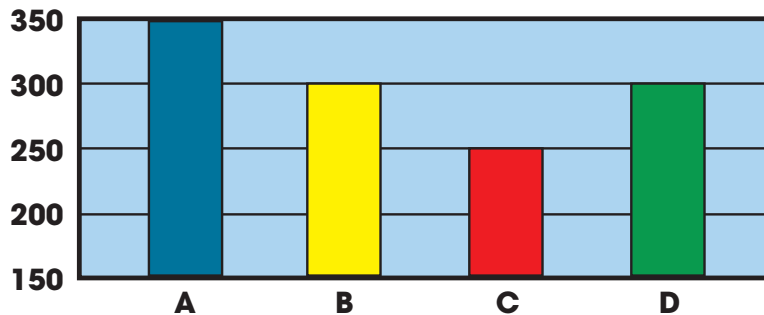
	Henry	George	Chuck	Steve
Weight				
Height				

- a. Who is tallest? _____ b. Who weighs the least? _____
2. On another sheet of paper, prepare 2 tables comparing the amount of money made by 3 booths at the school carnival this year and last year. In the first table, write the names of the games in the left-hand column (like **Family A** and **Family B** in the example). In the second table (using the same data), write the years in the left-hand column. Here is the data: fish pond—this year \$15.60, last year \$13.50; bean-bag toss—this year \$13.45, last year \$10.25; ring toss—this year \$23.80, last year \$18.80. After you complete both tables, answer the following questions.
- a. Which booth made the most money this year? _____
- b. Which booth made the biggest improvement from last year to this year?

Bar Graphs

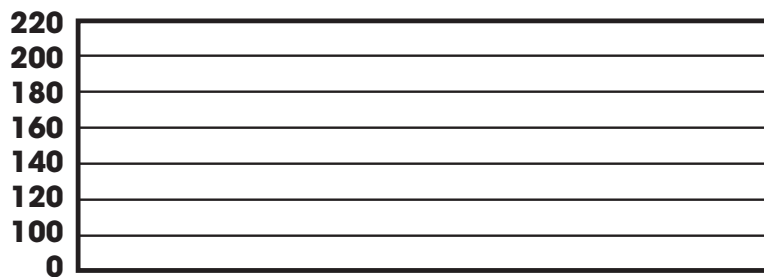
Another way to organize information is a **bar graph**. The bar graph in the example compares the number of students in 4 elementary schools. Each bar stands for 1 school. You can easily see that School A has the most students and School C has the least. The numbers along the left show how many students attend each school.

Example:



Directions: Complete the following exercises.

- This bar graph will show how many calories are in 1 serving of 4 kinds of cereal. Draw the bars the correct height, and label each with the name of the cereal. After completing the bar graph, answer the questions. Data: Korn Kernels—150 calories; Oat Floats—160 calories; Rice Puffs—110 calories; Nut Crunch—200 calories.



- Which cereal is the best to eat if you're trying to lose weight? _____
- Which cereal has nearly the same number of calories as Oat Floats?





- On another sheet of paper, draw your own graph, showing the number of TV commercials in 1 week for each of the 4 cereals in the graph above. After completing the graph, answer the questions. Data: Oat Floats—27 commercials; Rice Puffs—15; Nut Crunch—35; Korn Kernels—28.

- Which cereal is most heavily advertised? _____
- What similarities do you notice between the graph of calories and the graph of TV commercials? _____

Picture Graphs

Newspapers and textbooks often use pictures in graphs instead of bars. Each picture stands for a certain number of objects. Half a picture means half the number. The picture graph in the example indicates the number of games each team won. The Astros won 7 games, so they have $3\frac{1}{2}$ balls.

Example:

	Games Won
Astros	
Orioles	
Bluebirds	
Sluggers	

(1 ball = 2 games)

Directions: Complete the following exercises.

Finish this picture graph, showing the number of students who have dogs in 4 sixth-grade classes. Draw simple dogs in the graph, letting each drawing stand for 2 dogs. Data: Class 1—12 dogs; Class 2—16 dogs; Class 3—22 dogs; Class 4—12 dogs. After completing the graph, answer the questions.

	Dogs Owned by Students
Class 1	
Class 2	
Class 3	
Class 4	

(One dog drawing = 2 students' dogs)

- Why do you think newspapers use picture graphs? _____

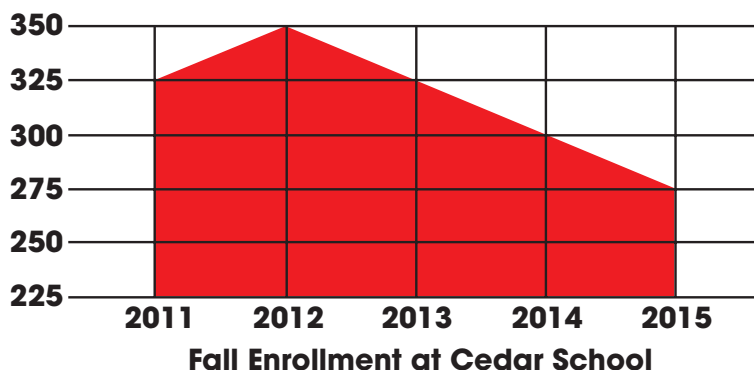
- Would picture graphs be appropriate to show the exact number of dogs living in America? Why or why not? _____

Line Graphs

Still another way to display information is a line graph. The same data can often be shown in both a bar graph and a line graph. Line graphs are especially useful in showing changes over a period of time.

The line graph in the example shows changes in the number of students enrolled in a school over a 5-year period. Enrollment was highest in 2012 and has decreased gradually each year since then. Notice how labeling the years and enrollment numbers make the graph easy to understand.

Example:

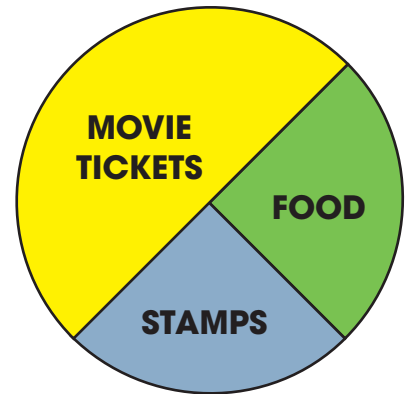


Directions: Complete the following exercises.

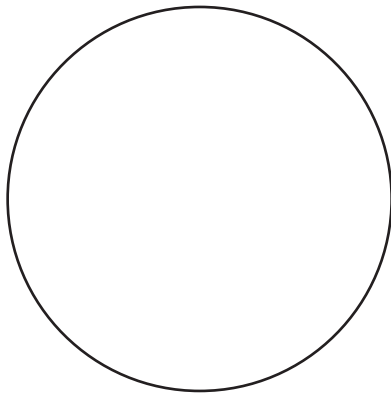
- On another sheet of paper, draw a line graph that displays the growth of a corn plant over a 6-week period. Mark the correct points, using the data below, and connect them with a line. After completing the graph, answer the questions. Data: week 1—3.5 in.; week 2—4.5 in.; week 3—5 in.; week 4—5.5 in.; week 5—5.75 in.; week 6—6 in.
 - Between which weeks was the growth fastest? _____
 - Between which weeks was the growth slowest? _____
- On another sheet of paper, draw a line graph to show how the high temperature varied during one week. Then answer the questions. Data: Sunday—high of 53 degrees; Monday—51; Tuesday—56; Wednesday—60; Thursday—58; Friday—67; Saturday—73. Don't forget to label the numbers.
 - In general, did the days get warmer or cooler? _____
 - Do you think this data would have been as clear in a bar graph? _____
Explain your answer.

Circle Graphs

Circle graphs are useful in showing how something is divided into parts. The circle graph in the example shows how Carly spent her \$10 allowance. Each section is a fraction of her whole allowance. For example, the movie tickets section is $\frac{1}{2}$ of the circle, showing that she spent $\frac{1}{2}$ of her allowance, \$5, on movie tickets.



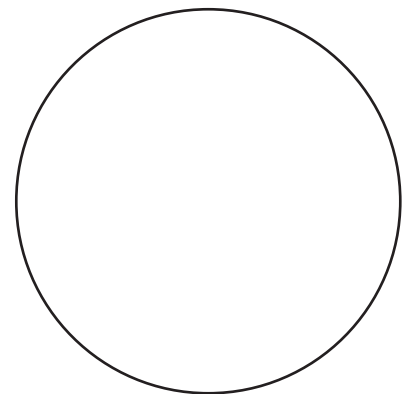
Directions: Complete the following exercises.



1. When the middle school opened last fall, $\frac{1}{2}$ of the students came from East Elementary, $\frac{1}{4}$ came from West Elementary, $\frac{1}{8}$ came from North Elementary, and the remaining students moved into the town from other cities. Make a circle graph showing these proportions. Label each section. Then, answer the questions.

- a. What fraction of students at the new school moved into the area from other cities? _____
- b. If the new middle school has 450 students enrolled, how many used to go to East Elementary? _____

2. This circle graph will show the hair color of 24 students in one class. Divide the circle into 4 sections to show this data: black hair—8 students; brown hair—10 students; blonde hair—4 students; red hair—2 students. (Hint: 8 students are $\frac{8}{24}$ or $\frac{1}{3}$ of the class.) Be sure to label each section by hair color. Then, answer the questions.



- a. Looking at your graph, what fraction of the class is the combined group of blonde- and red-haired students? _____
- b. Which two fractions of hair color combine to total half the class? _____

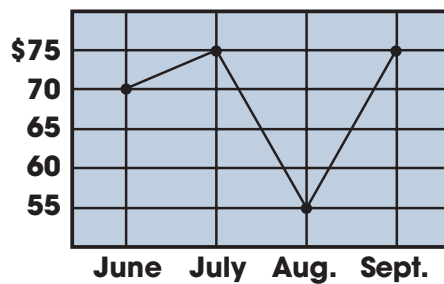
Comparing Presentation Methods

Tables and different kinds of graphs have different purposes. Some are more helpful for certain kinds of information. The table and three graphs below all show basically the same information—the amount of money Owen and Leyla made in their lawn-mowing business over a 4-month period.

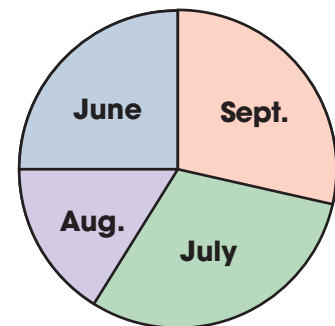
Combined Income per Month

	Owen	Leyla
June	\$34	\$36
July	41	35
August	27	28
Sept.	36	40
Totals	\$138	\$139

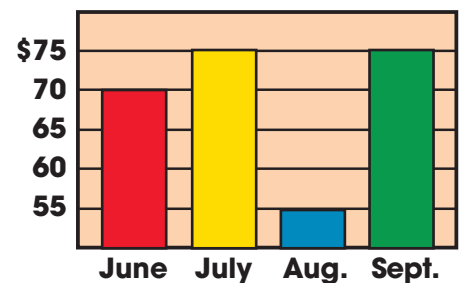
Combined Income per Month



Combined Income per Month



Combined Income per Month



Directions: Study the graphs and table. Then, circle the one that answers each question below.

- Which one shows the fraction of the total income that Owen and Leyla made in August?

table line graph bar graph circle graph
- Which one compares Owen’s earnings with Leyla’s?

table line graph bar graph circle graph
- Which one has the most exact numbers?

table line graph bar graph circle graph
- Which one has no numbers?

table line graph bar graph circle graph
- Which two best show how Owen and Leyla’s income changed from month to month?

table line graph bar graph circle graph

Graphing Data

Directions: Complete the following exercises.

1. Use the following information to create a bar graph.

Cities	Population (in 1,000s)
Dover	20
Newton Falls	12
Springdale	25
Hampton	17
Riverside	5

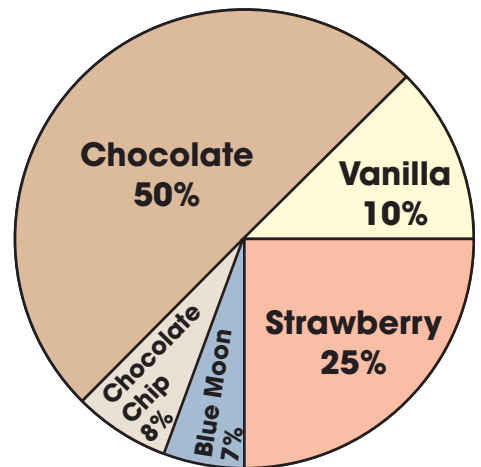
2. Study the data, and create a line graph showing the number of baskets Jonah scored during the season.

- Game 1 — 10
- Game 2 — 7
- Game 3 — 11
- Game 4 — 10
- Game 5 — 9
- Game 6 — 5
- Game 7 — 9

- Fill in the blanks.
- a. High game: _____
 - b. Low game: _____
 - c. Average baskets per game: _____

3. Study the graph, then answer the questions.

- a. Which flavor is the most popular? _____
- b. Which flavor sold the least? _____
- c. What decimal represents the two highest sellers? _____
- d. Which flavor had $\frac{1}{10}$ of the sales? _____

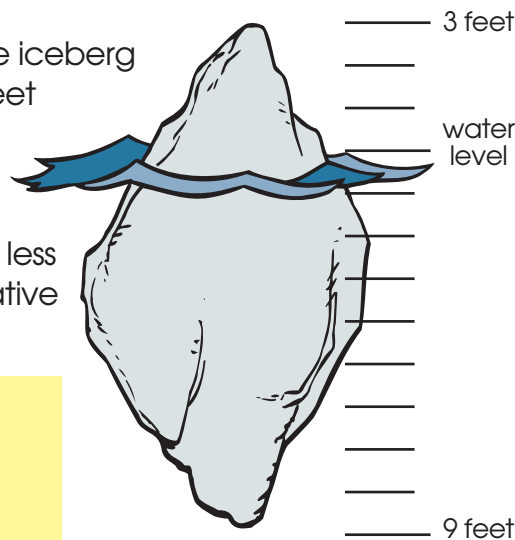


Frozen Yogurt Sales

Integers

An **integer** is a whole number above or below 0: $-2, -1, 0, +1, +2$, and so on. **Opposite integers** are two integers the same distance from 0, but in different directions, such as -2 and $+2$.

Think of the water level in the picture as 0. The part of the iceberg sticking out of the water is positive. The iceberg has $+3$ feet above water. The part of the iceberg below the water is negative. The iceberg extends -9 feet under water.



Numbers greater than 0 are **positive** numbers. Numbers less than 0 are **negative** numbers. Pairs of positive and negative numbers are called **opposite integers**.

Examples of opposite integers:

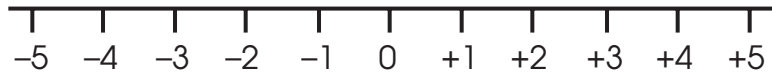
- 5 and +5
- losing 3 pounds and gaining 3 pounds
- earning \$12 and spending \$12

Directions: Complete the following exercises.

1. Write each of these as an integer. The first one is done for you.
 - a. positive 6 = +6
 - b. losing \$5 = _____
 - c. 5 degrees below 0 = _____
 - d. receiving \$12 = _____
2. Write the **opposite** integer of each of these. The first one is done for you.
 - a. negative 4 = +4
 - b. positive 10 = _____
 - c. 2 floors below ground level = _____
 - d. winning a card game by 6 points = _____
3. Write integers to show each idea.
 - a. A train that arrives 2 hours after it was scheduled: _____
 - b. A package that has 3 fewer cups than it should: _____
 - c. A board that's 3 inches too short: _____
 - d. A golf score 5 over par: _____
 - e. A paycheck that doesn't cover \$35 of a family's expenses: _____
 - f. 30 seconds before a missile launch: _____
 - g. A team that won 6 games and lost 2: _____

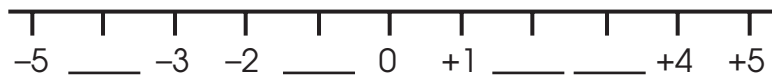
Comparing Integers

Comparing two integers can be confusing unless you think of them as being on a number line, as shown below. Remember that the integer farther to the right is greater. Thus, +2 is greater than -3, 0 is greater than -4, and -2 is greater than -5.



Directions: Study the number line. Then, complete the following exercises.

1. Write in integers to complete the number line.



2. Write < for "less than" or > for "greater than" to compare the integers. The first one is done for you.

a. $-5 < +5$

b. $+3$ _____ -3

c. $+2$ _____ -4

d. -4 _____ -3

e. -1 _____ $+3$

f. -1 _____ -5

3. Write **T** for true or **F** for false. (All degrees are in Fahrenheit.)

a. +7 degrees is colder than -3 degrees.

b. -14 degrees is colder than -7 degrees.

c. +23 degrees is colder than -44 degrees.

d. -5 degrees is colder than +4 degrees.

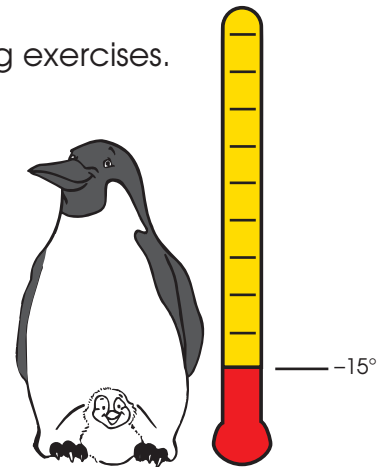
4. Draw an **X** by the series of integers that are in order from least to greatest.

_____ +2, +3, -4

_____ -3, 0, +1

_____ -7, -4, -1

_____ -3, -4, -5



Adding Integers

The sum of two positive integers is a positive integer.

Thus, $+4 + +1 = +5$.

The sum of two negative integers is a negative integer.

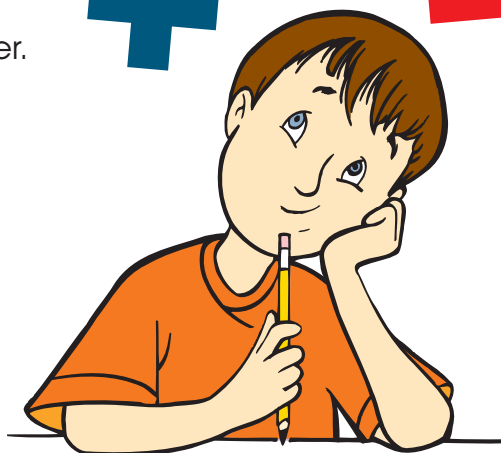
Thus, $-5 + -2 = -7$.

The sum of a positive and a negative integer has the sign of the integer that is farther from 0.

Thus, $-6 + +3 = -3$.

The sum of opposite integers is 0.

Thus, $+2 + -2 = 0$



Directions: Complete the following exercises.

1. Add these integers.

- a. $+2 + +7 = \underline{\hspace{2cm}}$ b. $-4 + -2 = \underline{\hspace{2cm}}$ c. $+5 + -3 = \underline{\hspace{2cm}}$ d. $+4 + -4 = \underline{\hspace{2cm}}$
 e. $-10 + -2 = \underline{\hspace{2cm}}$ f. $+6 + -1 = \underline{\hspace{2cm}}$ g. $+45 + -30 = \underline{\hspace{2cm}}$ h. $-39 + +26 = \underline{\hspace{2cm}}$

2. Write the problems as integers. The first one has been done for you.

a. One cold morning, the temperature was -14 degrees. The afternoon high was 20 degrees warmer. What was the high temperature that day?

$-14 + +20 = +6$

b. Another day, the high temperature was 26 degrees, but the temperature dropped 35 degrees during the night. What was the low that night?

c. Valentina's allowance was \$10. She paid \$7 for a movie ticket. How much money did she have left?

d. The temperature in a meat freezer was -10 degrees, but the power went off and the temperature rose 6 degrees. How cold was the freezer then?

e. The school carnival took in \$235, but it had expenses of \$185. How much money did the carnival make after paying its expenses?

Subtracting Integers

To subtract an integer, change its sign to the opposite and add it. If you are subtracting a negative integer, make it positive and add it: $+4 - -6 = +4 + +6 = +10$. If you are subtracting a positive integer, make it negative and add it: $+8 - +2 = +8 + -2 = +6$.

More examples: $-5 - -8 = -5 + +8 = +3$
 $+3 - +7 = +3 + -7 = -4$

-7
+10
+4
-2

Directions: Complete the following exercises.

1. Before subtracting these integers, rewrite each problem. The first one has been done for you.

$$-6 - -8 = \underline{-6 + +8 = +2} \quad +3 - -4 = \underline{\hspace{2cm}}$$

$$+9 - +3 = \underline{\hspace{2cm}} \quad -1 - -7 = \underline{\hspace{2cm}}$$

$$+7 - -5 = \underline{\hspace{2cm}} \quad -4 - +3 = \underline{\hspace{2cm}}$$

2. Write these problems as integers. The first one is done for you.

a. The high temperature in the Arctic Circle one day was -42 degrees. The low was -67 degrees. What was the difference between the two? $\underline{-42 - -67 = -42 + +67 = +25}$

b. At the equator one day, the high temperature was $+106$ degrees. The low was $+85$ degrees. What was the difference between the two? $\underline{\hspace{2cm}}$

c. At George's house one morning, the thermometer showed it was $+7$ degrees. The radio announcer said it was -2 degrees. What is the difference between the two temperatures? $\underline{\hspace{2cm}}$

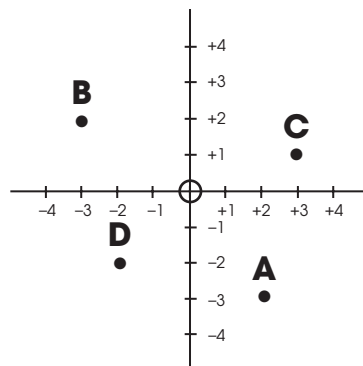
d. What is the difference between a temperature of $+11$ degrees and a wind-chill factor of -15 degrees? $\underline{\hspace{2cm}}$

e. During a dry spell, the level of a river dropped from 3 feet above normal to 13 feet below normal. How many feet did it drop? $\underline{\hspace{2cm}}$

f. Here are the average temperatures in a meat freezer for four days: -12 , -11 , -14 , and -9 degrees. What is the difference between the highest and lowest temperature? $\underline{\hspace{2cm}}$

Plotting Graphs

A graph with horizontal and vertical number lines can show the location of certain points. The horizontal number line is called the **x-axis**, and the vertical number line is called the **y-axis**. Two numbers, called the **x coordinate** and the **y coordinate**, show where a point is on the graph.



The first coordinate, x , tells how many units to the right or left of 0 the point is located. On the example graph, point A is +2, two units to the right of 0.

The second coordinate, y , tells how many units above or below 0 the point is located. On the example, point A is -3, three units below 0.

Thus, the coordinates of A are +2, -3. The coordinates of B are -3, +2. (Notice the order of the coordinates.) The coordinates of C are +3, +1; and D, -2, -2.

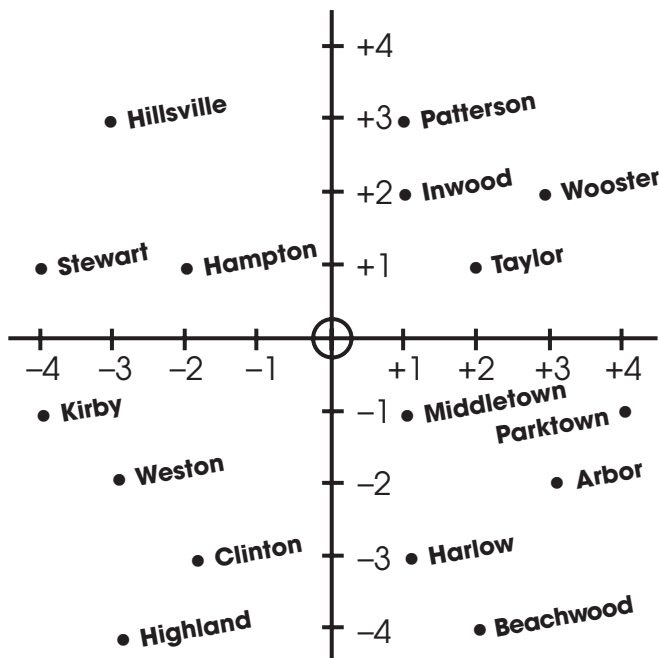
Directions: Study the example. Then, answer these questions about the graph below.

1. What towns are at these coordinates?

- +1, +3 _____
- +1, -3 _____
- 4, +1 _____
- 2, -3 _____
- 3, -2 _____
- 3, +3 _____

2. What are the coordinates of these towns?

- Hampton _____
- Wooster _____
- Beachwood _____
- Middletown _____
- Kirby _____
- Arbor _____

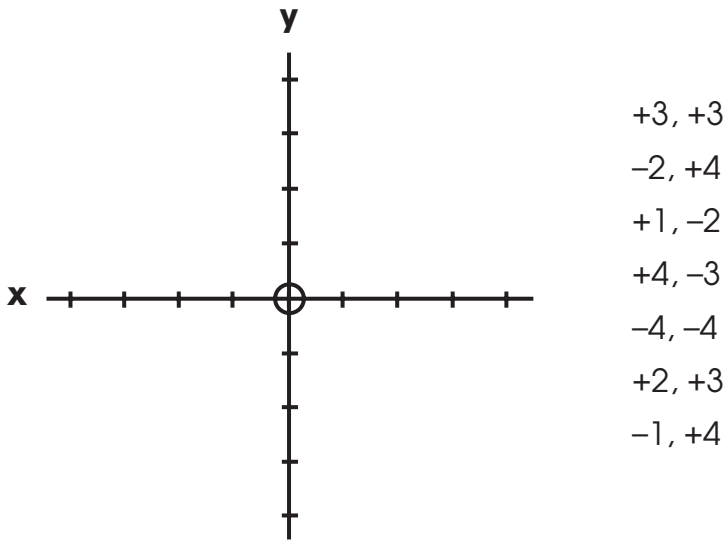


Ordered Pairs

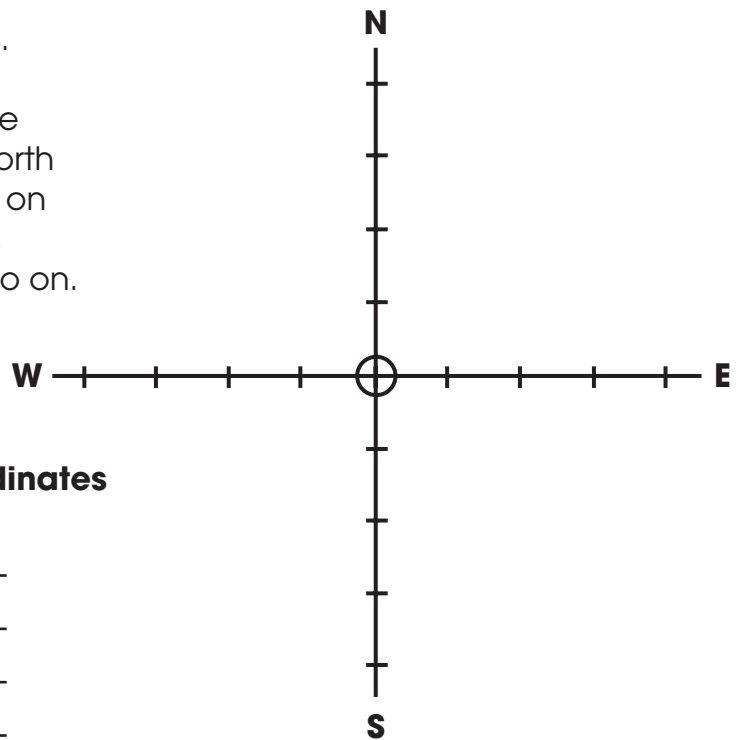
Ordered pairs is another term used to describe pairs of integers used to locate points on a graph.

Directions: Complete the following exercises.

1. Place the following points on the graph, using the ordered pairs as data.



2. Create your own set of ordered pairs. Use your home as the center of your coordinates—zero. Let the x-axis serve as East and West. The y-axis will be North and South. Now, select things to plot on your graph—the school, playground, grocery store, a friend’s house, and so on.



Place	Ordered pair of coordinates
School	_____
Grocery store	_____
Playground	_____
Friend’s house	_____

Review

Directions: Complete the following exercises.

1. Write the **opposite** integers of the following:

a. 14 degrees above 0 _____

b. Spending \$21 _____

2. Write integers to show these ideas.

a. 4 seconds after the launch of the space shuttle _____

b. A lake 3 feet below its usual level _____

c. 2 days before your birthday _____

3. Write < for "less than" or > for "greater than" to compare these integers.

-2 _____ -4

+2 _____ -3

-1 _____ +1

4. Add the integers.

-14 + -11 = _____

-6 + +5 = _____

-7 + +7 = _____

5. Subtract the integers.

-4 - -5 = _____

+3 - -6 = _____

+7 - +2 = _____

6. Write **T** for true or **F** for false.

a. The x coordinate is on the horizontal number line. _____

b. Add the x and y coordinates to find the location of a point. _____

c. Always state the x coordinate first. _____

d. A y coordinate of +2 would be above the horizontal number line. _____

e. An x coordinate of +2 would be to the right of the vertical number line. _____

Acrostic: A poem that uses the letters of a word to begin each line. When read down, the first letter of each line spells the word.

Acute Angle: An angle of less than 90 degrees.

Adverb: A word that tells something about a verb, an adjective, or another adverb. It answers the questions *when*, *where*, or *how*.

Analogy: A comparison showing how two things relate to each other. Example: *Nose is to smell as tongue is to taste* (nose : smell :: tongue : taste).

Angle: The amount of space where two lines meet.

Antecedent: The noun or nouns to which a pronoun refers.

Antonym: A word that means the opposite of another word.

Appositive: A noun or pronoun placed after another noun or pronoun to further identify it.

Area: The number of square units that covers a certain space.

Author's Purpose: The reason why an author writes a particular story or book.

Average: A value that lies within a range of values.

Biographical Dictionary: A book containing histories of people's lives.

Biography: A written history of a person's life.

Cause: The reason something happens.

Chapter: Parts into which some books are divided.

Character: A person in a story.

Classifying: Placing similar things into categories.

Column: A regular feature in a magazine or newspaper, often written by the same person, that states an opinion.

Columnist: A person who writes a column.

Combining Form: A word or word base used in forming words. Example: *tele* in *telephone*.

Command: A sentence telling someone to do something. It ends in a period or exclamation mark.

Comparative Adjectives: Compare two persons, places, things, or ideas.

Comparison: A way to show how things are alike or different.

Complete Sentence: A sentence that has both a simple subject and a simple predicate.

Comprehension: Understanding what is seen, read, or heard.

Conclusion Sentences: End a paragraph. They often restate the main idea.

Congruent Shapes: Identical geometric shapes. They can face in different directions.

GLOSSARY

Conjunction: A word that joins two or more sentences, words, or ideas.

Connotation: The meaning of a word, including all the emotions associated with it.

Cubic Unit: A unit with six equal sides, like a child's block.

Customary System: Measures length in inches and feet, capacity in cups and pints, weight in ounces and pounds, and temperature in Fahrenheit.

Dangling Modifier: A word, or words, that does not modify what it is meant to modify.

Data: Gathered information (*datum*—singular).

Decimal: A number that includes a period called a decimal point. The digits to the right of the decimal point are a value less than one.

Denominator: The bottom number in a fraction.

Denotation: The literal or dictionary definition of a word.

Dialogue: The words spoken by characters in a story.

Diamanté: A seven-line poem in the shape of a diamond.

Digit: A numeral.

Direct Object: A noun or pronoun that answers “what” or “whom” after the verb.

Dividend: The number to be divided in a division problem.

Divisor: What happens as a result of the cause.

Effect: A syllable at the end of a word that changes its meaning.

Entertain: To hold the attention of or to amuse someone.

Epitaph: A verse written on a tombstone, very popular in the past.

Equation: A number sentence in which the value on the left of the equal sign must equal the value on the right of the equal sign.

Equilateral Triangle: A triangle with three equal sides.

Equivalent Fractions: Fractions that name the same amount, such as $\frac{1}{2}$ and $\frac{5}{10}$.

Estimating: Using an approximate number instead of an exact one.

Exclamation: A sentence that shows strong feeling or excitement. It ends with an exclamation mark.

Expanded Notation: Writing out the value of each digit in a number.

Fact: Information that can be proven to be true. Example: Hawaii is a state.

Faulty Parallelism: When parts of a sentence do not match grammatically or structurally.

Feature: A specific type of article in a magazine or newspaper.

Fraction: A number that names part of something.

Free Verse: Poems that do not rhyme and do not have a regular rhythm.

Future Tense: Explains what will happen.

Gaelic Lullaby: An ancient Irish or Scottish song some parents sing as they rock their babies to sleep.

Generalization: A statement or rule that applies to many situations or examples.

Geometry: The study of lines and angles, the shapes they create, and how they relate to one another.

Giving Directions: Providing clear information explaining how to do or create something.

Greatest Common Factor (GCF): The largest number that will divide evenly into a set of numbers.

Haiku: A Japanese verse of three lines having five, seven, and five syllables each.

Homographs: Words that have the same spelling but different meanings.

Homophones: Words that sound alike but have different spellings and meanings.

Idiom: A phrase that says one thing but actually means something quite different.

Imagery: A picture that comes into the reader's mind when reading certain words.

Improper Fraction: A fraction that has a larger numerator than its denominator.

Independent Clause: Part of a sentence that contains a complete idea. It can stand alone.

Index: An alphabetical listing of names, topics, and important words that is found in the back of a book.

Indirect Object: A noun or pronoun that tells "to whom" or "what" or "for whom" or "what" the action is performed.

Inform: To give factual information.

Integers: Numbers above or below zero: -2 , -1 , 0 , $+1$, $+2$, and so on.

Interrogative Pronoun: A pronoun used to ask a question. *Who*, *what*, and *which* are interrogative pronouns.

Irregular Verb: A verb whose past tense is not formed by adding *ed*.

Isosceles Triangle: A triangle with two equal sides.

Least Common Multiple (LCM): The lowest possible multiple any pair of numbers have in common.

Limerick: A humorous verse consisting of five lines with the first, second, and fifth lines rhyming, and the third and fourth lines rhyming.

Main Idea: The most important idea, or main points, in a sentence, paragraph, or story.

GLOSSARY

Making Inferences: Being able to come to conclusions based on what is suggested in the text.

Magazine: A periodical, regularly printed, containing articles, photographs, advertisements, etc.

Mean: The average of a group of numbers.

Median: The number in the middle when numbers are listed in order.

Metaphor: A figure of speech that directly compares one thing to another.
Example: *The grass is a velvet carpet.*

Metric System: Measures length in meters, capacity in liters, mass in grams, and temperature in Celsius.

Mixed Number: A whole number and a fraction, such as $1\frac{1}{2}$.

Negative Numbers: Numbers less than zero.

Noun: A word that names a person, place, thing, or idea.

Numerator: The top number in a fraction.

Object of a Preposition: The noun or pronoun that follows a preposition and adds to its meaning.

Obtuse Angle: An angle of more than 90 degrees.

Opinion: A statement that expresses how someone feels or what he or she thinks about something. It cannot be proven.

Opposite Integers: Two integers the same distance from 0 but in different directions, such as -2 and +2.

Ordered Pairs: Another term used to describe two integers used to locate points on a graph.

Outline: A skeletal description of the main ideas and important details of a reading selection.

Paragraph: A group of sentences that tells about one main idea.

Parallel: Parts of a sentence that match grammatically and structurally.

Parallelogram: Has four parallel sides, with the opposite sides of equal length.

Paraphrase: To restate something in your own words.

Past Tense: Explains what has already happened.

Percent: A kind of ratio that compares a number with 100.

Perimeter: The distance around a shape formed by straight lines, such as a square.

Personal Pronoun: A word that takes the place of a noun. It refers to a person or a thing.

Personification: A figure of speech in which human characteristics are given to an animal or object.

Persuade: To convince someone to believe what is being stated.

Place Value: The position of a digit in a number.

Plot: The problem characters in a story face and how they solve it.

Plural: A word that refers to more than one thing.

Point of View: How a person or character in a story feels about an event and reacts to it.

Positive Adjectives: The adjectives themselves.

Positive Numbers: Numbers greater than zero.

Possessive Noun: A noun that shows ownership. Examples: *Jill's book* or *the women's hair*.

Possessive Pronoun: A pronoun that shows ownership. Examples: *mine, his, hers, yours, its, ours, and theirs*.

Predicate: A word, or several words, that tells what the subject does or that it exists.

Prefix: A syllable added to the beginning of a word that changes its meaning.

Preposition: A word that comes before a noun or pronoun and shows the relationship of that noun or pronoun to some other word in the sentence.

Prepositional Phrase: A group of words that includes a preposition, the object of the preposition, and all modifiers.

Present Tense: Explains what is happening now.

Probability: The ratio of favorable outcomes to possible outcomes in an experiment.

Pronoun: A word that takes the place of a noun. Examples: *I, he, she, we, it, you* and *them*.

Proportion: A statement that two ratios are equal.

Proverb: A bit of advice for daily life.

Quadrilateral: A shape with four sides and four angles.

Question: A sentence that asks something. It ends with a question mark.

Quotient: The answer in a division problem.

Range: The difference between the highest and lowest number in a group of numbers.

Ratio: A comparison of two quantities.

Recalling Details: Being able to pick out and remember the who, what, when, where, why, and how of what is read.

Reciprocals: Two fractions that, when multiplied together, make 1, such as $\frac{2}{7}$ and $\frac{7}{2}$.

GLOSSARY

Rectangle: Has four parallel sides, but only its opposite sides are equal lengths; it has four 90-degree angles.

Right Angle: An angle of 90 degrees.

Root Word: A word that is the common stem from which related words get their meanings.

Rounding: Expressing a number to the nearest whole number, ten, thousand, or other value.

Run-On Sentence: Two or more sentences joined together without punctuation or a joining word.

Scalene Triangle: A triangle with no equal sides.

Scan: To look for certain words in a reading selection to locate facts or answer questions.

Sections: Segments of each unit in a book.

Sentence Fragment: A phrase, not a complete sentence.

Sequencing: Placing items or events in logical order.

Setting: Where and when an event or story takes place.

Similar Shapes: The same geometric shape in differing sizes.

Simile: A figure of speech comparing two things, using the words *like* or *as*.
Example: She was as quiet as a mouse.

Simple Predicate: A verb in a sentence telling what the subject does, is doing, did, or will do.

Simple Subject: A noun or pronoun that tells who or what the sentence is about.

Singular: A word that refers to only one thing.

Skim: To read quickly to get a general idea of what a reading selection is about.

Square: Has four parallel sides of equal length and four 90-degree angles.

Statement: A sentence that tells something. It ends with a period.

Straight Angle: An angle of 180 degrees.

Subentry: A smaller division of a subject.

Subject: 1. A word, or several words, that tells who or what a sentence is about; 2. The topic covered or the name of an item in an index; 3. The person in a biography.

Suffix: A syllable added to the end of a word that changes its meaning.

Summary: A brief retelling of the main ideas in a reading selection.

Superlative Adjectives: Compare more than two persons, places, things, or ideas.

Support Sentences: Provide details about the topic.

Syllable: A word or part of a word with only one vowel sound.

Symbolism: The use of something to stand for (symbolize) something else.

Symmetrical Shapes: Shapes that, when divided in half, are identical.

Synonym: A word that means the same or nearly the same as another word.

Table of Contents: A listing of headings and page numbers for chapters or articles located in the front of a book or magazine.

Tense: The way a verb is used to express time.

Topic Sentence: A sentence that states the main idea of a paragraph and is usually the first sentence.

Trapezoid: Has two opposite sides that are parallel; its sides may or may not be of equal lengths.

Units: Parts into which a book is divided.

Using Prior Knowledge: Being able to use what one already knows to find an answer or get information.

Venn Diagram: A diagram used to chart information that shows similarities and differences between two things; used to compare and contrast two things.

Verb: A word in a sentence that tells what something does or that something exists.

Verb Tense: The way a verb expresses time.

Volume: The number of cubic units that fills a space.

X-Axis: The horizontal number line in a plotting graph.

X Coordinate/Y Coordinate: Show where a point is on a plotting graph.

Y-Axis: The vertical number line in a plotting graph.

Spelling: Words with *ā*

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- favorite _____
- gable _____
- dangerous _____
- patient _____
- lakefront _____
- statement _____
- nation _____
- negotiated _____
- operate _____
- decade _____



Directions: Write the answers.

- Which word means "a 10-year period"? decade
- Which word means "a triangle-shaped end of a building's roof"? gable
- Which word means "arbitrated"? negotiated

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Spelling: Words with *ē*

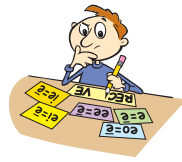
Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- niece _____
- meaningful _____
- cancelled _____
- baleen _____
- field _____
- disease _____
- reactivate _____
- peony _____
- seafaring _____
- theme _____

Directions: Write the answers.

- Which word is a summer-blooming flower? peony
- Which word is a type of whale? baleen
- Which word is an illness? disease



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Spelling: Words with *ī*

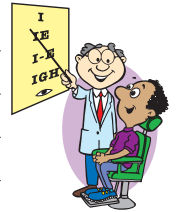
Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- bisect _____
- identify _____
- frightened _____
- glider _____
- idol _____
- library _____
- pipeline _____
- hieroglyphic _____
- rhinoceros _____
- silent _____

Directions: Write the answers.

- Which word means "to be scared"? frightened
- Which word means "to divide into two sections"? bisect
- Which word is an animal? rhinoceros
- Which word is a type of ancient writing? hieroglyphic



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Spelling: Words with *ō*

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- clothing _____
- slogan _____
- total _____
- stethoscope _____
- voltage _____
- stereo _____
- protein _____
- negotiate _____
- locust _____
- locomotive _____



Directions: Write the answers.

- Which word is an insect? locust
- Which word means "a train"? locomotive
- Which word means "a listening device to hear the heart"? stethoscope
- Which word means "to bargain"? negotiate

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Spelling: Words with *ū*

Directions: Write a sentence for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- universe _____
- cruise _____
- absolute _____
- influence _____
- unanimous _____
- vacuum _____
- putrid _____
- incubate _____
- peruse _____
- numerous _____

Directions: Write the answers.

- Which word means "to read carefully"? peruse
- Which word means "everyone is in agreement"? unanimous
- Which word means "a sea voyage taken for pleasure"? cruise
- Which word means "to keep eggs warm until they hatch"? incubate



Page 10

Spelling: *I* Before *E*, Except After *C*

Use an *i* before *e*, except after *c*, or when *e* and *i* together sound like long *a*.

Examples:
relieve
deceive
neighbor

Exceptions: weird, foreign, height, seize

Directions: Write **C** in the blank if the word in bold is spelled correctly. Write **X** in the blank if it is spelled incorrectly. The first one has been done for you.

- C 1. They stopped at the crossing for the **freight** train.
- X 2. How much does that **wieght**?
- C 3. Did you **believe** his story?
- X 4. He **recieved** an A on his paper!
- X 5. She said it was the **nieghborly** thing to do.
- C 6. The guards **seized** the package.
- X 7. That movie was **wierd**!
- X 8. Her **hieght** is five feet, six inches.
- C 9. It's not right to **deceive** others.
- X 10. Your answers should be **breif**.
- C 11. She felt a lot of **grief** when her dog died.
- X 12. He is still **greiving** about his loss.
- C 13. Did the police catch the **thief**?
- X 14. She was their **cheif** source of information.
- C 15. Can you speak a **foreign** language?



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Spelling: Words with ie and ei

Many people have trouble remembering when to use **ie** and when to use **ei**. The following rules have many exceptions, but they may be helpful to you.

Rule 1: If the two letters are pronounced like **ie** and are preceded by an **s** sound, use **ei**, as in **receive**.

Rule 2: If the two letters are pronounced like **ie** but are not preceded by an **s** sound, use **ie** as in **believe**.

Rule 3: If the two letters are pronounced like **ai**, use **ei** as in **eight** and **vein**.

Rule 4: If the two letters are pronounced like **i**, use **ei** as in **height**.

The sound **s** could be produced by the letter **s** as in **single** or the letter **c** as in **cease**.

Directions: Write the words from the box on the lines after the spelling rule that applies.

veil	brief	deceive	belief	niece
reindeer	yield	achieve	height	neighbor
grief	ceiling	weight	vein	seize

Rule 1: deceive, ceiling, seize

Rule 2: brief, belief, niece, yield, achieve, grief

Rule 3: veil, reindeer, weight, vein, neighbor

Rule 4: height

Directions: Complete the sentences with words that have the vowel sound shown. Use each word from the box only once.

- My next-door (e) neighbor wore a long (ai) veil at her wedding.
- Will the roof hold the (ai) weight of Santa's (ei) reindeer?
- My nephew and (ie) niece work hard to (ie) achieve their goals.
- I have a strong (ie) belief; they would never (ei) deceive me.
- For a (ei) brief moment, I thought Will would (ie) yield the game to me.
- The blood rushed through my (ei) vein.
- What is the (ie) height of this (ei) ceiling?



Spelling: Words with ur and or

The difference between **ur** and **or** is clear in the words **fur** and **for**. The **ur** sound can be spelled **ur** as in **fur**, **our** as in **journal**, **or** as in **her**, and **ear** as in **search**.

The **or** sound can be spelled **or** as in **for**, **our** as in **four**, **oar** as in **soar**, and **ore** as in **more**.

Directions: Write the words from the box on the lines to match the sounds.

florist	plural	ignore	courtesy	observe
survey	research	furnish	normal	emergency
tornado	coarse	flourish	source	restore

ur: plural, courtesy, observe, survey, research, furnish, emergency, flourish

or: florist, ignore, normal, tornado, coarse, source, restore

Directions: Complete the sentences with words that have the sound shown. Use each word only once.

- We all get along better when we remember to use (ur) courtesy.
- My brother likes flowers and wants to be a (or) florist.
- What was the (or) source of the (ur) research for your report?
- He waved at her, but she continued to (ur) ignore him.
- For a plural subject, use a (ur) plural verb.
- Beneath the dark clouds, a (or) tornado formed!
- Firefighters are used to handling an (ur) emergency.
- When will they be able to (or) restore our electricity?
- How are you going to (ur) furnish your apartment?

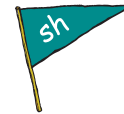


Spelling: Words Beginning with Sh and Th

Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- shallow: _____
- thimble: _____
- shear: _____
- sheff: _____
- thermal: _____
- throttle: _____
- shingle: _____
- shabby: _____
- thifty: _____
- shoreline: _____
- threaten: _____
- thyroid: _____



Directions: Use two of the above words in sentences. Answers will vary.

- _____
- _____

Spelling: Words Beginning with Ch

Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.

Answers will vary.

- chimney: _____
- china: _____
- cheetah: _____
- charity: _____
- channel: _____
- chandelier: _____
- challenge: _____
- chailman: _____
- champion: _____
- cheddar: _____
- chime: _____
- chisel: _____

Directions: Write the answers.

- Which word is a tool for shaping wood?
chisel
- Which word is a type of cheese?
cheddar
- Which word is an animal?
cheetah



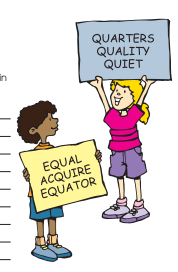
Spelling: The Letter Q

In English words, the letter **q** is always followed by the letter **u**.

Examples:
question
square
quick

Directions: Write the correct spelling of each word in the blank. The first one has been done for you.

- quill
- equality
- quarrel
- quarter
- quart
- quibble
- quench
- queen
- quip
- quiz
- equipment
- quiet
- quite
- equity
- equator
- equivalent
- equitable
- equestrian
- equation
- quantity



Spelling: Words with kw, ks, and gz Sounds

The consonant **q** is always followed by **u** in words and is pronounced **kw**. The letter **x** can be pronounced **ks** as in **mix**. When **x** is followed by a vowel, it is usually pronounced **gz** as in **example**.

Directions: Write the words from the box on the lines to match the sounds shown.

expense	exist	aquarium	acquire	request	exact
expand	exit	quality	expression	excellent	quantity
exhibit	equator	quartz	quilt	quiver	quack

kw: aquarium, acquire, request, quality, quantity, quiz, squirm

ks: expense, expand, excellent, expression

gz: exist, exact, exit, exhibit

Directions: Complete the sentences with words that have the sound shown. Use words from the box only once.

- We went to the zoo to see the fish (gz) exhibit.
- I didn't know its (gz) exact location, so we followed the map.
- The zoo plans to (kw) acquire some sharks for its (kw) aquarium.
- Taking care of sharks is a big (ks) expense, but a number of people have asked the zoo to (ks) expand its display of fish.
- These people want a better (kw) quality of fish, not a bigger (kw) quantity of them.
- I think the zoo already has an (ks) excellent display.
- Some of its rare fish no longer (gz) exist in the ocean.



ANSWER KEY

Spelling: Words with Silent Letters

Some letters in words are not pronounced, like the **b** in **crumb**, the **l** in **yolk**, the **n** in **autumn**, the **g** in **design**, and the **h** in **hour**.

Directions: Write the words from the box on the lines to match the silent letters. Use a dictionary if you are unsure of the meaning or pronunciation of a word.

condemn	yolk	campaign	assign	salmon
hymn	limb	chalk	tomb	foreign
resign	column	spaghetti	rhythm	solemn

n condemn, hymn, column, solemn

l yolk, chalk, salmon

g resign, campaign, assign, foreign

b limb, tomb

h spaghetti, rhythm

Directions: Write words from the box to complete these sentences.

1. What did the teacher (**g**) assign for homework?
2. She put words in a (**n**) column on the board.
3. When she finished writing, her hands were white with (**l**) chalk.
4. The church choir clapped in (**h**) rhythm with the (**n**) hymn.
5. While I was cracking an egg, the (**l**) yolk slipped onto the floor.
6. Did the explorers find anything in the ancient (**b**) tomb?
7. My favorite dinner of all is (**h**) spaghetti and meatballs.
8. Do not (**n**) condemn me for making one little mistake.



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Spelling: Words with ph or kn

The letters **ph** produce the same sound as the letter **f**. When the letters **kn** are together, the **k** is silent.

Directions: Write a definition for each word. Use a dictionary if you are unsure of the meaning of a word.

1. photographer: _____
2. knowledge: _____
3. knee: _____
4. telephone: _____
5. knock: _____
6. phonics: _____
7. physician: _____
8. knife: _____
9. pharmacy: _____
10. knight: _____
11. knut: _____
12. pheasant: _____

Answers will vary.

- Directions:** Write the answers.
13. Which word is a place to buy medicine? pharmacy
 14. Which word is a synonym for **doctor**? physician
 15. Which word names a bird? pheasant



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Spelling: Words with gh or gn

Directions: Use the clues and the words in the box to complete the crossword puzzle.

recognise	drought	assign
lightning	night	fought
straight	throughout	

Across: 3. My siblings and I _____ occasionally while growing up. 5. The teacher will _____ bus seats for the field trip. 7. _____ the storm, the rescue squads worked without stopping. 8. Do you _____ the woman you are meeting for lunch?

Down: 1. The _____ left farmers without crops. 2. My brother has _____ hair, but mine is curly. 4. Tomorrow _____ we will leave for Florida. 6. _____ struck the old barn on Walnut Hill.

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Root Words

A **root word** is the common stem that gives related words their basic meanings.

Example: **Separate** is the root word for **separately, separation, inseparable, and separator**.

Directions: Identify the root word in each group of words. Look up the meaning of the root word in the dictionary, and write its definition. The first one has been done for you.

1. colorless, colorful, discolor, coloration
Root word: color
Definition: any coloring matter, dye, pigment or paint
2. creator, creation, creating, creative, recreate
Root word: create
Definition: to bring into being
3. remove, movement, movable, immovable, removable
Root word: move
Definition: to change the place or position of
4. contentment, malcontent, discontent, discontentment
Root word: content
Definition: happy with what one has
5. pleasure, displeasure, pleasing, pleasant, unpleasant
Root word: please
Definition: to be agreeable to
6. successor, unsuccessful, successful
Root word: success
Definition: a favorable outcome



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Greek and Latin Roots

Many word patterns in the English language are combinations of Greek or Latin words. When you know what part of a word means, you may be able to figure out the meaning of the rest of the word. For example, if **cycle** means "circle or wheel" and **bi** means "two," then you can figure out that **bicycle** means "two wheels." **Root words** are the words that longer words are based on. For example, **duct**, which means "to lead," is the root of **conduct** or **induct**. Look at the chart below. It has several root words and their meanings on it.

Root	Meaning	Example	Definition
act	to do	interact	to act with others
aqua	water	aquarium	dyed water
auto	self	automobile	to move oneself
cent	a hundred	centennial	one hundred years

Directions: Look at each word equation below. The meaning of one part is shown in parentheses. Consult the chart of root words to find the meaning of the other part. Write the meaning in the blank. Combine the two meanings. Write the dictionary definition in the space provided.

- Possible answers:**
1. react re (again) + act _____ to do _____ = _____ to do again
Dictionary definition: to act or do again
 2. automatic auto _____ self _____ + matic (having a mind) = self having a mind
Dictionary definition: self-acting or self-moving
 3. transact trans (across) + act _____ to do _____ = _____ to do across
Dictionary definition: to carry on or conduct business
 4. centimeter cent _____ a hundred _____ + meter (meter) = one hundred meters
Dictionary definition: one-hundredth of a meter
 5. aquanaut aqua _____ water _____ + nau (sailor) = water sailor
Dictionary definition: an underwater explorer



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Root Words

Root	Meaning	Example	Definition
cede	to go	precede	to go beyond
cept	seize	intercept	to seize during
duce	lead	deduce	to find the lead
fer	carry	interfere	to carry into
port	carry	transport	to carry across
spect	to look	inspect	to look in
tain	to hold	obtain	to gain by action
vene	to come	convene	to come to start

Directions: Complete the exercises below. **Possible answers:**

1. precede pre (before) + cede _____ to go _____ = _____ to go before
Dictionary definition: to be, go, or come before
2. report re (again) + port _____ carry _____ = carry again
Dictionary definition: to carry and repeat, as in a message
3. intervene inter (between) + vene _____ to come _____ = to come between
Dictionary definition: to come between
4. induce in (in) + duce _____ lead _____ = _____ lead in
Dictionary definition: lead by persuasion
5. retrospect retro (backward) + spect _____ to look _____ = to look backward
Dictionary definition: to look back on past events
6. refer re (again) + fer _____ to carry _____ = to carry again
Dictionary definition: to hand over for consideration
7. retain re (again) + tain _____ to hold _____ = to hold again
Dictionary definition: to keep possession of
8. concept con (with) + cept _____ seize _____ = seized with
Dictionary definition: a general notion or idea

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Prefixes

A **prefix** is a syllable added to the beginning of a word to change its meaning. The prefix **re** means "back" or "again," as in **return**. **Pre** means "before," as in **prepare**. **Dis** means "do the opposite," as in **disappear**. **In** and **im** both mean "not," as in **impossible**. (These two prefixes also have other meanings.) **Com** and **con** both mean "with," as in **companion** and **concert**. Use **im** and **con** with words that start with **p, b, or m**. Use **in** and **con** with words that begin with a vowel or other consonants.

Directions: Match each word from the box to its definition.

disbelieve	recite	connotation	impolite	preview
impolite	dislike	configuration	prevision	incomplete
invisible	dislike	confederate	recover	composition

- share another's feelings **compassion**
- not finished **incomplete**
- another meaning **connotation**
- become normal again **recover**
- take away confidence **dislike**
- look to the future **prevision**
- arrangement of parts **configuration**
- say from memory **recite**
- city **confederate**
- hate **dislike**
- look at **preview**
- rude **impolite**
- in a hurry **impatient**
- doubt **disbelieve**
- not seen **invisible**

Directions: Add the rest of the word to each prefix in these sentences. Use words from the box only once. Be sure to use the correct form of the word.

- When he **covered** from his cold, Jeff was **impatient** to get back to work.
- Jonah stared at the ghostly figure with **disbelief** and **dislike**.
- I'd like to **recite** that poem, but my memory of it is **incomplete**.
- She was very **impatient** during the movie **preview**.



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Prefixes

A **prefix** is a syllable added to the beginning of a word that changes its meaning. The prefixes **in, il, ir, or im** all mean "not."

Directions: Create new words by adding **in, il, ir, or im** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.



Prefix	Root Word	New Word
il	logical	illogical
il	literate	illiterate
im	patient	impatient
im	probable	improbable
ir	reversible	irreversible
ir	responsible	irresponsible
in	active	inactive
im	moral	immoral
ir	removable	irremovable
il	legible	illegible
im	mature	immature
im	perfect	imperfect

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Prefixes

The prefixes **un** and **non** also mean "not."

Examples:
Unhappy means "not happy."
Nonproductive means "not productive."



Directions: Divide each word into its prefix and root word. The first one has been done for you.

	Prefix	Root Word
1. unappreciated	un	appreciate
2. unlikely	un	like
3. unkempt	un	keep
4. untimely	un	time
5. nonstop	non	stop
6. nonsense	non	sense
7. nonprofit	non	profit
8. nonresident	non	reside

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

- She didn't reside at school. She was a **nonresident**.
- He couldn't stop talking. He talked **nonstop**.
- The company did not make a profit. It was a **nonprofit** company.
- She was not talking sense. She was talking **sense**.
- He visited at a bad time. His visit was **untimely**.
- No one appreciated his efforts. He felt **unappreciated**.
- He did not "keep up" his hair. His hair was **unkempt**.
- She was not likely to come. Her coming was **unlikely**.

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Prefixes

The prefixes **co, col, com, con,** and **cor** mean "with" or "together." The prefixes **anti, contra,** and **ob** mean "against."

Directions: Write each word's prefix and root word in the space provided.

Word	Prefix	Root Word
coexist	co	exist
concurrent	con	current
correlate	cor	relate
codependent	co	depend
antigravity	anti	gravity
contraband	contra	band

Directions: Use the words from the chart above to complete the sentences.

- When airplanes fly very high and then quickly drop down, they cause an **antigravity** effect.
- Materials that are illegal are called **contraband**.
- A dog and a cat can **coexist** in the same house if they get along well.
- Events that happen at the same time are **concurrent**.
- When two people rely on each other, they are said to be **codependent**.
- The textbook will **correlate** with the teacher's lectures.

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Prefixes

The prefixes **epi, hyper, over,** and **super** mean "above" or "over." The prefixes **under** and **sub** mean "under."

Directions: Write each word's prefix and root word in the space provided.

Word	Prefix	Root Word
hyperactive	hyper	active
overanxious	over	anxious
superimpose	super	impose
epilogue	epi	log
underestimate	under	estimate
subordinate	sub	ordinate



Directions: Use the words above to complete the following sentences.

- A photographer could **superimpose** one image on top of another.
- The **epilogue** of the book may tell additional information about the story.
- All the other children settled down for the night except the boy who was **hyperactive**.
- He could not sleep because he was **overanxious** about the upcoming trip.
- The company's president told his **subordinate** to take over some of the responsibilities.
- Just because you think you are weak, don't **underestimate** how strong you could be.

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Numerical Prefixes

Some prefixes are related to numbers. For example, in Latin **uni** means "one." The prefix **mono** means "one" in Greek. The chart below lists prefixes for numbers one through ten from both the Latin and Greek languages.

Number	Latin	Example	Greek	Example
1	uni	university	mon, mono	monopoly
2	du	duplex	di	digress
3	tri	tricycle	tri	trio
4	quad	quadrant	tetra	tetrameter
5	quin	quintuplets	penita	pentagon
6	sex	sexennial	hex	hexagon
7	sept	septuagenarian	hept	heptagon
8	oct	octopus	oct	octagon
9	nov	novena	enne	ennead (group of nine)
10	dec	decade	dec	decimal

Directions: Complete the exercises below.

- unicycle uni **one** + cycle (wheel) = **one wheel**
Dictionary definition: **one-wheeled vehicle**
- monogram mono **one** + gram (writing) = **one writing**
Dictionary definition: **interlaced initials of a name**
- sixtet sex **six** + tet (group) = **six group**
Dictionary definition: **a group of six**
- quadrant quad **four** + rant (part) = **four part**
Dictionary definition: **one of four parts**
- decigram dec **ten** + gram (gram) = **ten grams**
Dictionary definition: **one tenth of a gram**

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ANSWER KEY

Review

Roots	Meanings	Prefixes	Meanings
for	carry	dis	separate
graph	write	epi	upon, above
rupt	break	ex	out
tend	stretch	in	in
vade	go	trans	across



Directions: Complete the exercises below.

- invade in in + vade go = go in
Dictionary definition: to intrude upon
- disrupt dis separate + rupt break = separate break
Dictionary definition: to interrupt or disturb
- transfer trans across + fer carry = carry across
Dictionary definition: to carry or remove from one place to another
- extend ex out + tend stretch = stretch out
Dictionary definition: to stretch or draw out
- epigraph epi upon + graph write = upon write
Dictionary definition: an inscription

Directions: The prefixes **mono** and **uni** both mean "one." Write each word's prefix and root in the space provided.

Word	Prefix	Root
monotype	<u>mono</u>	<u>rhyme</u>
monosyllable	<u>mono</u>	<u>syllable</u>
unilingual	<u>uni</u>	<u>lingual</u>
uniparental	<u>uni</u>	<u>parent</u>
unilateral	<u>uni</u>	<u>lateral</u>

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Suffixes

A **suffix** is a syllable added to the end of a root word that changes its meaning.

When a word ends in silent **e**, keep the **e** before adding a suffix beginning with a consonant.

Example: amuse + ment = amusement

Exception: argue + ment = argument

When a word ends in silent **e**, drop the **e** before adding a suffix beginning with a vowel.

Example: amuse = amusing

Exceptions: hoeing, shoeing, canoeing



Directions: Write **C** on the blank if the word in bold is spelled correctly. Write **X** in the blank if it is spelled incorrectly. The first one has been done for you.

1. She was a woman of many **achievements**. C
2. He hated to hear their **arguments**. C
3. Do you want to go **canoeing**? X
4. He kept **urging** her to eat more dessert. X
5. She was not good at **deceiving** others. C
6. He **rarely** skipped lunch. C
7. Would you repeat that **announcement**? X
8. Bicycle **safety** was very important to him. C
9. Their constant **arguing** got on my nerves. X
10. He found that **shoeing** horses was not easy. C
11. The sun felt hot as they were **hoeing**. C
12. She was so **relieved** that she laughed. X

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Suffixes: Words Ending in Y

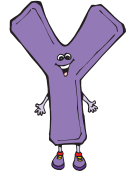
If a word ends in a vowel and **y**, keep the **y** when you add a suffix.

Example: bray + ed = brayed
bray + ing = braying

Exception: lay + ed = laid

If a word ends in a consonant and **y**, change the **y** to **i** when you add a suffix, unless the suffix begins with **i**.

Example: baby + ed = babied
baby + ing = babying



Directions: Write **C** in the blank if the word in bold is spelled correctly. Write **X** if it is spelled incorrectly. The first one has been done for you.

1. She was a good student who did well at her **studies**. C
2. Will you please stop **babing** him? X
3. She **layed** her purse on the couch. X
4. Both the **ferries** left on schedule. X
5. Could you repeat what he was **saying**? C
6. He was **trling** to do his best. X
7. How many **cherries** are in this pie? C
8. The cat **stayed** away for two weeks. C
9. He is **saving** all his money. X
10. The lake was **muddier** than I remembered. C
11. It was the **muddiest** lake I've ever seen! X
12. Her mother **babied** her when she was sick. C

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Suffixes: Doubling Final Consonants

If a one-syllable word ends in one vowel and consonant, double the last consonant when you add a suffix that begins with a vowel.

Examples: swim + ing = swimming big + er = bigger

Directions: Add the suffixes shown to the root words, doubling the final consonants when appropriate. The first one has been done for you.

1. brim + ing = brimming
2. big + est = biggest
3. hop + ing = hopping
4. swim + er = swimmer
5. thin + er = thinner
6. spin + ing = spinning
7. smack + ing = smacking
8. sink + ing = sinking
9. win + er = winner
10. thin + est = thinnest
11. slim + er = slimmer
12. slim + ing = slimming
13. thread + ing = threading
14. thread + er = threader
15. win + ing = winning
16. sing + ing = singing
17. stop + ing = stopping
18. thrill + ing = thrilling
19. drop + ed = dropped
20. mop + ing = mopping

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Suffixes: Doubling Final Consonants

When two-syllable words have the accent on the second syllable and end in a consonant preceded by a vowel, double the final consonant to add a suffix that begins with a vowel.

Examples: occur + ing = occurring occur + ed = occurred

If the accent shifts to the first syllable when the suffix is added to the two-syllable root word, the final consonant is not doubled.

Example: refer + ence = reference

Directions: Say the words listed to hear where the accent falls when the suffix is added. Then, add the suffix to the root word, doubling the final consonant when appropriate. The first one has been done for you.

1. excel + ence = excellence
2. infer + ing = inferring
3. regret + able = regrettable
4. control + able = controllable
5. submit + ing = submitting
6. confer + ing = conferring
7. refer + al = referral
8. differ + ing = differing
9. compel + ing = compelling
10. commit + ed = committed
11. regret + ing = regretting
12. depend + able = dependable
13. upset + ing = upsetting
14. propel + ing = propelling
15. repel + ed = repelled
16. prefer + ing = preferring
17. prefer + ence = preference
18. differ + ence = difference
19. refer + ing = referring
20. control + ing = controlling



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Suffixes

A **suffix** is a syllable added to the end of a word that changes its meaning. Some suffixes change nouns into adjectives.

Examples: fool — foolish nation — national

Other suffixes change adjectives into adverbs.

Examples: foolish — foolishly national — nationally

Directions: Match the root words with words from the box.

personal	stylish	obviously	professional
typical	childish	practical	medical
permanently	ticklish	additional	critical
gradually	physical	musical	



1. tickle ticklish
 2. critic critical
 3. add additional
 4. person personal
 5. child childish
 6. grade gradually
 7. practice practical
 8. physician physical
 9. permanent permanently
 10. medic medical
 11. type typical
 12. music musical
 13. style stylish
 14. obvious obviously
 15. profess professional
- Directions: Circle the word or words in each sentence that are a synonym for a word from the box. Write the word from the box on the line. The first one has been done for you.
16. Knowing how to cook is practical skill. practical
 17. The lake slowly warmed up. gradually
 18. Clearly should have stayed on the path. obviously
 19. That is a fashionable outfit. stylish
 20. Wanting your own way all the time is for little kids. childish
 21. Getting lost is common for me. typical
 22. My grades are a private matter. personal

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Suffixes: *ion, tion, and ation*

The suffixes **ion**, **tion**, and **ation** change verbs into nouns.

Examples: imitate + **ion** = **imitation** combine + **ation** = **combination**

Directions: Match each word from the box with its definition.

celebration	solution	imitation	exploration	selection
reflection	conversation	population	invitation	suggestion
combination	decoration	appreciation	definition	transportation

- a copy imitation
- talking conversation
- a request invitation
- the meaning definition
- a search exploration
- mirror image reflection
- cars, trucks transportation
- ornament decoration
- choice selection
- a party celebration
- the answer solution
- people population
- a joining combination
- new idea suggestion
- thankfulness appreciation

Directions: Write the correct forms of the words in the sentences. The first one has been done for you.

- transport** How are we transporting our project to school?
Did anyone arrange transportation?
- decorate** Today, we are decorating the classroom.
We brought the decorations from home.
- solve** Have you solved the problem yet?
We need a solution by the end of the day.

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Suffixes: *ment and ity*

The suffixes **ment** and **ity** change verbs and some adjectives to nouns.

Examples: treat — **treatment** able — **ability**

Directions: Circle the word or words in each sentence that are synonyms for words from the box. Write the word from the box on the line. The first one has been done for you.

equipment	responsibility	activity	treatment
accomplishment	adjustment	ability	appointment
assignment	personality	achievement	curiosity
popularity	astonishment	advertisement	

- The workers are bringing in their machines. equipment
- Whose duty is it to take out the trash? responsibility
- Do you know our homework for tonight? assignment
- I could see the surprise in his face. astonishment
- Ken is happy with his new position. appointment
- I was filled with wondering. curiosity
- She lists one achievement in particular. accomplishment
- Look at the exercise on page 16. activity
- The way you get along with others is part of your character. personality
- I heard that commercial had hundred times. advertisement
- Linh has a strong athletic skill. ability
- Jason's kindness led to his acceptance by his friends. popularity
- I need to make a change in my schedule. adjustment
- That is quite an accomplishment. achievement
- The doctor is trying another way to help my allergies. treatment

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Suffixes: *less and some*

The suffix **less** means "lacking" or "without." The suffix **some** means "full" or "like."

Examples: **hopeless** means "without hope."
awesome means "filled with awe."

Directions: Create new words by adding **some** or **less** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.

Root Word	Suffix	New Word
1. heart	+ <u>less</u>	= <u>heartless</u>
2. trouble	+ <u>some</u>	= <u>troublesome</u>
3. home	+ <u>less</u>	= <u>homeless</u>
4. humor	+ <u>less</u>	= <u>humorless</u>
5. awe	+ <u>some</u>	= <u>awesome</u>
6. child	+ <u>less</u>	= <u>childless</u>
7. win	+ <u>some</u>	= <u>winsome</u>

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

- Her smile was winning and delightful. She had a winsome smile.
- The mean man seemed to have no heart. He was heartless.
- She never smiled or laughed. She appeared to be humorless.
- The solar system fills me with awe. It is awesome.
- The couple had no children. They were childless.
- He had no place to live. He was homeless.
- The pet caused the family trouble. It was troublesome.

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Suffixes: *ship, ful, and ist*

Directions: Write the meaning of each word on the line. Use a dictionary if you are unsure of the meaning of a word.

- biologist: Answers will vary.
- citizenship: _____
- companionship: _____
- archaeologist: _____
- typist: _____
- scholarship: _____
- doubtful: _____
- hopeful: _____
- dictatorship: _____
- chemist: _____
- principals: _____
- artist: _____
- spiteful: _____
- professorship: _____
- geologist: _____

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Suffixes: *ance and ence*

Directions: Write words from the box to complete the sentences. Use a dictionary if you are unsure of the meaning of a word.

performance	experience
correspondence	reliance
evidence	sequence
maintenance	absence
dependence	insurance

- The daycare position required experience working with children.
- During her absence, a friend phoned each night with homework assignments.
- My grandmother is known for her self-reliance.
- The alphabet is a sequence of 26 letters.
- A letter to my penpal is called long distance correspondence.
- The circus advertised a 2:00 P.M. performance.
- Many people have a great reliance on calculators for math.
- Fortunately, most homeowners in the flooded area carried insurance.
- The police gathered evidence in hopes of solving the burglary.
- Maintenance of football and baseball fields requires much time and effort.

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Suffixes: *ment, ible, and able*

The suffix **ment** means "the act of" or "state of." The suffixes **ible** and **able** mean "able to."

Directions: Create new words by adding **ment**, **able**, or **ible** to these root words. Use a dictionary to check that the new words are correct. The first one has been done for you.

Root Word	Suffix	New Word
1. rely	+ <u>able</u>	= <u>reliable</u>
2. retire	+ <u>ment</u>	= <u>retirement</u>
3. sense	+ <u>ible</u>	= <u>sensible</u>
4. commit	+ <u>ment</u>	= <u>commitment</u>
5. repair	+ <u>able</u>	= <u>repairable</u>
6. love	+ <u>able</u>	= <u>lovable/loveable</u>
7. quote	+ <u>able</u>	= <u>quotable</u>
8. honor	+ <u>able</u>	= <u>honorable</u>

Directions: Use the clues in the first sentence to complete the second sentence with one of the words from the box. The first one has been done for you.

- Everyone loved her. She was lovable (also loveable).
- He had a lot of sense. He was sensible.
- She committed time to the project. She made a commitment.
- He always did the right thing. His behavior was honorable.
- The tire could not be fixed. It was not repairable.
- They would not buy the car. The car was not reliable.
- He gave the reporter good comments. His comments were quotable.
- She was ready to retire. She looked forward to retirement.

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Antonyms

An **antonym** is a word that means the opposite of another word.
Example: **hopeful** and **discouraged**

Directions: Circle the word or group of words in each sentence that is an antonym for a word in the box. Write the antonym from the box on the line.

nuisance	considerate
delicate	frivolous
entrance	shiny
divide	parallel
success	valley



- It seemed **as though** we'd never make it to the top of the **butte**.
_____ valley
- Rosa thought the woman was **rud** to the store clerk.
_____ considerate
- The two streets run **perpendicular** to each other.
_____ parallel
- The school carnival was a total **dis**aster due to the stormy weather.
_____ success
- Be sure to wash this **delic**ate sweater with other heavy items.
_____ delicate
- The **third**-grade class worked hard learning to **multi**ply.
_____ divide
- The **exit** was blocked by a table.
_____ entrance
- The purchase of the coat was quite **practical**.
_____ frivolous
- The teacher wrote that Colin was **joy** to have in class.
_____ nuisance
- The stone in her ring was **dull** and cloudy.
_____ shiny

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Spelling: Homophones

Homophones are words that sound the same but have different spellings and different meanings.

Examples: **night** and **knight**, **fair** and **fare**, **not** and **knot**



Directions: Complete each sentence with the correct homophone. Then, write a sentence using the other homophone. Use a dictionary if you don't know the meaning of a word. The first one has been done for you.
Sentences will vary.

- eight
ate
I ate two strawberries.
Aisha had eight strawberries.
- vein
vain
Since the newspaper printed his picture, Cam has been self-centered and vain.
- weight
wait
We had to wait a long time for the show to start.
- weigh
way
He always insists that we do everything his way.
- seize
seas
The explorers charted the seas.
- straight
strait
It is sometimes difficult to draw perfectly straight lines freehand.
- principle
principal
The principal summoned the student body to the auditorium for a special program.
- their
they're
I'm sure they're meeting us at the park rather than at home.

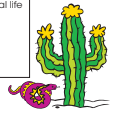
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Vocabulary Building: Homographs

A **homograph** has the same spelling as another word but a different meaning. The two words are often different parts of speech.

Directions: Write the definition from the box for the bold word in each sentence.

con'tract'	n.	an agreement to do something
con'tract'	v.	to reduce in size, shrink
des'ert'	n.	dry land that can support little plant and animal life
de'sert'	v.	to abandon
Pol'ish	adj.	of or belonging to Poland
pol'ish	v.	to smooth and brighten by rubbing
proj'ect'	n.	a proposal or undertaking
proj'ect'	v.	to send forth in thoughts or imagination



- Iron is one of the metals that **contracts** as it cools.
to reduce in size, shrink
- You will have to sign a **contract** before I can begin work on your house.
an agreement to do something
- The **desert** seems to come to life in the evening when the animals come out in search of food.
dry land that can support little plant and animal life
- I hope you will not **desert** your friends now that they really need your support.
to abandon
- She will **polish** the stone and then use it to make a necklace.
to smooth and brighten by rubbing
- My grandma is going to teach me to make an authentic **Polish** meal this weekend.
of or belonging to Poland
- Project** yourself into the world of tomorrow with this amazing invention!
to send forth in thoughts or imagination
- I started this **project** on Monday, but it may be weeks before I finish it.
a proposal or undertaking

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Vocabulary Building: Homographs

Directions: After each sentence, write the meaning of the bold word. Write another sentence using a homograph for the word.

- The owner of the pet store tied a bright red **bow** around the puppies' necks.
Sentences will vary.
 Meaning: a knot tied with a ribbon
 Sentence: _____



- Today, fewer pipes are made from **lead**.
 Meaning: a metal
 Sentence: _____
- Lia's new house is very **close** to ours.
 Meaning: near
 Sentence: _____
- Please **record** the time and day that we finished the project.
 Meaning: write down
 Sentence: _____
- It takes only a **minute** to fasten your seatbelt, but it can save your life.
 Meaning: 60 seconds
 Sentence: _____
- I cannot **subject** the animal to that kind of treatment.
 Meaning: expose
 Sentence: _____



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Multiple Meanings

Directions: Use a dictionary to write the meaning of the bold word in each sentence. Be sure the meaning fits the context of the sentence and the part of speech. The first one has been done for you.

Possible answers:

- Rata will **graduate** *summa cum laude*.
to receive an academic degree
- The **graduate** looked for suitable employment.
one who has graduated
- The woman balanced her purse on the **counter**.
a flat surface
- The boss **countered** the employee's request for a large raise.
opposed
- Julio Mentars will **conduct** the orchestra tonight.
direct or guide
- Melal **conducts** electricity.
conveys or transmits
- His **conduct** was questionable in that situation.
action or behavior
- Please **file** these reports today.
to put in a useful order
- The principal asked the students to leave in single **file**.
a row or line
- "Please hand me a **file**," said the woodworker to his daughter.
a tool used for smoothing rough surfaces

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Vocabulary Building: Multiple Meanings

Directions: Use a dictionary to choose the correct definition for each bold word. The first one has been done for you.

- My grandfather always has his **spectacles** perched on his nose.
 Meaning: lenses worn in front of the eyes to aid vision






- The Fourth of July fireworks display was an amazing **spectacle**.
 Meaning: dramatic public display
- We enjoy a rugged vacation, staying in a hunting **lodge** rather than a hotel.
 Meaning: large rustic cabin for vacationers
- Don't let the baby have hard candy, because it could **loose** in his throat.
 Meaning: get stuck
- Termites will **bore** through the rotten wood in our basement if we don't have it replaced.
 Meaning: make a hole by digging
- That television show could **bore** even a small child!
 Meaning: to weary by being dull
- Don't **resort** to lies just to get what you want!
 Meaning: to go back to habitually
- The **resort** is packed with tourists from May to September each year.
 Meaning: a place providing recreation and entertainment

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Vocabulary Building: Multiple Meanings

Directions: Read each sentence, then write another sentence using a different meaning for the bold word. **Answers will vary.**

- The prince will **succeed** his mother as ruler of the country. 
- All through the national anthem, Johnny was singing in the wrong **key**.
- There has been only a **trace** of rain this month.
- I can't get involved in a **cause** in which I don't really believe.
- It is very important to get plenty of **iron** in your diet. 
- A police officer can **issue** a warning to those disturbing the peace.
- There is a mayoral candidate from each of the major political **parties**.
- You can take that **stack** of newspapers to be recycled.
- The judge will likely **sentence** the offender to a year in prison. 
- The lawyer made a **motion** to have the charges dropped.



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Reading Skills: Classifying

Classifying is placing similar things into categories.

Example: January, May, and October can be classified as months.

Directions: Write a category name for each group of words.

- accordion clarinet trumpet **instruments** 
- wasp bumblebee mosquito **insects**
- antique elderly prehistoric **synonyms for "old"**
- chemist astronomer geologist **scientists** 
- nest cocoon burrow **animal homes**

Directions: In each row, draw an **X** through the word that does not belong. Then, write a sentence telling why it does not belong.

- encyclopedia atlas ~~novel~~ dictionary
A novel is not a reference book.
- bass ~~trout~~ tuna trout
An otter is not a fish.
- sister grandmother niece ~~uncle~~
An uncle is not a female relative.
- ~~bark~~ beech dogwood spruce
Bark is not a type of tree.
- pebble gravel boulder ~~cement~~
Cement is not a form of rock.
- spaniel ~~Siamese~~ collie Doberman
Siamese is not a dog breed.

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Reading Skills: Classifying

Directions: In each row, draw an **X** through the word that does not belong. Then, write a word that belongs.

- monkey lion zebra elephant ~~giraffe~~ **giraffe**
- daisies roses violets ~~sunflowers~~ **sunflowers**
- paper ~~stapler~~ pencil eraser stapler **paper clip**
- sister cousin father aunt ~~mother~~ **mother**
- hand mouth ~~nose~~ foot elbow **nose**
- shy ~~confused~~ happy angry sad **confused**
- puppy ~~chick~~ kitten cub lamb **chick**
- red blue ~~green~~ yellow purple **green**
- Earth Jupiter Saturn Mars ~~Neptune~~ **Neptune**
- ~~nightstand~~ bed desk dresser lamp **nightstand**

Directions: Name each category above.

- African animals**
- flowers**
- school/office supplies**
- relatives**
- body parts**
- feelings**
- baby animals**
- colors**
- planets**
- bedroom furniture**

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Reading Skills: Classifying

Directions: Write three things that would belong in each category below. The first one has been done for you. **Possible answers:**

- mammals
whale horse elephant
- rainforest animals
monkey parrot snake
- capital cities
Raleigh Columbus Austin
- oceans
Atlantic Pacific Arctic
- occupations
teacher photographer geologist
- Native American tribes
Cherokee Iroquois Wampanoag
- wars
World War I Revolutionary War Vietnam War
- planets
Mercury Venus Mars
- track and field sports
hurdles discus high jump
- famous Americans
Barack Obama Georgia O'Keeffe John Glenn

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Types of Analogies

An **analogy** shows similarities, or things in common, between a pair of words. The relationships between the words in analogies usually fall into these categories:

- Purpose** One word in the pair shows the **purpose** of the other word (scissors: cut).
- Antonyms** The words are **opposites** (light: dark).
- Part/whole** One word in the pair is a **part**; the other is a **whole** (leg: body).
- Action/object** One word in the pair involves an **action** with or to an **object** (fly: airplane).
- Association** One word in the pair is what you think of or **associate** when you see the other (cow: milk).
- Object/location** One word in the pair tells the **location** of where the other word, an **object**, is found (car: garage).
- Cause/effect** One word in the pair tells the **cause**; the other word shows the **effect** (practice: improvement).
- Synonyms** The words are **synonyms** (small: tiny).

Directions: Write the relationship between the words in each pair. The first two have been done for you.

- cow: farm **object/location**
- toe: foot **part/whole**
- watch: TV **action/object**
- bank: money **association**
- happy: unhappy **antonyms**
- listen: radio **action/object**
- inning: ballgame **part/whole**
- knife: cut **purpose**
- safe: dangerous **antonyms**
- carrots: soup **part/whole**

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Writing Analogies

Once you have determined the relationship between the words in the first pair, the next step is to find a similar relationship between another pair of words.

Examples:
Scissors is to cut as broom is to sweep.
Black is to white as up is to down.

Scissors cut. Brooms sweep. The first analogy shows the purpose of scissors and brooms. In the second example, up and down are antonyms, as are black and white.

Directions: Choose the correct word to complete each analogy. The first one has been done for you.

- Sky is to blue as grass is to**
A. earth B. green C. lawn D. yard **green**
- Snow is to winter as rain is to**
A. umbrella B. wet C. slicker D. spring **spring**
- Sun is to day as moon is to**
A. dark B. night C. stars D. blackness **night**
- 5 is to 10 as 15 is to**
A. 50 B. 25 C. 30 D. 40 **30**
- Collie is to dog as Siamese is to**
A. pet B. kitten C. baby D. cat **cat**
- Letter is to word as note is to**
A. tuba B. music C. instruments D. singer **music**
- 100 is to 10 as 1,000 is to**
A. 10 B. 200 C. 100 D. 10,000 **100**
- Back is to rear as pit is to**
A. peach B. hole C. dark D. punishment **hole**



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Analogies of Purpose

Directions: Choose the correct word to complete each analogy of purpose. The first one has been done for you.

- Knife is to cut as copy machine is to
A. duplicate B. paper C. copies D. office duplicate
- Bicycle is to ride as glass is to
A. dishes B. dinner C. drink D. break drink
- Hat is to cover as eraser is to
A. chalkboard B. pencil C. mistake D. erase erase
- Mystery is to clue as door is to
A. house B. key C. window D. open key
- Television is to see as speaker is to
A. sound B. hear C. play D. dance hear
- Clock is to time as ruler is to
A. height B. length C. measure D. inches measure
- Fry is to pan as bake is to
A. cookies B. dinner C. oven D. baker oven
- Bowl is to fruit as wrapper is to
A. present B. candy C. paper D. ribbon candy

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Antonym Analogies

Directions: Write antonyms for these words. Possible answers:

- run: walk
- start: finish
- laugh: cry
- dependent: independent
- young: old
- North: South
- sink: float
- success: failure
- combine: separate
- innocent: guilty
- polluted: clean
- leader: follower
- fascinate: bore
- man: woman
- awake: asleep
- begin: end
- increase: decrease
- reverse: forward
- enlarge: shrink
- East: West
- rural: urban
- amateur: professional
- patient: impatient
- rich: poor
- empty: full
- fancy: plain
- introduction: conclusion
- modern: old-fashioned

Directions: Write two antonym analogies of your own.

Answers will vary.

- _____
- _____
- _____

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Part/Whole Analogies

Directions: Determine whether each analogy is whole to part or part to whole by studying the relationship between the first pair of words. Then, choose the correct word to complete each analogy. The first one has been done for you.



- Shoestring is to shoe as brim is to
A. cup B. shade C. hat D. scarf hat
- Egg is to yolk as suit is to
A. clothes B. shoes C. business D. jacket jacket
- Stanza is to poem as verse is to
A. rhyme B. singing C. song D. music song
- Wave is to ocean as branch is to
A. stream B. lawn C. office D. tree tree
- Chicken is to farm as giraffe is to
A. animal B. zoo C. tail D. stripes zoo
- Finger is to nail as leg is to
A. arm B. torso C. knee D. walk knee
- Player is to team as inch is to
A. worm B. measure C. foot D. short foot
- Peak is to mountain as crest is to
A. wave B. ocean C. beach D. water wave

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Action/Object Analogies

Directions: Determine whether each analogy is action/object or object/object by studying the relationship between the first pair of words. Then, choose the correct word to complete each analogy. The first one has been done for you.

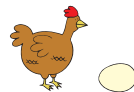


- Mow is to grass as shear is to
A. cut B. fleece C. sheep D. barber sheep
- Rod is to fishing as oven is to
A. police B. crime C. bake D. hunting bake
- Ship is to captain as airplane is to
A. fly B. airport C. pilot D. passenger pilot
- Car is to mechanic as body is to
A. patient B. doctor C. torso D. hospital doctor
- Cheat is to exam as swindle is to
A. criminal B. business C. crook D. crime business
- Actor is to stage as surgeon is to
A. patient B. hospital C. operating room D. knife operating room
- Ball is to throw as knife is to
A. cut B. spoon C. dinner D. silverware cut
- Lawyer is to trial as surgeon is to
A. patient B. hospital C. operation D. operating room operation

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Analogies of Association

Directions: Choose the correct word to complete each analogy. The first one has been done for you.



- Flowers are to spring as leaves are to
A. rakes B. trees C. fall D. green fall
- Ham is to eggs as butter is to
A. fat B. toast C. breakfast D. spread toast
- Bat is to swing as ball is to
A. throw B. dance C. base D. soft throw
- Chicken is to egg as cow is to
A. barn B. calf C. milk D. beef milk
- Bed is to sleep as chair is to
A. sit B. couch C. relax D. table sit
- Cube is to square as sphere is to
A. circle B. triangle C. hemisphere D. spear circle
- Kindness is to friend as cruelty is to
A. meanness B. enemy C. war D. unkindness enemy
- Pumpkin is to pie as chocolate is to
A. cake B. dark C. taste D. dessert cake

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Object/Location Analogies

Directions: Write a location word for each object. Possible answers:

- shirt: closet
- milk: refrigerator
- vase: table
- screwdriver: tool box
- cow: barn
- chalkboard: classroom
- shower: bathroom
- cucumbers: garden
- silverware: drawer
- car: garage
- pages: book
- bees: hive
- money: wallet
- salt water: ocean
- dress: clothing store
- ice cream: freezer
- table: kitchen
- medicine: pharmacy
- dog: kennel
- baseball: gym
- bed: bedroom
- roses: flower garden
- dishwasher: kitchen
- toys: toy chest
- cookies: cookie jar
- bird: tree
- seashells: beach
- asteroids: outer space

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Cause/Effect Analogies

Directions: Determine whether the analogy is cause/effect or effect/cause by studying the relationship between the first pair of words. Then, choose the correct word to complete each analogy. The first one has been done for you.



- Ashes are to **flame** as **darkness** is to
A. light B. daylight C. eclipse D. sun eclipse
- Strong** is to **exercising** as **elected** is to
A. office B. senator C. politician D. campaigning campaigning
- Fail** is to **pain** as **disobedience** is to
A. punishment B. morals C. behavior D. carelessness punishment
- Crying** is to **sorrow** as **smiling** is to
A. teeth B. mouth C. joy D. friends joy
- Germ** is to **disease** as **war** is to
A. soldiers B. enemies C. destruction D. tanks destruction
- Distraction** is to **noise** as **soothing** is to
A. balm B. warmth C. hugs D. music music
- Food** is to **nutrition** as **light** is to
A. vision B. darkness C. sunshine D. bulb vision
- Clouds** are to **rain** as **winds** are to
A. springtime B. hurricanes C. clouds D. March hurricanes

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Synonym Analogies

Directions: Write synonyms for these words. **Possible answers:**

- | | | | |
|----------------|--------------------|----------------|----------------------|
| 1. miniature: | <u>tiny</u> | 15. gigantic: | <u>huge</u> |
| 2. wind: | <u>breeze</u> | 16. rain: | <u>shower</u> |
| 3. picture: | <u>photo</u> | 17. cabinet: | <u>cupboard</u> |
| 4. quiet: | <u>silent</u> | 18. loud: | <u>noisy</u> |
| 5. run: | <u>jog</u> | 19. leap: | <u>jump</u> |
| 6. cloth: | <u>fabric</u> | 20. jeans: | <u>pants</u> |
| 7. mean: | <u>unkind</u> | 21. kind: | <u>considerate</u> |
| 8. cup: | <u>mug</u> | 22. dish: | <u>plate</u> |
| 9. sweet: | <u>kind</u> | 23. feline: | <u>cat</u> |
| 10. difficult: | <u>challenging</u> | 24. simple: | <u>uncomplicated</u> |
| 11. obey: | <u>conform</u> | 25. beautiful: | <u>lovely</u> |
| 12. plenty: | <u>enough</u> | 26. scorch: | <u>burn</u> |
| 13. scent: | <u>odor</u> | 27. story: | <u>tale</u> |
| 14. sudden: | <u>abrupt</u> | 28. thaw: | <u>defrost</u> |

Directions: Write two synonym analogies of your own.
Answers will vary.

- _____
- _____
- _____

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Reading Skills: Fact or Opinion?

A **fact** is information that can be proved. An **opinion** is information that tells how someone feels or what he or she thinks about something.

Directions: For each sentence, write **F** for fact or **O** for opinion. The first one has been done for you.

- F Each of the countries in South America has its own capital.
- O All South Americans are good swimmers.
- O People like the climate in Peru better than in Brazil.
- F The continent of South America is almost completely surrounded by water.
- F The only connection with another continent is a narrow strip of land, called the Isthmus of Panama, which links it to North America.
- F The Andes Mountains run all the way down the western edge of the continent.
- F The Andes are the longest continuous mountain barrier in the world.
- O The Andes are the most beautiful mountain range.
- F The Amazon River is the second longest river in the world—about 4,000 miles long.
- F Half of the people in South America are Brazilians.
- O Life in Brazil is better than life in other South American countries.
- O Brazil is the best place for South Americans to live.
- F Cape Horn is at the southern tip of South America.
- F The largest land animal in South America is the tapir, which reaches a length of 6 to 8 feet.

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Reading Skills: Fact or Opinion?

Directions: Read the paragraphs below. For each numbered sentence, write **F** for fact or **O** for opinion. Write the reason for your answer. The first one has been done for you.

(1) The two greatest poems in the history of the world are the *Iliad* and the *Odyssey*. (2) The *Iliad* is the story of the Trojan War; the *Odyssey* tells about the wanderings of the Greek hero Ulysses after the war. (3) These poems are so long that they each fill an entire book.

(4) The author of the poems, according to Greek legend, was a blind poet named Homer. (5) Almost nothing is known about Homer. (6) This indicates to me that it is possible that Homer never existed. (7) Maybe Homer existed but didn't write the *Iliad* and the *Odyssey*.

(8) Whether or not there was a Homer does not really matter. We have these wonderful poems, which are still being read more than 2,500 years after they were written.



- O Reason: This cannot be proven. People have different opinions about which are the greatest poems.
- F Reason: explains what the poems are about
- F Reason: tells how long the poems are
- F Reason: tells a fact about a Greek legend
- F Reason: tells that not much is known about Homer
- O Reason: not everyone thinks Homer did not exist
- O Reason: some people may believe this and some may not
- O Reason: some people may not agree with this

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Chilies

Directions: Read about chilies. Find the one opinion in each passage, and write it on the lines.



Chilies are hot or sweet peppers. They are part of the "nightshade" family of plants that also includes potatoes and tomatoes. Potatoes and tomatoes taste better than chilies, though.

Opinion: Potatoes and tomatoes taste better than chilies, though.

Opinion: European dishes taste better now than they did before chilies were used in them.

Although it is really a Mexican recipe, every intelligent American loves chili con carne. It is made with spicy meat, beans, and chilies. Today, most Americans call that dish "chili."

Opinion: Although it is really a Mexican recipe, every intelligent American loves chili con carne.

Some people think that all chilies are hot. Therefore, they never eat any of them. What a silly belief! There are many different kinds of red, yellow, and green chilies. Even red chilies can be sweet!

Opinion: What a silly belief!

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Carol's Country Restaurant

Directions: Write in the corresponding numbered blank below whether each numbered sentence gives a fact or an opinion.

(1) I have visited Carol's Country Restaurant seven times in the past two weeks. (2) The meals there are excellent. (3) They often feature country dishes such as meatloaf, ham with scalloped potatoes, and fried chicken.

(4) Owner Carol Murphy makes wonderful vegetable soup that includes all home-grown vegetables. (5) It's simmered with egg noodles. (6) Another of my favorite dishes is Carol's chili. (7) I'm sure it is the spiciest chili this side of the Mississippi River. (8) Carol says she uses secret ingredients in all her dishes.

(9) Whether ordering a main dish or a dessert, you can't go wrong at Carol's.

(10) Everything is superb.

(11) Carol's Country Restaurant is on Twig Street in Freeport. (12) Prices for main entrees range from \$5.95 to \$12.95.

- fact
- opinion
- fact
- opinion
- fact
- fact
- opinion
- fact
- opinion
- opinion
- fact
- fact



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Review

Directions: Write 5 sentences that are facts and 5 that are opinions.

Facts: **Answers will vary.**

- _____
- _____
- _____
- _____
- _____

Opinions:

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

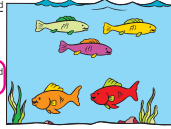
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Reading Skills: Cause and Effect

A **cause** is the reason something happens. The **effect** is what happens as the result of the cause.

Directions: Read the paragraphs below. For each numbered sentence, circle the cause or effect, and underline the effect or effects. The first one has been done for you.

(1) All living things in the ocean are endangered by (humans polluting the water). Pollution occurs in several ways. One way is the dumping of certain waste materials, such as garbage and sewage, into the ocean. (2) The decaying bacteria that feed on the garbage use up much of the oxygen in the surrounding water, so other creatures in the area often don't get enough.



Other substances, such as radioactive waste material, can also cause pollution. These materials are often placed in the water in securely sealed containers. (3) But after years of being exposed to the ocean water, the containers may begin to leak.

Oil is another major source of concern. (4) Oil is spilled into the ocean when tankers run aground and sink or when oil wells in the ocean cannot be capped. (5) The oil covers the gills of fish and smothers them. (6) Living birds get the oil on their wings and are unable to fly. (7) When they clean themselves, they are often poisoned by the oil.



Rivers also can contribute to the pollution of oceans. Many rivers receive the runoff water from farmlands. (8) Fertilizers used on the farms may be carried to the ocean where they cause a great increase in the amount of certain plants. Too much of some plants can actually be poisonous to fish.

Worse yet are the pesticides carried to the ocean. These chemicals slowly build up in shellfish and other small animals. These animals then pass the pesticides on to the larger animals that feed on them. (9) The buildup of these chemicals in the animals can make them ill or harm their young.

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Reading Skills: Cause and Effect

Directions: Read the following cause-and-effect statements. If you think the cause and effect are properly related, write **true**. If not, explain why not. The first one has been done for you.

- The best way to make it rain is to wash your car.
It does not rain every time you wash your car. 
- Getting a haircut really improved Randy's grades.
Getting a haircut does not improve your grades.
- Michael got an A in geometry because he spent a lot of time studying.
true
- Yesterday, I broke a mirror, and today, I slammed my thumb in the door.
You don't slam your thumb in a door because you broke a mirror.
- Natalia isn't allowed to go to the dance tonight because she broke her curfew last weekend.
true
- Emily drank a big glass of orange juice, and her headache went away.
Drinking orange juice doesn't cure headaches.
- The Aldas had their tree cut down because it had Dutch elm disease.
true
- We can't grow vegetables in our backyard because the rabbits keep eating them. 

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Review

Directions: Write **fact** or **opinion** to describe each sentence.

- fact** 1. Hurricanes are also known as typhoons.
- opinion** 2. Hurricanes are the worst natural disasters.
- fact** 3. All hurricanes begin over the ocean near the equator.
- opinion** 4. All people are concerned about pollution.
- opinion** 5. Pesticides should never be used.
- fact** 6. Many colonists died due to lack of food and sickness.
- opinion** 7. Kites are the best gift to give a child.
- fact** 8. The names of Columbus's three ships were the Niña, the Pinta, and the Santa María.



Directions: If the sentence demonstrates a logical cause and effect relationship, write **yes** on the line. If the sentence is illogical, write **no**.

- no** 1. I ate fish and got sick, so all fish will make me sick.
- yes** 2. The farmer began practicing crop rotation, and his crop yield improved. 
- no** 3. I know how to swim, so I cannot possibly drown.
- yes** 4. While learning to ski, Connor broke his leg.
- yes** 5. The river overflowed its banks and caused much damage.
- no** 6. The Cincinnati Reds won 100 games last year, so they probably will this year.
- no** 7. Because I started using a new toothpaste, I will make more friends.

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Reading Skills: Personification

When an author gives an object or animal human characteristics, it is called **personification**.

Example: The dragon quickly thought out its next move in the attack on the village.

Thought is a human process and not associated with mythical creatures; therefore, the dragon is personified in that sentence.

Directions: In the following sentences, underline the personification.

- The cave's gaping mouth led to internal passageways.
- The tractor sprang to life with a turn of the key.
- The lights blinked twice and then died.
- Crops struggled to survive in the blistering heat, hoping for rainfall.
- The engine of the car coughed and sputtered as if it wanted to breathe, but couldn't.
- The arrow flew through the air, eyeing its target.
- Snowmen smile from the safety of their yards.
- Stephanie's doll sipped tea delicately.



Directions: Write a sentence that personifies the following objects.

- Answers will vary.**
- flower _____
 - stuffed animal _____
 - car _____

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Reading Skills: Symbolism

Symbolism is the use of something to stand for (symbolize) something else.

Example:

The elderly woman held the pearl necklace in her wrinkled hand and thought back on her life. Many years had gone by since her husband had given her the necklace, as many years as there were pearls. Some of the pearls, she noticed, were darker than others, just as some years in her life had been darker than other years.

The pearl necklace symbolizes the life of the elderly woman. Each pearl stands for a year in her life, and the necklace represents the many years that have passed.

Directions: Write what is being symbolized in the paragraph on the lines below.

The refugees boarded the small ship with high hopes. They had to believe that their destiny was to find the New World and seek shelter there. A few dared to dream of the riches to be found. For them, the boat itself looked like a treasure chest waiting to be discovered.

Possible answers:

The boat symbolizes a treasure chest as something that holds riches and excitement for a great future.

For 12-year-old Sam, the basketball court was the best place to be. In Sam's neighborhood, crime ran rampant, and the court was the one safe place for kids like Sam to play. Sam spent most nights there, practicing lay-ups, jump shots, and three-point shots. Sam worked hard because for him it wasn't just a sport, it was a golden key.

Basketball symbolizes a golden key, because if Sam becomes good enough at it, it could be the "key" to getting him into a good school and giving him a good future.

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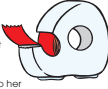
Reading Skills: Idioms

An **idiom** is a phrase that says one thing but actually means something quite different.
Example: Now that's a horse of a different color! There is not literally a horse of a different color. The idiom means "a different matter altogether."

Directions: Write the letter of the correct meaning for the bold words in each sentence. The first one has been done for you.

- | | |
|--|-----------------------------|
| a. forgive and make up | f. pressed tightly together |
| b. feel kept secret for fear of disgrace | g. relatives and ancestors |
| c. something that dampens excitement | h. rudely ignored |
| d. get acquainted, become less formal | i. excessive paperwork |
| e. treated like royalty | j. people were gossiping |

- There are a pirate and a president in our **family tree**.
- The Rosenbergs went through a lot of **red tape** to adopt their baby.
- Sophia gave me the **cold shoulder** when I tried to talk to her this morning.
- The big homework assignment threw a **wet blanket** over my plans for an exciting weekend.
- At a party, Madison likes to **break the ice** by having her guests play games.
- Tongues were wagging** when the principal called Luis into his office.
- There were five people **sandwiched** into the back seat of the car.
- It was obvious that the character in my book was hiding a **skeleton in her closet**.
- Let's forget our past mistakes and **bury the hatchet**.
- When the mayor came to visit our school, we **rolled out the red carpet**.



Reading Skills: Idioms

Directions: Use the following idioms in a sentence of your own. Then, tell what the phrase means in your own words.

Sentences will vary.

- raining cats and dogs
a. **raining very hard**
- going to the dogs
a. **getting run down or deteriorating**
- barking up the wrong tree
a. **asking the wrong person or searching in the wrong place**
- hit the nail on the head
a. **got something exactly right**
- went out on a limb
a. **took a chance**
- all in the same boat
a. **all in the same situation**
- keep up with the Joneses
a. **keeping up with the people around you**

Reading Skills: Denotations and Connotations

Sometimes two words can be similar, yet you would not substitute one for the other because they each suggest different feelings.

Denotation is the literal or dictionary definition of a word.
Connotation is the meaning of a word including all the emotions associated with it. For example, **job** and **chore** are synonyms, but because of their connotations, most people would choose to do a job instead of a chore.

Directions: Circle the word in each group with the most positive connotation.

Example:

- | | | |
|---|------------------------------------|---|
| task
job
chore | old
mature
antiquated | refort
respond
react |
| reminder
remnants
residue | haughty
cheeky
proud | conversational
wordy
talkative |
| excessively
grossly
abundantly | relaxed
lazy
inactive | shack
hovet
hut |
| curious
prying
nosy | swift
hasty
speedy | scamp
rascal
hoodlum |



Reading Skills: Denotations and Connotations

Directions: Replace the bold word in each sentence with a word that has a more positive connotation.

Possible answers:

- Example:** He **slammed** the door when he left.
 He **shut** the door when he left.
- The dog's energy was **uncontrollable**.
 The dog's energy was **plentiful**.
- We hoped to settle our **feud** peacefully.
 We hoped to settle our **disagreement** peacefully.
- The mother **reprimanded** the children when people began to look at them.
 The mother **corrected** the children when people began to look at them.
- The children **gossiped** at lunchtime.
 The children **chatted** at lunchtime.
- The girl **scribbled** a hasty note to leave behind.
 The girl **wrote** a hasty note to leave behind.
- Our conversation ended **abruptly** when the phone rang.
 Our conversation ended **suddenly** when the phone rang.
- The principal was a **stern** man.
 The principal was a **serious** man.
- The boy **stole** the toy from his baby brother.
 The boy **took** the toy from his baby brother.
- The couple **rejected** their offer of help.
 The couple **declined** their offer of help.
- Dad reminded me to clean my **disheveled** room.
 Dad reminded me to clean my **messy** room.



Similes and Metaphors

A **simile** compares two unlike things using the word **like** or **as**.

Example: The fog was **like** a blanket around us. The fog was **as thick as** a blanket.

A **metaphor** compares two unlike things without using the word **like** or **as**.

Example: The fog was a blanket around us.

"The fog was thick" is not a simile or a metaphor. **Thick** is an adjective. Similes and metaphors compare two unlike things that are both nouns.

Directions: Underline the two things being compared in each sentence. Then, write **S** for simile or **M** for metaphor on the lines.

- The florist's shop was a summer garden.
S
- The towels were as rough as sandpaper.
M
- The survey was a fountain of information.
M
- Her courtesy was as welcome as a cool breeze on a hot day.
S
- The room was like a furnace.
S



Directions: Use similes to complete these sentences.

- The tornado was as dark as _____.
- His voice was like _____.
- The emergency was as unexpected as _____.
- The kittens were like _____.

Directions: Use metaphors to complete these sentences.

- To me, research was _____.
- The flourishing plants were _____.
- My observation at the hospital was _____.

Vocabulary Building: Similes

A **simile** is a figure of speech comparing two things using **like** or **as**.

Example: The child was as quiet as a mouse.

Directions: Read the following paragraph. Underline the similes.

The kittens were born on a morning as cold as ice. Although it was late spring, the weather hadn't quite warmed up. There were five kittens in the litter, each quite different from its siblings. The oldest was black as deepest night. There was a calico that looked like Grandma's old quilt. One was as orange as a fall pumpkin, and another was orange and white. The runt was a black and gray tiger. She was as little as a baseball and as quick as lightning to fight for food. The kittens will soon become accepted by the other animals as members of the farm.



Directions: Using the following words, create similes of your own.

Example: piano—The piano keys tinkled like a light rain on a tin roof.

- fire **The fire was as hot as a furnace.**
- thunderstorm **The thunderstorm was like an angry old man.**
- ocean **The ocean was as blue as the sky.**
- night **The night was as black as an underground cave.**
- rainforest **The rainforest was like a breath of fresh air.**
- giraffe **The giraffe is like a young sapling.**

Possible answers:

Vocabulary Building: Metaphors

A **metaphor** is a figure of speech that directly compares one thing with another.

Example: As it set, the sun was a glowing orange ball of fire.

The sun is being compared to a glowing orange ball of fire.

sun glowing orange ball of fire



Directions: Underline the metaphor in each sentence. Then, write the two things that are being compared on the lines.

1. The ocean, a swirling mass of anger, released its fury on the shore.

the ocean a swirling mass of anger

2. He was a top spinning out of control.

He a top spinning out of control

3. The heat covered the crowd, a blanket smothering them all.

the heat a blanket smothering them all

4. I fed my dog a steak, and it was a banquet for her senses.

steak a banquet for her senses

5. The flowers in the garden were a stained glass window.

flowers a stained glass window



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Vocabulary Building: Metaphors and Similes

Directions: Underline the metaphors in the following sentences. Then, rewrite each sentence using a simile.

1. She is a playful child, a real kitten!

She is as playful as a kitten.

2. Life today is a merry-go-round.

Life is like a merry-go-round.

3. His emotions were waves washing over him.

His emotions were like waves washing over him.

4. His childhood was an image in a rearview mirror.

His childhood was like an image in a rearview mirror.

Directions: Write the meanings of the following sentences.

1. His mind was as changeable as spring weather. **Possible answers:**

He was likely to change his mind.

2. His demand was like a clap of thunder.

His demand was loud and scary.

3. There was joy written on the children's faces on Christmas morning.

The children's faces had joyful expressions.



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Reading Skills: Generalizations

A **generalization** is a statement or rule that applies to many situations or examples.

Example: All children get into trouble at one time or another.

Directions: Read each paragraph, and then circle the generalization that best describes the information given.

Although many people think of reptiles as slimy, snakes and other reptiles are covered with scales that are dry to the touch. Scales are outgrowths of the animal's skin. Although in some species they are nearly invisible, in most they form a tile-like covering. The turtle's shell is made up of hardened scales that are fused together. The crocodile has a tough but more flexible covering.

Every reptile has scales.

The scales of all reptiles are alike.

There are many different kinds of scales.



The reptile's scales help to protect it from its enemies and conserve moisture in its body. Some kinds of lizards have fan-shaped scales that they can raise up to scare away other animals. The scales also can be used to court a mate. A reptile called a gecko can hang from a ceiling because of specialized scales on its feet. Some desert lizards have other kinds of scales on their feet that allow them to run over the loose sand.

Scales have many functions.

Scales scare away other animals.

Scales help reptiles adapt to their environments.



A snake will periodically shed its skin, leaving behind a thin impression of its body—scales and all. A lizard sheds its skin, too, but it tears off in smaller pieces rather than in one big piece. Before a snake begins this process, which is called molting, its eyes cloud over. The snake will go into hiding until they clear. When it comes out again, it brushes against rough surfaces to pull off the old skin.

Snakes go into hiding before they molt.

Reptiles periodically shed their skin.

A lizard's skin molts in smaller pieces.



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Reading Skills: Generalizations

Directions: Identify which statements below are generalizations and which are specific. Write **G** for generalization and **S** for specific.

- G 1. We want to have lots of good food for the party.

- S 2. Jenna gave me three pink shirts and two pairs of jeans.

- G 3. Americans are generous and friendly.

- S 4. There are 10 more female teachers than male teachers at our school.

- S 5. She wants me to buy watermelon at the grocery store.

- G 6. She will never believe anything I say.



- S 7. I got poison ivy because I didn't watch out for the foliage on our hike.

- G 8. My mom is the best mom in the world.



- S 9. I get depressed every time the weather turns bad.

- S 10. The team is so good because they work out and practice every day.

- G 11. Cats are so bad-tempered.

- S 12. My dog has a good temperament because he's had lots of training.

- G 13. Our football team is the best this county has ever seen.



- S 14. I love the feel of rain on my skin because it's cool.

- G 15. That classroom is always out of control.

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Reading Skills: Skimming and Scanning

Skimming is reading quickly to get a general idea of what a reading selection is about. When skimming, look for headings and key words to give you an overall idea of what you are reading.

Scanning is looking for certain words to find facts or answer questions. When scanning, read or think of questions first.

Directions: Scan the paragraphs below to find the answers to the questions. Then, look for specific words that will help you locate the answers. For example, in the second question, scan for the word **smallest**.

There are many different units to measure time. Probably the smallest unit that you use is the second, and the longest unit is the year. While 100 years seems like a very long time to us, in the history of Earth, it is a smaller amount of time than one second is in a person's entire lifetime. To describe the history of Earth, scientists use geologic time. Even a million years is a fairly short period of time in geologic time. Some scientists believe that our planet is about 4,600 million years old. Since a thousand million is a billion, Earth is believed to be 4.6 billion years old.



1. What kind of time is used to describe the history of Earth?

geologic time

2. For the average person, what is the smallest unit of time used?

the second

3. In millions of years, how old do some scientists believe Earth is?

4,600 million years

4. How would you express that in billions of years?

4.6 billion years

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The Author's Purpose

Authors write to entertain, inform, or persuade. To entertain means "to hold the attention of or to amuse someone." A fiction book about outer space entertains its reader, as does a joke book.

To inform means "to give factual information." A cookbook informs the reader of new recipes. A newspaper tells what is happening in the world.

To persuade people means "to convince them." Newspaper editorial writers try to persuade readers to accept their opinions. Doctors write health columns to persuade readers to eat nutritious foods or to exercise regularly.

Directions: Read each of the passages below. Tell whether they entertain, inform, or persuade. (They may do more than one.) Give the reasons why.

George Washington was born in a brick house near the Potomac River in Virginia on February 11, 1732. When he was 11 years old, George went to live with his half-brother, Lawrence, at Mount Vernon. **Possible answers:**

Author's Purpose: inform

Reason: The passage contains facts.

When George Washington was a child, he always measured and counted things. Maybe that is why he became a surveyor when he grew up. Surveyors like to measure and count things, too.

Author's Purpose: inform/persuade

Reason: The passage contains facts and the author's opinion.

George Washington was the best president America has ever had. He led a new nation to independence. He made all the states feel as if they were part of the United States. All presidents should be as involved with the country as George Washington was.

Author's Purpose: persuade

Reason: Most of the sentences are the author's opinion. The author is trying to persuade the reader to agree with his or her point of view.

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ANSWER KEY

Llamas

Directions: Read each paragraph. Tell whether it informs, entertains, or persuades. One paragraph does more than one. Then, write your reason on the line below.



A llama (LAH'MAH) is a South American animal that is related to the camel. It is raised for its wool. Also, it can carry heavy loads. Some people who live near mountains in the United States train llamas to go on mountain trips. Llamas are sure-footed because they have two long toes and hooves. **Possible answers:**

Author's Purpose: inform

Reason: The passage is factual.

Llamas are the best animals to have if you're planning to backpack in the mountains. They can climb easily and carry your supplies. No one should ever go for a long hiking trip in the mountains without a llama.

Author's Purpose: persuade/inform

Reason: The passage contains facts and the author's opinion.

Llamas can be stubborn animals. Sometimes, they suddenly stop walking for no reason. People have to push them to get them moving again. Stubborn llamas can be frustrating when hiking up a steep mountain.

Author's Purpose: inform

Reason: The passage is mostly factual.

Greg is an 11-year-old boy who raises llamas to climb mountains. One of his llamas is named Dallas. Although there are special saddles for llamas, Greg likes to ride bareback.

Author's Purpose: entertain

Reason: The information is presented to interest/entertain the reader.

Now, use a separate sheet of paper to inform readers about llamas.

Roller Coasters

Directions: Read each paragraph, and determine the author's purpose. Then, write down your reason on the line below.



Roller coaster rides are thrilling. The cars chug up the hills and then fly down them. People scream and laugh. They clutch their seats and sometimes raise their arms above their heads. **Possible answers:**

Author's Purpose: inform/entertain

Reason: The passage contains facts, but it is also written in an entertaining way and includes descriptive words.

The first roller coasters were giant slides made of ice in Russia. That was more than 300 years ago! The slides were about 70 feet high, and people had to climb steep ladders to reach their tops. Riders got into carts and slid down very fast. Then, they climbed the ladders again. Early roller coasters were more work than fun.

Author's Purpose: inform

Reason: The passage contains facts about the first roller coasters.

The first roller coaster in America was built in 1884. It cost only a nickel to ride the "Switchback Gravity Railway" at Coney Island in New York. Roller coasters did not become very popular until the late 1920s.

Author's Purpose: inform

Reason: The passage contains facts about early roller coasters.

Have you ever ridden a giant roller coaster? Some of the most famous ones in the world include the "Blizzaro" at Six Flags New England; the "Intimidator 305" at Kings Dominion in Doswell, Virginia; and the "Millennium Force" at Cedar Point in Sandusky, Ohio. Roller coasters are fun because they have thrilling twists and turns. Some go very high, and some turn upside down. Everyone should go on a roller coaster at least once in his or her life.

Author's Purpose: inform/persuade

Reason: The passage contains facts about roller coasters. It also includes the author's opinion about roller coasters.

Now, use a separate sheet of paper to persuade people to ride roller coasters.

Review

Directions: Follow the instructions for each section.

1. Write an informative paragraph about a sport.

Answers will vary.

2. Write an entertaining paragraph about the circus.

3. Write a persuasive paragraph about the desire for a later bedtime.



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Multiple Choice

Multiple-choice questions are frequently asked on tests. Such questions include three or four possible answers. When answering a multiple-choice question, first read the question carefully. Then, read all the answers that are offered. If you do not know the correct answer, eliminate some of the ones you know are wrong until you have only one left. Remember these points when taking multiple-choice tests:



- Answers that contain phrases such as **all people**, **no one**, or **everybody** are probably not correct. For example, a statement such as "all children like candy" is probably not correct because it allows for no exceptions. If there is one child who does not like candy, the statement is not correct. However, if you know that more than one answer is correct and the last choice in the group is "all of the above," then that phrase is probably the correct answer.
- Answers that contain words you have never seen before probably are not correct. Teachers don't expect you to know material you haven't studied.
- Answers that are silly usually aren't correct.
- When two of the answers provided look nearly the same, one of them is probably correct.
- Always check your answers if there is time.

Directions: Answer the questions about multiple-choice tests.

- The first thing you should do during a multiple-choice test is read the question carefully.
- When you are reading the possible answers to a multiple-choice question and you know the first one is right, should you immediately mark it without reading the other answers? no
Why or why not? There might be another similar answer that is actually the correct one.
- Write three phrases that might tell you that an answer is probably not correct. all people, no one, and everybody

True/False

True/false tests include several statements. You must read each one carefully to determine if it is right or wrong. Remember these tips:



- Watch for one word in the sentence that can change the statement's meaning from true to false or vice versa.
- Words such as **all**, **none**, **everybody**, or **nobody** should alert you that the answer may be false. Using these words means that there are no exceptions.
- There are usually more true answers on a test than false ones. Therefore, if you have to guess an answer, you have a better chance of answering right by marking it "true."
- Always check your answers if there is time.

Directions: Answer the questions about true/false tests.

- List four words that can alert you that a question is false. all, none, everybody, and nobody
- One word in a sentence can change the statement's meaning.
- If you must guess an answer, is it wiser to guess true or false? true
- True/false tests are made up of several statements.
- Can you do well on a true/false test by only skimming each statement? no
- If the word **everybody** is in the statement, is the answer probably true or false? false
- When the word **all** appears in the statement, is the answer probably true or false? false
- What should you do last when taking a true/false test? Check your answers if you have time.

Fill in the Blank

Fill-in-the-blank tests are more difficult than true/false or multiple-choice tests. However, there may be clues in each sentence that help determine the answer. Look at this example:

The _____ of the United States serves a _____-year term.

Can you tell that the first blank needs a person? (The answer is "president.") The second blank needs a number because it refers to years. ("Four" is the answer.) Think about these other tips for taking fill-in-the-blank tests:



- Always plan your time wisely. Don't waste too much time on one question. Check the clock or your watch periodically when taking a test.
- First, read through the entire test. Then, go back to the beginning and answer the questions that you know. Put a small mark beside the questions you are not sure about.
- Go back to the questions you were not sure of or that you didn't know. Carefully read each one. Think about possible answers. If you think it could be more than one answer, try to eliminate some of the possible answers.
- Save the most difficult questions to answer last. Don't waste time worrying if you don't know the answer to a question.
- Sometimes, you should guess at an answer because it may be right. There are some tests, though, that deduct points if your answer is wrong, but not if it is left blank. Make sure you know how the test will be scored.
- Review your test. Make sure you have correctly read the directions and each question. Check your answers.

Directions: Answer the questions about fill-in-the-blank tests.

- Fill-in-the-blank tests may have clues in each sentence that help you figure out the answer.
- Always plan your time wisely when taking a test.
- Should you try to answer a question as soon as you read it? no
- Should you answer the hard or easy questions first? easy
- If you are not sure of a question, you should make a small mark beside it.

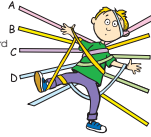
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Matching

Matching tests have two columns of information. A word or fact from one column matches information in the other. Read these tips to help with matching tests:



- Look at one question at a time. Start with the first word or phrase in one of the columns. Then, look at the possible answers in the other column until you find the correct one. Then, go to the next word or phrase in the first column. If you don't know the answer to one question, skip it and go back to it later.
- If there are several words in one column and several definitions in the other column, it is often easier to read the definition first and then find the word that goes with it.
- Carefully read the directions. Sometimes, one column on a matching test is longer than the other. Find out if there is one answer that won't be used or if an answer in the opposite column can be used twice.
- Check your answers if there is time.

Directions: Answer the questions about matching tests.

- Matching tests have how many columns of information? two
- If one column has words in it and the other column has definitions in it, which one should you look at first to make the test easier? the one with definitions
- To eliminate confusion, you should look at one question at a time.
- Do the columns on a matching test always have the same number of things in them? no
- Are there ever items left unmatched on a matching test? yes
- Does it matter if you look at the right or left column of a matching test first? no

Page 96

Essays

Essay questions give you a chance to demonstrate what you have learned. They also provide the opportunity to express your opinion. Although many students think essay questions are the most difficult, they can be the most fun. Remember these tips when writing the answer to an essay question:

- Think about the answer before you write it. Take time to organize your thoughts so that you can better express yourself.
- Write a few notes or an outline on a piece of scrap paper or on the back of the test. This helps remind you what you want to write.
- State your answer clearly. Don't forget to use complete sentences.
- Review the answer before time runs out. Sometimes words are left out. It doesn't take much time to read through your essay to make sure it says what you want it to say.

Directions: Use these essay-writing tips to answer the following question in the space provided.

What is your favorite type of test? Give several reasons why.

Answers will vary.

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Review

Directions: Complete each question about tests.

- Four steps for writing an answer for an essay test include:
 - Think about your answer before you write it.
 - Write a few notes on scrap paper or the back of the test.
 - State your answer clearly using complete sentences.
 - Review and proofread the answers before time runs out.
- In a matching test, it is sometimes easier to read the definition and then match it with a word from the opposite column.
- One column on a matching test may be longer than the other.
- Tests that require you to fill in the blanks may provide clues in each statement.
- Always check answers if there is time.
- Certain words, such as none and all, should alert you that an answer may be false.
- There are usually but not always, more true statements on a true/false test.
- If everybody or everything is used in one of the answers for a multiple-choice or true/false test, it is likely that that answer is not right.
- If two possible answers for a multiple-choice question sound nearly the same, one of them is probably correct.
- If two answers to a multiple-choice question appear to be correct, the answer could be one that says all of the above.

Page 98

Comprehension: Ansel Adams

One of the world's most well-known photographers is Ansel Adams. You may not recognize his name, but you would probably recognize his photos. Adams was famous for his love of nature and his stunning black-and-white landscape photographs. Although photography ended up becoming a passion for Adams, his earlier ambitions were in a completely different area.



Ansel Adams was born in 1902 in California. He was an only child, and he grew up with a rather shy and nervous personality. He did not do particularly well in school. As a result, he learned much on his own and from tutors. As a boy, Adams discovered a love of music. For a number of years, he planned on pursuing a career as a professional pianist.

In addition to his love of piano, Adams was passionate about nature and its preservation. He became involved with the Sierra Club as a teenager. This interest in the environment would last him throughout his life. When Adams was 14, he and his parents took a trip to Yosemite National Park. His parents gave him a Kodak Brownie box camera to use during the trip, and Adams's love of photography was born.

Throughout his life, Adams published a number of books featuring his photos. His pictures of the national parks were among the most famous. Adams lived long before digital cameras were available. He spent many hours in the darkroom, working painstakingly to print an image that matched the one in his mind's eye. Adams died in 1984, but he lives on in his photographs of the natural world he loved so much.

Directions: Answer these questions about Ansel Adams. black-and-white landscapes

- For what kind of photos was Ansel Adams best known? black-and-white landscapes
- How was Adams's education different from a typical education? He did a lot of learning on his own and from tutors.
- What similarities are there between a career as a photographer and a pianist? Both careers are in the arts and require creativity.
- How was Adams's love of nature reflected in his photography? He was best known for his photos of the natural world.
- Why did Adams's parents give him a camera? to use during a trip to Yosemite National Park

Page 100

Comprehension: Photography Terms

Like other good professionals, photographers make their craft look easy. Their skill—like that of the graceful ice skater—comes from years of practice. Where skaters develop a sense of balance, photographers develop an "eye" for pictures. They can make important technical decisions about photographing, or "shooting," a particular scene in the twinkling of an eye.

It's interesting to know some of the technical language that professional photographers use. "Angle of view" refers to the angle from which a photograph is taken. "Depth of field" is the distance between the nearest point and the farthest point that is in focus in a photo.

"Filling the frame" refers to the amount of space the object being photographed takes up in the picture. A close-up picture of a dog, flower, or person would fill the frame. A far-away picture would not.

Two elements that photographers work with are shutter speed and aperture. Shutter speed refers to how quickly the camera's shutter opens and closes. The longer the shutter stays open, the more light it allows in. The more quickly the shutter opens and closes, the better the photographer can capture an action shot. Shutter speed must work together with the aperture, which is the opening that controls the amount of light passing through the lens. A photographer who learns to properly balance shutter speed and aperture can take wonderful, sharp pictures that skillfully capture his or her subjects.

Directions: Answer these questions about photography terms.

- Name another term for photographing. shooting
- This is the distance between the nearest point and the farthest point that is in focus in a photo. depth of field
- What is aperture? the opening that controls the amount of light passing through the lens
- A close-up picture of someone's face would

<input type="checkbox"/> provide depth of field.	<input type="checkbox"/> appear far away.	<input checked="" type="checkbox"/> fill the frame.
--	---	---
- Shutter speed and aperture work together.

<input checked="" type="checkbox"/> True	<input type="checkbox"/> False
--	--------------------------------

Page 101

Comprehension: Photographing Animals

Animals are a favorite subject of many young photographers. Cats, dogs, hamsters, and other pets top the list, followed by zoo animals and the occasional lizard.



Because it's hard to get pets to sit still and "perform on command," some professional photographers refuse to photograph them. There are ways around the problem of short attention spans, however.

One way to get an appealing portrait of a cat or dog is to hold a biscuit or treat above the camera. The animal's longing look toward the food will be captured by the camera as a soulful gaze. Because it's above the camera—out of the camera's range—the treat won't appear in the picture. When you show the picture to your friends afterwards, they will be impressed by your pet's loving expression.

You can also try taking a series of good, quick shots of a pet by simply snapping several pictures right after calling its name. You'll get a different expression from your pet using this technique. Depending on your pet's disposition, the pictures will capture an inquisitive expression or possibly a look of annoyance, especially if you've awakened Rover from a nap!

Taking pictures of zoo animals requires a little more patience. After all, you can't wake up a lion! You may have to wait for a while until the animal does something interesting or moves into a position for you to get a good shot. When photographing zoo animals, don't get too close to the cages, and never tap on the glass or throw things between the bars of a cage! Concentrate on shooting some good pictures, and always respect the animals you are photographing.

Directions: Answer these questions about photographing animals.

- Why do some professionals dislike photographing animals? because it is difficult to get them to sit still
- Does the author suggest taking a single photo of a pet or several quick photos in a row? Why? If you take several quick photos in a row, you'll capture different expressions.
- To capture a pet's loving expression, hold this out of camera range. a treat
- Compared to taking pictures of pets, what does photographing zoo animals require? more patience

Page 102

Generalization: Taking Pictures

A **generalization** is a statement that applies to many different situations.

Directions: Read each passage, and circle the valid generalization.

- Most people can quickly be taught to use a simple camera. However, it takes time, talent, and a good eye to learn to take professional-quality photographs. Patience is another quality that good photographers must possess. Those who photograph nature often will wait hours to get just the right light or shadow in their pictures.
 - Anyone can learn to use a camera.
 - Any patient person can become a good photographer.
 - Good photographers have a good eye for pictures.
- Photographers such as Diane Arbus, who photographed strange or odd people, also must wait for just the right picture. Many "people photographers" stake out a busy city sidewalk and study faces in the crowd. Then, they must leap up quickly and ask to take a picture or take one without being observed. Either way, it's not an easy task.
 - Staking out a busy sidewalk is a boring task.
 - "People photographers" must be patient people and good observers.
 - Taking someone's photo without his or her permission is not a nice thing to do to strangers.
- Whether the subject is nature or humans, many photographers insist that dawn is the best time to take pictures. The light is clear at this early hour, and mist may still be in the air. The mist gives these early morning photos a haunting, "other world" quality that is very appealing.
 - Morning mist gives an unusual quality to most outdoor photographs.
 - Photographers all agree that dawn is the best time to take pictures.
 - Misty light is always important in taking pictures.



Page 103

Generalization: Food Photography

Directions: Read each passage, and circle the valid generalization.

- Taking good photographs of food is more difficult than it seems. Anyone can snap a photo of a bowl of soup or a basket of apples. The goal is to convey the food's best traits. If the soup is steaming hot and full of chunks of savory veggies, the photo needs to show that to the viewer. If the apples are crisp, sweet, and juicy, the photo should make the viewer want to pick one up and take a bite. A photo taken from a bad angle or with poor lighting won't make food look appealing to anyone.
 - It is not easy to take a photo of a basket of apples.
 - The goal of food photography is to make the food look appealing to the viewer.
 - Only professional photographers should take photos of food.
- Indirect daylight is the best lighting for food photography. Good light is important in making the food look appetizing. Photos of food can often look flat, with a yellowish tone to the picture. The best possible lighting is a shady spot that is surrounded by natural light. Bright, direct sunlight is too harsh; it can create shadows and bleach out bright colors and whites.
 - No one should ever take photos of food on a bright, sunny day.
 - Never use artificial lighting when taking photos of food.
 - Good lighting, such as indirect daylight, is essential to taking appetizing photos of food.
- Using props and styling the food can make a dish look much more attractive. Think of a bowl of chili. Shown on its own, it may not look very appealing. If you were to add a pretty placement of napkins, the photo would look more interesting. Adding some cheese or a dollop of sour cream to the chili would certainly make the viewer want to dig in! A cutting board, patterned napkins, and garnishes like chopped herbs or cheese can help food look much more appealing in a photo.
 - Props and food styling can help food appear more appealing in photos.
 - You should always photograph chili with garnishes.
 - The food is more important than the props and styling in a photograph.



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Generalization: Choosing a Camera

Photography is an important part of American culture today. Digital cameras have made pictures incredibly easy to take. Many people have phones that can take photos, and it's also easy to share them instantly via the Internet. When it comes to buying a camera, though, there are still many options.

For the casual photographer, a point-and-shoot digital camera is a good choice. This type of camera is easy for almost anyone to use. You don't need to have a great knowledge of how cameras work or the finer points of photography. That's how these cameras got their nicknames—all you need to do is point the camera and shoot your picture. The settings are mostly automatic, and the camera makes the decisions for you. Most point-and-shoot cameras allow you to make some adjustments if you like. You can change the setting to do things like take an action shot, photograph fireworks, or take a picture of a sunny day at the beach.

For more serious photographers, a DSLR camera is a likely choice. **DSLR** stands for digital single-lens reflex. A photographer using this type of camera has much more control over the camera's settings. He or she needs to know more about photography in order to manually do what other cameras do automatically. The benefit is that the DSLR photographer can often capture things that a photographer with a point-and-shoot camera cannot. DSLR cameras tend to be quite a bit more expensive than point-and-shoot cameras. In addition, the various lenses are also expensive. Serious photographers accept the added work and expense because they can have so much more control over their photos.



Directions: Answer these questions about choosing a camera.

- Which generalization is correct?
 - Point-and-shoot cameras cost less than DSLR cameras.
 - DSLR camera is good choice for serious photographers who want to have a lot of control over the photos they take.
 - Most of the settings are automatic in point-and-shoot cameras.
- How are point-and-shoot cameras and DSLR cameras different from one another?

The settings are mostly automatic for point-and-shoot cameras, but the photographer has more control over the settings with a DSLR.
- If you were to buy a camera, which kind would you choose? Explain why.

Answers will vary.

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Review

Directions: Circle the missing word for each sentence.

- Ansel Adams was known for his beautiful _____ photos.
 - pianist
 - amateur
 - landscape
- The _____ of the camera collects the light rays and draws them together at the center.
 - shutter
 - lens
 - aperture
- The distance between the nearest point and the farthest point in a photo is called the _____.
 - graphic
 - shooting
 - depth of field
- _____ refers to the angle from which a photograph is taken.
 - Photos
 - Angle of view
 - Lens
- Shutter speed refers to how quickly a camera's shutter _____.
 - opens and closes
 - flashes
 - focuses



Page 106

Main Idea/Recalling Details: Kites

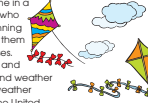
Kites are a familiar sight on breezy fall days. They come in a great variety of sizes, colors, and designs. It is not known who invented kites, but kites have been flown since the beginning of recorded history. While today children and adults use them for recreation, throughout history kites have had other uses.

In the United States, kites have been used in weather and other scientific research experiments. Before airplanes and weather balloons, the National Weather Service had kites carry weather instruments as high as 4 miles above Earth. In addition, the United States military used kites for observing the enemy and sending messages between troops.

In other countries, kites had cultural and religious importance. The ancient Chinese flew kites over their homes to drive out evil spirits. The Chinese still enjoy kites so much that one day each year they celebrate Kites' Day. On some Pacific islands, kites were thought to have spiritual qualities. They were believed to symbolize both sides of nature—life and death. On some Polynesian islands, kites were used as protection against evil. These kites were often shaped like birds and used as soaring messengers to the heavens. In Hawaii, kites were also used to establish land ownership. A kite was released in the air, and a claim was given for the area where it came down.

Directions: Answer these questions about kites.

- The main idea is:
 - Kites come in a great variety of sizes, colors, and designs.
 - While today kites are used for recreation, throughout history they have had other uses.
- Besides recreation, name two ways kites have been used in the United States.
 - for weather and other scientific research
 - The military used them for observation and to send messages.
- What country celebrates a holiday called Kites' Day? China
- How did Hawaiians use kites to decide land ownership? A kite was released into the air, and a claim was given for the area where it came down.



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Comprehension: Aerodynamics

Kites are able to fly because of the principle of **aerodynamics**. Aerodynamics is the study of forces that are put into action by moving air. Three main forces work to keep a heavier-than-air kite flying—lift, gravity, and drag.

This is how it works: The flying lines, or strings, are attached to the kite to hold it at a slant. The wind pushes against the underside of the kite. At the same time, the wind rushes around the edges of the kite and "drags" some of the air from the upper side. This creates a partial vacuum there. The push of the air underneath is greater than the push of the air from the top, so the kite is held in the air. An airplane is held in the air in much the same way, except that it must keep moving rapidly to make the pressure above and below its wings different. The wind does this for the kite. In a steady airstream, a kite doesn't move backward or forward. It seems to be unaffected by gravity. This is possible because the lifting force of the wind overcomes the downward force of gravity. If you have ever ridden a bicycle into a strong wind, you may have felt some of the forces of aerodynamics. If you held your hand out to your side, you could feel the air stream flowing around your hand. With your fingers pointed into the wind and your hand held level, there is little lift or drag. But if you raised your fingers slightly, the wind lifted your hand upwards. Raising your hand higher increases the drag and decreases the lift. Your hand is pushed downward. A kite flying in the sky is subject to these same forces.



Directions: Answer these questions about aerodynamics.

- What is aerodynamics? the study of forces that are put into action by moving air
- What three forces are at work to hold a kite in the air?
 - lift
 - gravity
 - drag
- An airplane is held in the air in much the same way, except that it must keep moving rapidly to keep the air above and below its wings different.

True False

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Comprehension: Getting Your Kite to Fly

There are some basic things to know about kite flying that can help you enjoy the sport more. Here are a few of the most important ones.

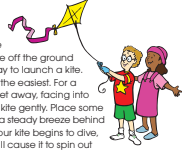
First, if you have ever seen someone flying a kite in a movie, you probably saw him or her get the kite off the ground by running into the wind. However, this is not the way to launch a kite. Most beginners will find a "high-start" launch to be the easiest. For a high-start launch, have a friend stand about 100 feet away, facing into the wind. Your friend should face you and hold the kite gently. Place some tension on the flying line by pulling gently on it. With a steady breeze behind you, tug gently on the line, and the kite will rise. If your kite begins to dive, don't panic or pull on the line. Dropping the reel will cause it to spin out of control and could cause someone to be hurt. Simply let the line go slack. This usually will right the kite in midair.

For a kite that is pulling hard away from you, have a friend stand behind you and take up the slack line as you bring it in. Hand over hand, pull down the kite. It is very important to have gloves on to do this, or you may burn or cut your hands. It is recommended that you always wear gloves while kite flying.

When two kite lines get crossed, pulling may cause enough friction to cut one or both of the lines. Instead of pulling, both fliers should walk toward one another until their lines uncross as they pass.

Directions: Circle **True** or **False** for these statements about kite flying.

- To launch a kite, run into the wind holding the kite behind you. True False
- In a high-start launch, a friend stands about 100 feet away from you, holding the kite. True False
- If your kite begins to dive from the sky, immediately drop the reel. True False
- It is recommended that you always wear gloves when kite flying. True False



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Recalling Details: Kite Safety Rules

Because kite flying is a relaxed, easygoing sport, it is easy to have the mistaken belief that there are no dangers involved. However, like any sport, kite flying must be approached with care. Here are some important safety rules you should always follow while kite flying:

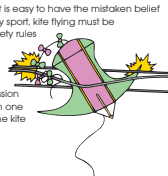
- Don't** fly a kite in wet or stormy weather or use wet flying line.
- Don't** fly a kite near electrical power lines, transmission towers, or antennae. If your kite does get caught in one of these, walk away and leave it! If you must get the kite back, contact your local electric company.
- Don't** use wire for flying line.
- Don't** use metal for any part of the kite.
- Don't** fly a kite near a street or in crowded areas.
- Don't** fly a kite in a field or other area that has rocks or other objects you could trip over.
- Don't** walk backwards without looking behind you.
- Don't** fly a kite around trees. (If your kite does happen to get caught in a tree, let the line go slack. Sometimes the wind can work it free.)
- Don't** fly a kite using unfamiliar equipment. A reel spinning out of control can be quite dangerous.
- Don't** fly a kite near an airport.
- Don't** fly a very large kite without proper guidance.
- Do** wear protective gloves to avoid burns on your hands from rapidly unwinding line.
- Do** use flying line that has been tested for the type and size of kite you are using.

Directions: Answer these questions about kite safety. Possible answers:

- List three things you should never fly a kite around.
 - power lines
 - a street
 - trees
- What should you do if your kite gets caught in a tree?

Let the line go slack to see if the wind can free it.
- What material should you never use in any part of your kite?

metal



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Recalling Details: Aviation Pioneer

Lawrence Hargrave was born in Middlesex, England, in 1850. When he was a teenager, his family moved to Australia. There, Hargrave went to work for the Australian Steam and Navigation Company, where he spent 5 years gaining practical experience in engineering. He soon became interested in artificial flight.

Hargrave wanted to develop a stable lifting surface that could be used for flying. This goal led to his invention of the box kite, one of the seven basic models. In 1894, he carried out kite experiments along the beaches near his home. One day, in front of onlookers, he was lifted above the beach and out over the sea by four of his box kites. These experiments were very important to the development of air travel, although Hargrave has received little credit for it. In fact, because of his modesty, Hargrave failed to get a patent on his box kite. He spent more than 30 years studying flying, offering many inventions, including a rotary engine.

In 1906, Hargrave began looking for a home for his collection of nearly 200 models of kites and flying machines. After being rejected by several governments, his collection was accepted at a technological museum in Munich, Germany. Unfortunately, many of these models were destroyed during World War I.

Directions: Answer these questions about Lawrence Hargrave.

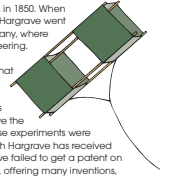
- For what kite design was Lawrence Hargrave known?

the box kite
- What was Hargrave trying to create when he made this kite?

a stable lifting surface that could be used for flying
- What was one of the inventions Hargrave contributed to aviation?

the rotary engine
- Where was Hargrave's collection of kites and flying machines finally housed?

technological museum in Munich, Germany



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Main Idea/Recalling Details: A Kite in History

In June 1752, Benjamin Franklin proved that lightning was a type of electricity by flying a kite with a key tied to the bottom of the line during a thunderstorm. Before his experiment, many people thought that lightning was a supernatural power.

After the success of his experiment, Franklin figured that if lightning could be drawn to a kite in a storm, it could be safely redirected into the ground by a metal rod attached to a house. His idea was met with much doubt, but lightning rods were soon seen on buildings in many of the colonies and later in Europe. During the years between 1683 and 1789, studying the universe and laws of nature was of tremendous importance. It was during this Age of Reason, as it was known, that Franklin's kite experiment gained him international fame and respect. He was elected to the Royal Society of London and the French Academy of Sciences, among other honors.

More than 20 years after his bold experiment, American patriots were enduring many hardships in their struggles for freedom from England. The colonial troops had shortages of guns, gunpowder, and food. France was sending supplies but not as much as was needed. Benjamin Franklin was chosen to go to France to persuade the French to aid the American cause. Franklin's reputation as a brilliant scientist earned him a hero's welcome there. The French people were so impressed by him that they wanted to help the colonies, even during a time when they could barely afford it. The supplies sent by the French were instrumental to the colonists in winning the war. And it all started with a kite.

Directions: Answer these questions about Ben Franklin and his historical kite.

- The main idea is:

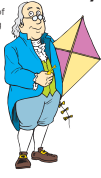
A kite played a role in the American Revolution and gained a spot in history books.

Benjamin Franklin proved that lightning was a type of electricity by flying a kite with a key tied to the bottom of the line during a storm.
- From his kite and key experiment, what did Franklin invent?

the lightning rod
- What was the era between 1683 and 1789 known as?

the Age of Reason
- Why was Franklin sent to France in 1776?

to persuade the French to aid the American cause



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Summarizing: Pioneers

Directions: Think about the lives and accomplishments of Ben Franklin and Lawrence Hargrave. Write one paragraph about each, summarizing what you have learned about these two men.

Answers should include:

Ben Franklin

1752 kite-and-key experiment
 studied universe and laws of nature
 ambassador to France
 born in Boston in 1706
 apprentice printer

Lawrence Hargrave

born in Middlesex, England, in 1850
 engineer
 invented box kite
 used four box kites to lift himself
 studied flying for 30 years, creating many inventions

Writing Checklist

Reread your paragraphs carefully.

- | | |
|--|--|
| <input type="checkbox"/> My paragraphs make sense. | <input type="checkbox"/> I used correct spelling. |
| <input type="checkbox"/> I used correct punctuation. | <input type="checkbox"/> My paragraphs are well-organized. |
| <input type="checkbox"/> I have a good opening and ending. | <input type="checkbox"/> My paragraphs are interesting. |

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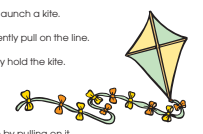
Review

Directions: Number in order the steps for how to launch a kite.

- 5 With a steady breeze behind you, gently pull on the line.
- 3 Have your friend face you and gently hold the kite.
- 6 Your kite will rise.
- 2 Have your friend face into the wind.
- 4 Place some tension on the flying line by pulling on it.
- 1 Have a friend stand about 100 feet away from you.

Directions: Write **true** or **false** for these statements about kite safety.

- true** 1. You should not use wire for flying line.
- false** 2. Fly any size kite you wish as long as you have the right flying line.
- true** 3. If your kite gets caught in a tree, let the line go slack.
- false** 4. It's okay to fly a kite in the rain.
- true** 5. You should not fly a kite in crowded areas.
- false** 6. You can use metal on your kite as long as it's not the flying line itself.
- false** 7. You don't need to wear gloves unless you're flying a very large kite.
- true** 8. You should not fly a kite around an airport.
- false** 9. If your kite gets caught in power lines, just tug the line gently until it works free.
- true** 10. The best place to fly a kite is in a large field.



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ANSWER KEY

Comprehension: Colonists Come to America

After Christopher Columbus voyaged to America in 1492, many people wanted to come live in the new land. During the 17th and 18th centuries, a great many Europeans, especially the English, left their countries and settled along the Atlantic Coast of North America between Florida and Canada. Some came to make a better life for themselves. Others, particularly the Pilgrims, the Puritans, and the Quakers, came for religious freedom.



A group of men who wanted gold and other riches from the new land formed the London Company. They asked the king of England for land in America and for permission to found a colony. They founded Jamestown, the first permanent English settlement in America, in 1607. They purchased ships and supplies, and located people who wanted to settle in America.

The voyage to America took about eight weeks and was very dangerous. Often, fierce winds blew the wooden ships off course. Many were wrecked. The ships were crowded and dirty. Frequently, passengers became ill, and some died. Once in America, the early settlers faced even more hardships.

Directions: Answer these questions about the colonists coming to America.

- How long did it take colonists to travel from England to America? **about 8 weeks**
- Name three groups that came to America to find religious freedom.
a) **the Pilgrims** b) **the Puritans** c) **the Quakers**
- Why was the London Company formed? **They wanted to found a colony in America so that they could become rich from the new land.**
- What was Jamestown?
the first permanent English settlement in America
- Why was the voyage to America dangerous? **There were fierce winds, frequent wrecks, and illness.**

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Recalling Details: Early Colonial Homes

When the first colonists landed in America, they had to find shelter quickly. Their first homes were crude bark and mud huts, log cabins, or dugouts, which were simply caves dug into the hillsides. As soon as possible, the settlers sought to replace these temporary shelters with comfortable houses.



Until the late 17th century, most of the colonial homes were simple in style. Almost all of the New England colonists—those settling in the northern areas of Massachusetts, Connecticut, Rhode Island, and New Hampshire—used wood in building their permanent homes. Some of the buildings had thatched roofs. However, they caught fire easily, and so were replaced by wooden shingles. The outside walls also were covered with wooden shingles to make the homes warmer and less drafty.

In the middle colonies—New York, Pennsylvania, New Jersey, and Delaware—the Dutch and German colonists often made brick or stone homes that were two-and-a-half or three-and-a-half stories high. Many southern colonists—those living in Virginia, Maryland, North Carolina, South Carolina, and Georgia—lived on large farms called plantations. Their homes were usually made of brick.

In the 18th century, some colonists became wealthy enough to replace their simple homes with mansions, often like those being built by the wealthy class in England. They were called Georgian houses because they were popular during the years that Kings George I, George II, and George III ruled England. Most were made of brick. They usually featured columns, ornately carved doors, and elaborate gardens.

Directions: Answer these questions about early colonial homes.

- What were the earliest homes of the colonists?
bark and mud huts, log cabins, dugouts
- What were the advantages of using wooden shingles?
They didn't catch fire as easily as thatched roofs.
- What did Dutch and German colonists use to build their homes?
brick and stone
- What were Georgian homes?
mansions with columns, ornate doors, and elaborate gardens

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Recalling Details: The Colonial Kitchen

The most important room in the home of a colonial family was the kitchen. Sometimes it was the only room in the home. The most important element of the kitchen was the fireplace. Fire was essential to the colonists, and they were careful to keep one burning at all times. Before the man of the house went to bed, he would make sure that the fire was carefully banked so it would burn all night. In the morning, he would blow the glowing embers into flame again with a bellows. If the fire went out, one of the children would be sent to a neighbor's for hot coals. Because there were no matches, it would sometimes take a half hour to light a new fire, using flint, steel, and tinder.



The colonial kitchen, quite naturally, was centered around the fireplace. One or two large iron boilers hung over the hot coals for cooking the family meals. Above the fireplace, a large musket and powder horn were kept for protection in the event of an attack and to hunt deer and other game. Also likely to be found near the fireplace was a butter churn, where cream from the family's cow was beaten until yellow flakes of butter appeared.

The furniture in the kitchen—usually benches, a table, and chairs—were made by the man or men in the family. It was very heavy and not very comfortable. The colonial family owned few eating utensils—no forks and only a few spoons, also made by members of the family. The dishes included pewter plates, trenchers (wooden bowls with handles), and wooden mugs.

Directions: Answer these questions about the colonial kitchen.

- What was the most important element of the colonial kitchen? **the fireplace**
- In colonial days, why was no important to keep a fire burning in the fireplace?
There were no matches, and fires were hard to start.
- Name two uses of the musket.
a) **protection** b) **hunting**
- Who made most of the furniture in the early colonial home?
the men in the family

Page 117

Sequencing: Spinning

Most of the colonists could not afford to buy clothes sent over from Europe. Instead, the women and girls, particularly in the New England colonies, spent much time spinning thread and weaving cloth to make their own clothing. They raised sheep for wool and grew flax for linen.



In August, the flax was ready to be harvested and made into linen thread. The plants were pulled up and allowed to dry. Then, the men pulled the seed pods from the stalks, bunched the stalks, and soaked them in a stream for about five days. The flax next had to be taken out, cleaned, and dried. To get the linen fibers from the tough bark and heavy wooden core, the stalks had to be pounded and crushed. Finally, the fibers were pulled through the teeth of a brush called a "hatchel" to comb out the short and broken fibers. The long fibers were spun into linen thread on a spinning wheel.

The spinning wheel was low, so a woman sat down to spin. First, she put flax in the hollow end of a slender stick, called the spindle, at one end of the spinning wheel. It was connected by a belt to a big wheel at the other end. The woman turned the wheel by stepping on a pedal. As it turned, the spindle also turned, twisting the flax into thread. The woman constantly dipped her fingers into water to moisten the flax and keep it from breaking. The linen thread came out through a hole in the side of the spindle. It was bleached and put away to be woven into pieces of cloth.

Directions: Number in order the steps to make linen thread from flax.

- The woman sat at the spinning wheel and put flax in the spindle.
- Seed pods were pulled from the stalks; stalks were bunched and soaked.
- In August, the flax was ready to be harvested and made into thread.
- The stalks were pounded and crushed to get the linen fibers.
- The thread was bleached and put away to be woven into cloth.
- The short fibers were separated out with a "hatchel."
- The woman dipped her fingers into water to moisten the flax.
- The long fibers were spun into linen thread on a spinning wheel.
- The woman turned the wheel by stepping on a pedal, twisting the flax into thread.
- The plants were pulled up and allowed to dry.
- The linen thread came out through a hole in the side of the spindle.

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Recalling Details: Clothing in Colonial Times

The clothing of the colonists varied from the North to the South, accounting for the differences not only in climate, but also in the religions and ancestries of the settlers. The clothes seen most often in the early New England colonies where the Puritans settled were very plain and simple. The materials—wool and linen—were warm and sturdy.



The Puritans had strict rules about clothing. There were no bright colors, jewelry, ruffles, or lace. A Puritan woman wore a long-sleeved gray dress with a big white collar, cuffs, apron, and cap. A Puritan man wore long woolen stockings and baggy leather breeches, which were knee-length trousers. Adults and children dressed in the same style of clothing.

In the middle colonies, the clothing ranged from the simple clothing of the Quakers to the colorful, loose-fitting outfits of the Dutch colonists. Dutch women wore more colorful outfits than Puritan women, with many petticoats and fur trim. The men had silver buckles on their shoes and wore big hats decked with curling feathers.

In the southern colonies, where there were no religious restrictions against fancy clothes, wealthy men wore brightly colored breeches and coats of velvet and satin sent from England. The women's gowns also were made of rich materials and were decorated with ruffles, ribbons, and lace. The poorer people wore clothes similar to the simple dress of the New England Puritans.

Directions: Answer these questions about clothing in colonial times.

- Why did the clothing of the colonists vary from the North to the South? **There were differences in climate, and in the religions and ancestries of the settlers.**
- Why did the Puritans wear very plain clothing? **The Puritans had strict rules about clothing and didn't wear bright colors, jewelry, ruffles, or lace.**
- What was the nationality of many settlers in the middle colonies?
Dutch
- From what country did wealthy southern colonists obtain their clothing?
England

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Recalling Details: Venn Diagrams

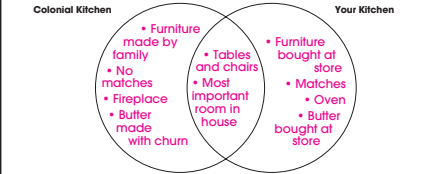
A **Venn diagram** is used to chart information that shows similarities and differences between two things. The outer part of each circle shows the differences. The intersecting part of the circles shows the similarities.

Example:



Directions: Complete the Venn diagram below. Think of at least three things to write in the outer part of each circle (differences) and at least three things to write in the intersecting part (similarities).

Possible answers:



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Comprehension: Colonial Schools

In early colonial days, there were no schools or teachers. Children learned what they could at home from their parents, but often their parents couldn't read or write either. Later, some women in the New England colonies began teaching in their homes. These first schools were known as "dame schools." Often the books used in these schools were not books at all, but rather "hornbooks"—flat, paddle-shaped wooden boards with the alphabet or Lord's Prayer on the front.



In 1647, a law was passed in the New England colonies requiring every town of 50 or more families to establish an elementary school. By the 1700s, one-room log schoolhouses were common. Children of all ages studied together under one strict schoolmaster. They attended school six days a week, from 7:00 or 8:00 in the morning until 4:00 or 5:00 in the afternoon. Their only textbooks were the Bible and the *New England Primer*, which contained the alphabet, spelling words, poems, and questions about the Bible.

Like the New England colonies, the middle colonies also established schools. However, there were few schools in the southern colonies, where most of the people lived on widely separated farms. Wealthy plantation owners hired private teachers from England to teach their children, but the children of poor families received no education.

Directions: Answer these questions about colonial schools.

1. What was a hornbook? **a flat wooden board with the alphabet or Lord's Prayer on the front**
2. What was required by the law passed in the New England colonies in 1647? **Every town with 50 or more families had to establish an elementary school.**
3. During the 1700s, what textbooks were used in the New England schools? **the Bible and the *New England Primer***
4. Why was it hard to establish schools in the southern colonies? **Most people lived on widely separated farms.**

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Compare/Contrast: Schools

Directions: Think about the differences and similarities between colonial and modern schools. Use the chart below to help organize your ideas. Then, write a paragraph discussing the similarities and a paragraph discussing the differences. The topic sentences have been written for you.

Possible answers:

Similarities	Differences
<ul style="list-style-type: none"> studied alphabet, spelling, poems one teacher in the room 	<ul style="list-style-type: none"> one-room log schoolhouses six-day school week 8-9 hour school day only two textbooks

There are several similarities between colonial schools and schools today.

Paragraphs will vary.

Although there are similarities between colonial schools and modern schools, there are also many differences.

Page 122

Comprehension: Religion in New England

Many New England colonists had come to America for religious freedom. Religion was very important to them. One of the first buildings erected in any new settlement was a church, or meetinghouse. They were generally in the center of town and were used for public meetings of all kinds. These early meetinghouses were plain, unpainted wood buildings. Later churches were larger and more elaborate. They were usually painted white and had tall, graceful bell towers rising from the roof.



Although they came to America to have freedom of worship, the Puritans thought that everyone in the colonies should worship the same way they did. Because there were so many of them, the Puritans controlled the government in much of New England. They were the only ones allowed to vote, and they passed very strict laws. Lawbreakers received harsh punishments. For example, someone caught lying might be forced to stand in the town square for hours locked in a pillory—wooden boards with holes cut in them for the head and hands. For other minor offenses, the offender was tied to a whipping post and given several lashes with a whip.

Except in cases of extreme illness, everyone in the New England colonies had to attend church on Sunday. The minister stood in a pulpit high above the pews to deliver his sermon, which could last four or five hours. The people sat on hard, straight-backed pews. In the winter, there was no heat, so church members brought foot warmers from home to use during the long services. In many churches, a "tithingman" walked up and down the aisles carrying a long stick. On one end there were leathers attached; the other end had a knob. If anyone dozed off, the tithingman would tickle him or her with the leathers. If this did not rouse the offender, he would thump them soundly with the knob.

Directions: Answer these questions about religion in the colonies.

1. The main idea is: **Many New England colonists had come to America for religious freedom, and religion was very important to them.**
2. Which religious group exercised a lot of power in the New England colonies? **the Puritans**
3. What was a pillory? **a wooden board with holes cut for the head and hands**
4. What was the only reason for missing Sunday church services in the New England colonies? **extreme illness**
5. What was the job of the tithingman? **to keep people awake in church**

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Writing: Problem and Solution

Directions: Follow the instructions below.

1. Think of a problem the colonial Americans may have encountered. Write a paragraph about this problem. In the paragraph, be sure to state the problem, and then discuss why it would have been a problem for the colonists.

Paragraphs will vary.

2. Think about a solution to the problem above. Write a paragraph outlining your ideas for the solution. Remember to state the solution to the problem and then your ideas to solve the problem.

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Review

Many great colonists made an impact on American history. Among them was Benjamin Franklin, who left his mark as a printer, author, inventor, scientist and statesman. He has been called "the wisest American."

Franklin was born in Boston in 1706, one of 13 children in a very religious Puritan household. Although he had less than two years of formal education, his tremendous appetite for books served him well. At age 12, he became an apprentice printer at *The New England Courant* and soon began writing articles that poked fun at Boston society.



In 1723, Franklin ran away to Philadelphia, where he started his own newspaper. He was very active in the Philadelphia community. He operated a bookstore and was named postmaster. He also helped to establish a library, a fire company, a college, an insurance company, and a hospital. His well-known *Poor Richard's Almanac* was first printed in 1732.

Over the years, Franklin maintained an interest in science and mechanics, leading to such inventions as a fireplace stove and bifocal lenses. In 1752, he gained world fame with his kite-and-key experiment, which proved that lightning was a form of electricity.

Franklin was an active supporter of the colonies throughout the Revolutionary War. He helped to write and was a signer of the Declaration of Independence in 1776. In his later years, he skillfully represented America in Europe, helping to work out a peace treaty with Great Britain.

Directions: Answer these questions about Benjamin Franklin.

1. The main idea is: **Many great colonists made an impact on American history.**
2. How did Benjamin Franklin gain world fame? **his kite-and-key experiment**
3. What did Franklin sign and help to write? **the Declaration of Independence**
4. Number in order the following accomplishments of Benjamin Franklin.
 - 6 Served as representative of America in Europe
 - 3 Began printing *Poor Richard's Almanac*
 - 4 Experimented with electricity
 - 2 Started his own newspaper
 - 5 Helped to write and sign the Declaration of Independence
 - 1 Served as apprentice printer at *The New England Courant*

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Review

Directions: Match each item with its description. If necessary, review the section on colonial times.

- | | | |
|-------------------|----------|---|
| a. hornbooks | j | year Columbus sailed to America |
| b. 1647 | m | schools where New England women taught in their homes |
| c. pillory | g | man who kept worshippers awake during Sunday services |
| d. Ben Franklin | l | plants harvested for linen |
| e. plantations | a | paddle-shaped wooden boards with text on them |
| f. 1776 | b | law written in this year required towns of 50 or more to establish a school |
| g. tithingman | c | punishment rack with holes for head and hands |
| h. spinning wheel | k | wooden bows with handles |
| i. hatchet | d | author of <i>Poor Richard's Almanac</i> |
| j. 1492 | e | large farms in the South |
| k. trenchers | h | wooden machine used to spin wool or flax into thread |
| l. flax | i | used to comb out the short and broken flax fibers |
| m. dame schools | f | year Declaration of Independence was signed |

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Using Prior Knowledge: Abraham Lincoln and the Civil War

Directions: Before reading about Abraham Lincoln and the Civil War in the following section, answer these questions.



- The Civil War began because **Answers will vary.**
- Abraham Lincoln is famous today because _____
- What brought about the end of slavery in the United States? _____
- The Gettysburg Address begins with the famous line: "Four score and seven years ago. . . ." What does this mean? _____
- How did Abraham Lincoln die? _____

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Main Idea: The Gettysburg Address

On November 19, 1863, President Abraham Lincoln gave a short speech to dedicate a cemetery for Civil War soldiers in Gettysburg, Pennsylvania, where a famous battle was fought. He wrote five drafts of the Gettysburg Address, one of the most stirring speeches of all time.

Four score and seven years ago, our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the proposition that all men are created equal.

Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field as a final resting place for those who here gave their lives that this nation might live. It is altogether fitting and proper that we should do this.

But in a larger sense, we cannot dedicate—we cannot consecrate—we cannot hallow—this ground. The brave men, living and dead, who struggled here have consecrated it far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here. It is for us the living, rather, to be dedicated to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave their last full measure of devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom—and that government of the people, by the people, for the people shall not perish from this earth.

Directions: Answer the questions about the Gettysburg Address.

- Circle the main idea:
This speech will be long remembered as a tribute to those who died fighting in the Civil War.
this speech is to honor the soldiers who gave their lives so that the nation could have freedom for all citizens.
- What happened on the ground where the cemetery stood?
A great battle was fought, and many lives were lost.



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Comprehension: The Gettysburg Address

Directions: Use context clues or a dictionary to answer these questions about the Gettysburg Address. **Possible answers:**

- What is the correct definition of **conceived**? _____
to form an idea
- What is the correct definition of **consecrate**? _____
bless
- What is the correct definition of **hallow**? _____
to revere as holy
- What is the correct definition of **devotion**? _____
dedication to
- What is the correct definition of **resolve**? _____
end, finish, to find a solution
- What is the correct definition of **vain**? _____
without cause or reason
- What is the correct definition of **perish**? _____
to die
- What is the correct definition of **civil**? _____
relating to a community, country, or civilians
- In your own words, what point was President Lincoln trying to make? _____
Answers will vary.



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Comprehension: The Emancipation Proclamation

On September 22, 1862, a year before delivering the Gettysburg Address, President Lincoln delivered the Emancipation Proclamation, which stated that all slaves in Confederate states should be set free. Since the Confederate states had already seceded (withdrew) from the Union, they ignored the proclamation. However, the proclamation did strengthen the North's war effort. About 200,000 black men—most former slaves—enlisted in the Union Army. Two years later, the 13th Amendment to the Constitution ended slavery in all parts of the United States.



I, Abraham Lincoln, do order and declare that all persons held as slaves within said designated States and parts of States are, and henceforward shall be, free; and that the Executive Government of the United States, including military and naval authorities thereof, shall recognize and maintain the freedom of said persons.

And I hereby enjoin upon the people so declared to be free to abstain from all violence, unless in necessary self-defense; and I recommend to them that, in all cases where allowed, they labor faithfully for reasonable wages.

And I further declare and make known that such persons of suitable condition will be received into the armed forces of the United States to garrison forts, positions, stations, and other places, and to man vessels of all sorts in said service.
(This is not the full text of the Emancipation Proclamation.)

Directions: Answer the questions about the Emancipation Proclamation.

- How did the Emancipation Proclamation strengthen the North's war effort?
About 200,000 black men enlisted in the Union army.
- Which came first, the Emancipation Proclamation or the Gettysburg Address?
the Emancipation Proclamation
- Which amendment to the Constitution grew out of the Emancipation Proclamation?
the 13th amendment
- Secede** means to quit, fight, withdraw.

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Comprehension: The Emancipation Proclamation

Directions: Use context clues or a dictionary to answer these questions about the Emancipation Proclamation.

- What is the correct definition of **designated**? _____
appointed
- What is the correct definition of **military**? _____
relating to the armed forces
- What is the correct definition of **naval**? _____
relating to the navy or warships
- What is the correct definition of **abstain**? _____
to keep away from or refrain from
- What is the correct definition of **suitable**? _____
appropriate
- What is the correct definition of **garrison**? _____
a fort
- What is the correct definition of **vessels**? _____
ships
- In your own words, what did the Emancipation Proclamation accomplish?
Answers will vary.

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Comprehension: Lincoln and the South

Many people think that Abraham Lincoln publicly came out against slavery from the beginning of his term as president. This is not the case. Whatever his private feelings, he did not criticize slavery publicly. Fearful that the southern states would secede, or leave, the Union, he pledged to respect the southern states' rights to own slaves. He also pledged that the government would respect the southern states' runaway slave laws. These laws required all citizens to return runaway slaves to their masters.

Clearly, Lincoln did not want the country torn apart by a civil war. In the following statement, written in 1861 shortly after he became president, he made it clear that the federal government would do its best to avoid conflict with the southern states.

I hold that, in contemplation of the universal law and the Constitution, the Union of these states is perpetual. . . . No state, upon its own mere motion, can lawfully get out of the Union. . . . I shall take care, as the Constitution itself expressly enjoins upon me, that the laws of the Union be faithfully executed in all the states. . . . The power confided to me will be used to hold, occupy, and possess the property and places belonging to the government, and to collect the duties and imposts. . . .

In your hands, my dissatisfied fellow-countrymen, and not in mine, is the momentous issue of civil war. The government will not assail you. You can have no conflict without yourselves being the aggressors. You have no oath registered in heaven to destroy the government, while I shall have the most solemn one to "preserve, protect, and defend" it.

Directions: Use context clues for these definitions.

- What is the correct definition of **assail**? **to attack, to confront**
 - What is the correct definition of **enjoin**? **to impose a rule or law**
 - What is the correct definition of **contemplation**? _____
thinking deeply about something
- Directions:** Answer these questions about Lincoln and the southern states.
- Lincoln is telling the southern states that the government
 - does want a war.
 - doesn't want a war.
 - will stop a war.
 - As president, Lincoln pledged to "preserve, protect and defend"
 - slavery.
 - the northern states.
 - the Union.

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Comprehension: Away Down South in Dixie

Although many southerners disapproved of slavery, the pressure to go along with the majority who supported slavery was very strong. Many of those who thought slavery was wrong did not talk about their opinions. It was dangerous to do so!

The main reason the southern states seceded from the Union in 1861 was because they wanted to protect their right to own slaves. They also wanted to increase the number of slaves so they could increase production of cotton and other crops that slaves tended. Many Civil War monuments in the South are dedicated to a war that was described as "just and holy."

"Dixie," a song written in 1859 that is still popular in the South, sums up the attitude of many southerners. As the song lyrics show, southerners' loyalties lay not with the Union representing all the states, but with the South and the southern way of life.

Dixie

I wish I was in Dixie, Hoo-ray! Hoo-ray!
In Dixie land I'll take my stand
To live and die in Dixie.

Away, away, away down south in Dixie!
Away, away, away down south in Dixie!
(This is not the full text of the song.)



Directions: Answer these questions about southerners and "Dixie."

1. Why did southerners who disapproved of slavery keep their opinions to themselves?
It was dangerous for them to express their opinions.

2. Why did southerners want more slaves?
to increase production of cotton and other crops

3. What are the words on some southern Civil War monuments?
"just and holy"

4. What "stand" is referred to in "Dixie"?
 stand for slavery stand against slavery stand for cotton

Fact and Opinion

Directions: Read each sentence. Then, draw an **X** in the box to tell whether it is a fact or opinion.

- "Dixie" is a beautiful song! Fact Opinion
- It was written in 1859 by a man named Daniel Emmett, who died in 1904. Fact Opinion
- The song became a rallying cry for southerners, because it showed where their loyalties were. Fact Opinion
- I think their loyalty to slavery was absolutely wrong! Fact Opinion
- These four states where people owned slaves did not secede from the Union: Delaware, Maryland, Kentucky, and Missouri. Fact Opinion
- The people in these states certainly made the right moral choice. Fact Opinion
- The ownership of one human being by another is absolutely and totally wrong under any circumstances. Fact Opinion
- In the states that did not secede from the Union, some people fought for the Union, and others fought for the Confederacy of Southern States. Fact Opinion
- Sometimes brothers fought against brothers on opposite sides of the war. Fact Opinion
- What a horrible situation to be in! Fact Opinion



Recalling Details: The Civil War

Although they were outnumbered, most southerners were convinced they could win the Civil War. The white population of the southern states that had seceded from the Union was 5.5 million. The population was 18.9 million in the 19 states that stayed with the Union. Despite these odds, southerners felt history was on their side.

After all, the colonists had been the underdogs against the British and had won the War of Independence. Europeans also felt that Lincoln could not force the South to rejoin the Union. The United Netherlands had successfully seceded from Spain. Greece had seceded from Turkey. Europeans were laying odds that two countries would take the place of what had once been the United States.

Directions: Answer these questions, and complete the puzzle about the Civil War.

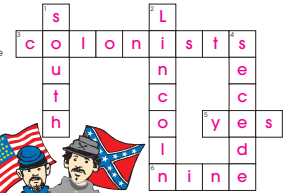
1. What was the difference in population between the Union and the Confederate states?
13.4 million

2. Circle the main idea:
Although they were outnumbered, many people here and abroad felt the South would win the Civil War.

Because they were outnumbered, southerners knew that winning the Civil War was a long shot.

Across:

- They won the War of Independence against England.
- Did Europeans believe the South would win the war?
- _____teen states belonged to the Union.



Down:

- Slave owners lived in this area of the country.
- The president during the Civil War.
- To withdraw from the Union.

Recalling Details: Abraham Lincoln

Directions: Complete the following exercises.

1. Describe two accomplishments of Abraham Lincoln.
Answers will vary.

2. Complete the time line by writing and illustrating the events.



Illustrations will vary. Possible answers shown.

1861 southern states secede from the Union 1862 Lincoln gives Emancipation Proclamation 1863 Lincoln gives Gettysburg Address 13th Amendment to the Constitution ends slavery 1864 1865 Civil War ends

3. In your opinion, what could Lincoln have done differently to end the Civil War sooner?
Answers will vary.

Fact and Opinion

Directions: Read each sentence. Then, draw an **X** in the box to tell whether it is a fact or an opinion.

- Lincoln warned the southern states that they could not legally leave the Union. Fact Opinion
- I believe Lincoln thought the northern states were the best because they did not have slaves. Fact Opinion
- I think Lincoln did the right thing, don't you? Fact Opinion
- The issues that sparked the Civil War were complicated and difficult ones. Fact Opinion
- It would take a historian to really understand them! Fact Opinion
- The "dissatisfied fellow-countrymen" Lincoln refers to in his statement lived in the southern states. Fact Opinion
- As president, Lincoln took an oath to "preserve, protect, and defend" the Union, which included all the states. Fact Opinion
- Lincoln did his personal best to hold the country together, but it didn't do one bit of good. Fact Opinion
- The Confederate States of America had already been organized in February 1861, a month before Lincoln was sworn in as president. Fact Opinion
- Poor Abraham Lincoln—what a crummy start to his presidency! Fact Opinion



Using Prior Knowledge: Anthems and Songs

Directions: Before reading about anthems and songs in the following section, answer these questions.

1. How do national anthems help pull a country together?
Answers will vary.

2. Describe what you know about how and why "The Star-Spangled Banner" was written.

3. What is your favorite anthem or song?

4. What images do the words of your favorite anthem or song bring to mind? Why do you like it?



ANSWER KEY

Comprehension: Our National Anthem

Written in 1814 by Francis Scott Key, our American national anthem is stirring, beautiful, and difficult to sing. Key wrote the song while aboard a ship off the coast of Maryland, where one long night he watched the gunfire from a British attack on America's Fort M'Henry. The following morning, he wrote "The Star-Spangled Banner" when, to his great joy, he saw the American flag still flying over the fort—a sign that the Americans had not lost the battle.

The Star-Spangled Banner

Oh say, can you see, by the dawn's early light,
What so proudly we hail'd at the twilight's last gleaming?
Whose broad stripes and bright stars thro' the perilous fight,
O'er the ramparts we watch'd, a wreath of glory streaming?
And the rockets' red glare, the bombs bursting in air,
Gave proof thro' the night that our flag was still there,
Oh say, does that star-spangled banner yet wave
O'er the land of the free and the home of the brave?
On the shore dimly seen thro' the mists of the deep,
Where the foe's haughty host in dread silence reposes,
What is that which the breeze, o'er the towering steep,
As it fitfully blows, half conceals, half discloses?
Now it catches the gleam of the morning's first beam,
In full glory reflected, now shines on the stream:
'Tis the star-spangled banner, O, long may it wave
O'er the land of the free and the home of the brave!



Directions: Answer these questions about the first two verses of "The Star-Spangled Banner."

1. Who wrote "The Star-Spangled Banner"? Francis Scott Key
2. What is "The Star-Spangled Banner"? The American National Anthem
3. In what year was the song written? 1814
4. At what time of day was the song written? in the morning
5. Tell what is meant by the lines "... the rockets' red glare, the bombs bursting in air/Gave proof through the night that our flag was still there."
He would see the U.S. flag flying by the light of the rockets and bombs.

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Comprehension: "The Star-Spangled Banner"

Directions: Use context clues or a dictionary to answer these questions about "The Star-Spangled Banner."

1. What is the correct definition of **spangled**?
shining or glittering
2. What is the correct definition of **twilight**?
early evening, dusk
3. What is the correct definition of **ramparts**?
walls of a fort
4. What is the correct definition of **gallantly**?
bravely, proudly
5. What is the correct definition of **haughty**?
proud
6. What is the correct definition of **reposes**?
rests, sleeps
7. Why do you think United States citizens only sing the first verse of "The Star-Spangled Banner"?
Answers will vary.
8. What war was being fought when this song was written?
the War of 1812
9. Have you ever heard the second verse of "The Star-Spangled Banner"? Knowing the tune, can you sing the second verse?
Answers will vary.



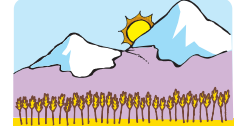
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Comprehension: "America the Beautiful"

Written in 1895 by Katherine Lee Bates, "America the Beautiful" is another very popular patriotic song. It is so popular, in fact, that some people would like to see it replace "The Star-Spangled Banner" as the United States' national anthem. Ms. Bates was inspired to write the song while visiting Colorado, where she was struck by the splendor of the mountains. Today, "America the Beautiful" remains a tribute to our country's natural beauty.

America the Beautiful

Oh beautiful for spacious skies,
For amber waves of grain,
For purple mountains majesties
Above the fruited plain!
America! America!
God shed His grace on thee,
And crown thy good
With brotherhood
From sea to shining sea!



Directions: Use context clues or a dictionary to answer these questions about "America the Beautiful."

1. What is the correct definition of **tribute**? something that shows respect, gratitude, or affection
2. What is the correct definition of **amber**? dark yellow-gold
What other word might you use for **amber** in the song? golden
3. What is the singular form of **majesties**? What does it mean in the song?
majesty; beautiful, glorious sights
4. "From sea to shining sea" means the oceans to the east and west of the United States. What are their names?
Atlantic Pacific
5. Do you think "America the Beautiful" should be our national anthem? Why or why not?
Answers will vary.

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Comprehension: Civil War Marching Song

When soldiers march, they sometimes sing a song to help them keep in step. One of the most famous marching songs of the Civil War was the "Battle Hymn of the Republic," written in 1861 by Julia Ward Howe. Mrs. Howe wrote the song after visiting a Union army camp in the North. The words are about how God is on the side of the soldiers.

Battle Hymn of the Republic

Mine eyes have seen the glory of the coming of the Lord,
He is trampling out the vintage where the grapes of wrath are stored;
He has loosed the faithful lightning of his terrible swift sword,
His truth is marching on.
Glory, glory hallelujah! Glory, glory hallelujah!
Glory, glory hallelujah! His truth is marching on.
I have seen him in the watchtowers of a hundred circling camps,
I have builded him an altar in the evening dews and damps,
I can read his righteous sentence by the dim and flaring lamps,
His day is marching on.
Glory, glory hallelujah! Glory, glory hallelujah!
Glory, glory hallelujah! His truth is marching on.



Directions: Answer these questions about the "Battle Hymn of the Republic."

1. Who wrote the "Battle Hymn of the Republic"? Julia Ward Howe
2. When was the song written? 1861
3. What war was in progress at the time? the Civil War
4. Why did soldiers sing while they marched? to help them keep in step
5. What marches on along with the soldiers? God
6. What did the soldiers sing about building in the evening?
an altar

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Review

National anthems, work songs, and marching songs share some common characteristics. Perhaps the most important characteristic is that the words strike an emotional response in singers and listeners alike.

Have you ever sung "The Star-Spangled Banner" at a baseball game or other large public event? The next time you do, look around as you sing. You will see that Americans from all walks of life and all races sing the song proudly. The words to the national anthem help create a feeling of unity among people who may not have much in common. The same is true of the national anthems of France, England, and other countries.

Another characteristic of these types of songs is that the words are simple, the message is clear, and the tune should be easy to carry. This is not always true, of course. Many people's voices crack during the high notes of "The Star-Spangled Banner." But attempts to change the national anthem to "America the Beautiful" or another song with a simpler tune have always met with dismal failure. It may be hard to sing, but most Americans wouldn't trade it for any other tune. It's a long-held American tradition, and nearly everyone knows the words. Americans love what this song stands for. They are proud to live in a country that is the "land of the free."

Directions: Answer these questions about the characteristics of national anthems, work songs, and marching songs.

1. Explain what goes into writing a good national anthem. They must strike an emotional response, create a feeling of unity, and have simple words and a melody.
2. What does our national anthem help do?
It helps create a feeling of unity among people.
3. What happens each time someone tries to change the national anthem to "America the Beautiful" or another song?
They are met with failure.
4. Why do people stick with "The Star-Spangled Banner" as our national anthem?
It's traditional and most people know the words.



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Recalling Details: The Island Continent

Australia is the only country that fills an entire continent. It is the smallest continent in the world but the sixth largest country. Australia, called the island continent, is totally surrounded by water—the Indian Ocean on the west and south, the Pacific Ocean on the east, and the Arafura Sea, which is formed by these two oceans coming together, to the north.

The island continent is, in large part, a very dry, flat land. Yet it supports a magnificent and unusual collection of wildlife. Because of its remoteness, Australia is home to plants and animals that are not found anywhere else in the world. Besides the well-known kangaroo and koala, the strange animals of the continent include the wombat, dingo, kookaburra, emu, and, perhaps the strangest of all, the duckbill platypus. There are many physical features of Australia that also are unique, including the central part of the country known as the Outback, which consists of three main deserts—the Great Sandy, the Gibson, and the Great Victoria. Because much of the country is desert, more than half of all Australians live in large, modern cities along the coast. There are also many people living in the small towns on the edge of the Outback, where there is plenty of grass for raising sheep and cattle. In fact, there are about five times as many sheep in Australia as there are people!

Directions: Answer these questions about Australia.

1. What are the three large bodies of water that surround Australia?
a) the Indian Ocean b) the Pacific Ocean c) the Arafura Sea
2. Besides the kangaroo and the koala, name three other unusual animals found only in Australia. **Possible answers:**
a) wombat b) dingo c) emu
3. What three deserts make up the Outback?
a) the Great Sandy b) the Gibson c) the Great Victoria



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Comprehension: The Aborigines

The native, or earliest known, people of Australia are the Aborigines (ab-UH-uh-nee-z). They arrived on the continent from Asia more than 20,000 years ago. Before the Europeans began settling in Australia during the early 1800s, there were about 300,000 Aborigines. But the new settlers brought diseases that killed many of these native people. Today, there are only about 125,000 Aborigines living in Australia, many of whom now live in the cities.

The way of life of the Aborigines, who still live like their ancestors, is closely related to nature. They live as hunters and gatherers and do not produce crops or raise livestock. The Aborigines have no permanent settlements, only small camps near watering places. Because they live off the land, they must frequently move about in search of food. They have few belongings and little or no clothing.

Some tribes of Aborigines, especially those who live in the desert, may move 100 times in a year. They might move more than 1,000 miles on foot during that time. These tribes set up temporary homes, such as tents made of bark and igloo-like structures made of grass.

The Aborigines have no written language, but they have developed a system of hand signals. These are used during hunting when silence is necessary and during their elaborate religious ceremonies when talking is forbidden.



Directions: Circle **True** or **False** for these statements about Aborigines.

- The Aborigines came from Europe to settle in Australia. True False
- The Aborigines live as hunters and gatherers rather than as farmers. True False
- The tribes move about often to find jobs. True False
- The people move often to help them raise their livestock. True False
- Aborigine tribes always move 200 times a year. True False

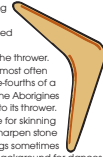
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Main Idea/Comprehension: The Boomerang

The Aborigines have developed a few tools and weapons, including spears, flint knives, and the boomerang. The boomerang comes in different shapes and has many uses. This curved throwing stick is used for hunting, playing, digging, cutting, and even making music.

You may have seen a boomerang that, when thrown, returns to the thrower. This type of boomerang is sometimes used in duck hunting, but it is most often used as a toy and for sporting contests. It is lightweight—about three-fourths of a pound—and has a big curve in it. However, the boomerang used by the Aborigines for hunting is much heavier and is nearly straight. It does not return to its thrower. Because of its sharp edges, the boomerang makes a good knife for skinning animals. The Aborigines also use boomerangs as digging sticks, to sharpen stone blades, to start fires, and as swords and clubs in fighting. Boomerangs sometimes are used to make music—two clapped together provide rhythmic background for dances. Some make musical sounds when they are pulled across one another.

To throw a boomerang, the thrower grasps it at one end and holds it behind his head. He throws it overhanded, adding a sharp flick of the wrist at the last moment. It is thrown into the wind to make it come back. A skillful thrower can do many tricks with his boomerang. He can make it spin in several circles, or make a figure eight in the air. He can even make it bounce on the ground several times before it soars into the air and returns.



Directions: Answer these questions about boomerangs.

- The main idea is:
 - The Aborigines have developed a few tools and weapons, including spears, flint knives, and the boomerang.
 - The boomerang comes in different shapes and has many uses.
- To make it return, the thrower tosses the boomerang
 - into the wind.
 - against the wind.
- List three uses for the boomerang.
 - a) hunting
 - b) playing
 - c) digging

Possible answers:

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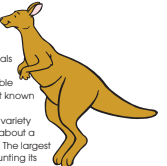
Comprehension: The Kangaroo

Many animals found in Australia are not found anywhere else in the world. Because the island continent was separated from the rest of the world for many years, these animals developed in different ways. Many of the animals in Australia are marsupials. Marsupials are animals whose babies are born underdeveloped and are then carried in a pouch on the mother's body until they are able to care for themselves. The kangaroo is perhaps the best known of the marsupials.

There are 45 kinds of kangaroos, and they come in a variety of sizes. The smallest is the musky rat kangaroo, which is about a foot long, including its hairless tail. It weighs only a pound. The largest is the gray kangaroo, which is more than 9 feet long, counting its tail, and can weigh 200 pounds. When moving quickly, a kangaroo can leap 25 feet and move at 30 miles an hour.

A baby kangaroo, called a joey, is totally helpless at birth. It is only three-quarters of an inch long and weighs a fraction of an ounce. The newly born joey immediately crawls into its mother's pouch and remains there until it is old enough to be independent—which can be as long as eight months.

Kangaroos eat grasses and plants. They can cause problems for farmers and ranchers in Australia because they compete with cattle for pastures. During a drought, kangaroos may invade ranches and even airports looking for food.



Directions: Answer these questions about kangaroos.

- What are marsupials? Marsupials are animals whose babies are born underdeveloped and are carried in the mother's pouch until they can care for themselves.
- What is the smallest kangaroo? the musky rat kangaroo
- What is a baby kangaroo called? a joey
- Why did Australian animals develop differently from other animals? The island was separated from the rest of the world for many years, so these animals developed in different ways.

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Comprehension: The Koala

The koala lives in eastern Australia in the eucalyptus (you-cay-lee-tees) forests. These slow, gentle animals hide by day, usually sleeping in the trees. They come out at night to eat. Koalas eat only certain types of eucalyptus leaves. Their entire way of life centers on this unique diet. The koala's digestive system is specially adapted for eating eucalyptus leaves. In fact, to other animals, these leaves are poisonous.

The woolly, round-eared koala looks like a cuddly teddy bear, but it is not related to any bear. It is a marsupial like the kangaroo. And, like the joey, a baby koala requires a lot of care. It will remain constantly in its mother's pouch until it is six months old. After that, a baby koala will ride piggyback on its mother for another month or two, even though it is nearly as big as she is. Koalas have few babies—only one every other year. While in her pouch, the baby koala lives on its mother's milk. After it is big enough to be on its own, the koala will almost never drink anything again.

Oddly, the mother koala's pouch is backwards—the opening is at the bottom. This leads scientists to believe that the koala once lived on the ground and walked on all fours. But of some point, the koala became a tree dweller. This makes an upside-down pouch very awkward! The babies keep from falling to the ground by holding on tightly with their mouths. The mother koala has developed strong muscles around the rim of her pouch that also help to hold the baby in.



Directions: Answer these questions about koalas.

- What is the correct definition for **eucalyptus**?
 - enormous
 - a type of tree
 - rain
- What is the correct definition for **digestive**?
 - the process in which food is absorbed in the body
 - the process of finding food
 - the process of tasting
- What is the correct definition for **dweller**?
 - one who climbs
 - one who eats
 - one who lives in

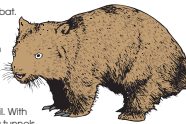
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Comprehension: The Wombat

Another animal unique to Australia is the wombat. The wombat has characteristics in common with other animals. Like the koala, the wombat is also a marsupial with a backwards pouch. The pouch is more practical for the wombat, which lives on the ground rather than in trees. The wombat walks on all fours, so the baby is in less danger of falling out.

The wombat resembles a beaver without a tail. With its strong claws, it is an expert digger. It makes long tunnels beneath cliffs and boulders in which it sleeps all day. At night, it comes out to look for food. It has strong, beaver-like teeth to chew through the various plant roots it eats. A wombat's teeth have no roots, like a rodent's. Its teeth keep growing from the inside as they are worn down from the outside.

The wombat, which can be up to 4 feet long and weighs 60 pounds when full grown, eats only grass, plants, and roots. It is a shy, quiet, and gentle animal that would never attack. But when angered, it has a strong bite and very sharp teeth! And, while wombats don't eat or attack other animals, the many deep burrows they dig to sleep in are often dangerous to the other animals living nearby.



Directions: Answer these questions about the wombat.

- How is the wombat similar to the koala? It is a marsupial with a backwards pouch.
- How is the wombat similar to the beaver? It has strong claws to dig and strong teeth to chew through plants.
- How is the wombat similar to a rodent? Its teeth have no roots but keep growing from the inside as they are worn down from the outside.

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Comprehension: The Duckbill Platypus

Australia's duckbill platypus is a most unusual animal. It is very strange-looking and has caused a lot of confusion for people studying it. For many years, even scientists did not know how to classify it. The platypus has webbed feet and a bill like a duck. But it doesn't have wings, has fur instead of feathers, and has four legs instead of two. The baby platypus gets milk from its mother, like a mammal, but it is hatched from a tough-skinned egg, like a reptile. A platypus also has a poisonous spur on each of its back legs that is like the tip of a viper's fangs. Scientists have put the platypus—along with another strange animal from Australia called the spiny anteater—in a special class of mammal called "monotremes."

The platypus has an amazing appetite! It has been estimated that a full-grown platypus eats about 1,200 earthworms, 50 crayfish, and numerous tadpoles and insects every day. The platypus is an excellent swimmer and diver. It dives under the water of a stream and searches the muddy bottom for food.

A mother platypus lays one or two eggs, which are very small—only about an inch long—and leathery in appearance. During the seven to 14 days it takes for the eggs to hatch, the mother never leaves them, not even to eat. The tiny platypus, which is only a half-inch long, cuts its way out of the shell with a sharp point on its bill. This point is known as an "egg tooth," and it will fall off soon after birth. (Many reptiles and birds have egg teeth, but they are unknown in other mammals.) By the time it is 4 months old, the baby platypus is about a foot long—half its adult size—and is learning how to swim and hunt.



Directions: Answer these questions about the duckbill platypus.

- In what way is a duckbill platypus like other mammals? It gets milk from its mother.
- In what way is it like a reptile? It hatches from an egg.
- What other animal is in the class of mammal called "monotremes"? the spiny anteater
- What makes up the diet of a platypus? earthworms, crayfish, tadpoles, and insects
- On what other animals would you see an "egg tooth"? On many reptiles and birds

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ANSWER KEY

Recalling Details: Animals of Australia

Directions: Complete the chart with information from the selection on Australian animals.

	Gray Kangaroo	Koala	Wombat	Platypus
What are the animal's physical characteristics?	4 feet long 200 pounds marsupial good leaper fast mover	wooly round-eared marsupial good climber	marsupial walks on all fours strong claws and teeth up to 4 feet long 60 pounds	webbed feet duck-like bill fur, four legs hatches from egg poisonous spur 2 feet long good swimmer
What is the animal's habitat?	farmland of Australia	eucalyptus forests of eastern Australia	tunnels beneath cliffs and boulders	streams with muddy bottoms
What does the animal eat?	grasses, plants	eucalyptus leaves	grasses, plants, roots	earthworms, crayfish, tadpoles, insects

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Main Idea/Recalling Details: Land Down Under

Australia and New Zealand are often referred to as the "land down under." The name, made popular by American soldiers stationed there during World War II, grew out of the idea that these two countries are opposite or below Europe on the globe. While Australia and New Zealand are often linked, they are individual countries, separated by more than 1,000 miles of ocean.



Their landscapes are quite different. New Zealand is made up of two main islands, North and South Island, which are nearly covered by snowy mountains. One of the most unusual and beautiful areas of New Zealand is the volcanic region around Lake Taupo on North Island. There, you will see boiling springs, pools of steaming mud, hot-water geysers, small lakes with beds of brightly colored rocks, and waterfalls. While most of the people of New Zealand live and work in the industrialized cities, dairy farming is most important to the country's economy. New Zealanders eat a great deal of meat and butter, and they sell huge amounts to other countries.

As in Australia, many of the customs in New Zealand would be familiar to a traveler from America because the two countries were settled by British settlers hundreds of years ago. However, the native islanders have descended from Asian ancestors, so the remnants of ancient Eastern practices exist alongside the European way of life.

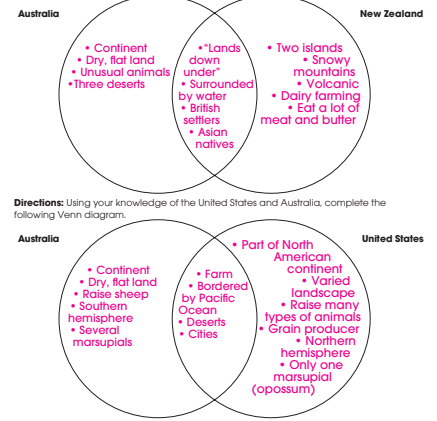
Directions: Answer these questions about New Zealand and Australia.

- The main idea is:
 - Australia and New Zealand are often referred to as the "land down under."
 - While Australia and New Zealand are often linked, they are individual countries.
- What is the correct definition for **landscape**?
 - natural scenery and features
 - mountainsides
 - natural resources
- What is the correct definition for **economy**?
 - thrifty
 - money management
 - countryside
- What is the nickname for Australia and New Zealand? **"the land down under"**
- What business is most important to the New Zealand economy? **dairy farming**

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Venn Diagrams: Australia and New Zealand

Directions: Although Australia and New Zealand are close geographically to each other, they have many differences. After reading the selection, "Land Down Under," complete the following Venn diagram.



Page 153

Review

Directions: Write **T** for true and **F** for false.

- F** 1. Australia and New Zealand are similar in landscape.
- T** 2. Australia is home to the duckbill platypus.
- T** 3. The wombat resembles a beaver without a tail.
- T** 4. The platypus is a special mammal called a monotreme.
- T** 5. A kangaroo is a marsupial.
- F** 6. Baby kangaroos are independent at birth.
- F** 7. Koalas are related to bears.
- T** 8. Female koalas and kangaroos both have pouches.
- F** 9. Koalas eat all types of leaves.
- T** 10. There are over 40 kinds of kangaroos.
- T** 11. The Australian Outback is located in the central part of the country.
- T** 12. Australia is known for its great number of sheep.
- T** 13. Aborigines arrived in Australia over 20,000 years ago.
- F** 14. Aborigines live in one central place.



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Using Prior Knowledge: World Cities

Directions: Before reading about world cities in the following section, write one or two sentences telling what you know about each city below. **Answers will vary.**

- London, England** _____
- _____
- _____
- Berlin, Germany** _____
- _____
- _____
- Sydney, Australia** _____
- _____
- _____
- Cairo, Egypt** _____
- _____
- _____
- Washington, D.C., United States** _____
- _____
- _____
- Ottawa, Canada** _____
- _____
- _____

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Creative Writing: London

- London is the capital of England.
- Over 8 million people live in London.
- Among cities its size, London is the greenest city in the world.
- London is one of Europe's largest seaports.
- London has many historic sites, including Westminster Abbey, Houses of Parliament, Big Ben, and Buckingham Palace.
- Buckingham Palace is the residence of the queen of England, Queen Elizabeth II.



Directions: Using the above information, create a tourist article describing London. Do some research, and add other interesting information. **Answers will vary.**

When you think of England, what comes to mind? _____

Would you like to visit London? Why or why not? _____

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ANSWER KEY

Review

Directions: Using page 162 as a guide, complete the Venn diagram comparing Sydney, Australia, and Cairo, Egypt. Then, write a two-paragraph compare/contrast essay.

Compare/Contrast Essay **Essays will vary.**

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Using Prior Knowledge: Dinosaurs

Everyone is intrigued by dinosaurs. Their size, ferocity, and sudden disappearance have fueled scientific investigations for well over a century.

Directions: Before reading about dinosaurs in the following section, answer these questions.

- Describe what you know about meat-eating dinosaurs. _____

- Describe what you know about plant-eating dinosaurs. _____

- Which dinosaur most intrigues you? Why? _____

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Main Idea: Small Dinosaurs

When most people think of dinosaurs, they visualize enormous creatures. Actually, there were many species of small dinosaurs—some were only the size of chickens. Like the larger dinosaurs, the Latin names of the smaller ones usually describe the creature. A small but fast species of dinosaur was *Saltopus*, which means "leaping foot." An adult *Saltopus* weighed only about 2 pounds and grew to be approximately 2 feet long. Fossils of this dinosaur, which lived about 200 million years ago, have been found only in Scotland.

Another small dinosaur with an interesting name was *Compsognathus*, which means "pretty jaw." About the same length as *Saltopus*, *Compsognathus* weighed about three times more. It's unlikely that these two species knew one another, since *Compsognathus* remains have been found only in France and Germany.

A small dinosaur whose remains have been found in southern Africa is *Lesothosaurus*, which means "Lesotho lizard." This lizard-like dinosaur was named only partly for its appearance. The first half of its name is based on the place its remains were found—Lesotho, in southern Africa.

Directions: Answer these questions about small dinosaurs.

- Circle the main idea:
 People who think dinosaurs were big are completely wrong.
 (There are several species of small dinosaurs, some weighing only 2 pounds.)
- How much did *Saltopus* weigh? about 2 pounds
- Which dinosaur's name means "pretty jaw"? Compsognathus

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Comprehension: Dinosaur History

Dinosaurs are so popular today that it's hard to imagine this not always being the case. The fact is, no one had any idea that dinosaurs ever existed until about 150 years ago.

In 1841, a British scientist named Richard Owen coined the term **Dinosauria** to describe several sets of recently discovered large fossil bones. **Dinosauria** is Latin for "terrible lizards," and even though some dinosaurs were similar to lizards, modern science now also links dinosaurs to birds. Today's birds are thought to be the closest relatives to the dinosaurs.

Like birds, most dinosaurs had fairly long legs that extended straight down from beneath their bodies. Because of their long legs, many dinosaurs were able to move fast. They were also able to balance themselves well. Long-legged dinosaurs, such as *Iguanodon*, needed balance to walk upright.

Iguanodon walked on its long hind legs and used its stubby front legs as arms. On the end of its arms were five hoof-like fingers, one of which functioned as a thumb. Because it had no front teeth for tearing meat, scientists believe *Iguanodon* was a plant eater. Its large, flat back teeth were useful for grinding tender plants before swallowing them.

Directions: Answer these questions about the history of dinosaurs.

- How were dinosaurs like today's birds? Most had fairly long, straight legs that extended straight down beneath their bodies.
- This man coined the term **Dinosauria**.
 Owen Richards Richard Owens Richard Owen
- Which of these did *Iguanodon* not have?
 short front legs front teeth back teeth
- List other ways you can think of that dinosaurs and birds are alike. _____

Answers will vary.

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Recalling Details: Dinosaur Puzzler

Directions: Use the facts you have learned about dinosaurs to complete the puzzle.

Across:

- This dinosaur had five hoof-like fingers on its short front legs.
- Dinosaurs with flat back teeth were _____ eaters.
- Because of where their legs were positioned, dinosaurs had good _____.

Down:

- Most dinosaurs had _____ legs.
- The word **Dinosauria** means "terrible _____."
- A bone that has been preserved for many years.
- Dinosaurs were not always as _____ as they are now.
- Iguanodon*s walked on their _____ legs.
- Richard _____ coined the term **Dinosauria**.
- Dinosaurs are closely related to today's _____.

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Comprehension: Tyrannosaurus Rex

One of the largest meat-eating animals ever to roam Earth was *Tyrannosaurus Rex*. **Rex** is Latin for "king," and because of its size, *Tyrannosaurus* certainly was at the top of the dinosaur heap. With a length of 46 feet and a weight of 7 tons, there's no doubt this dinosaur commanded respect!

Unlike smaller dinosaurs, *Tyrannosaurus* wasn't tremendously fast on its huge feet. It could stroll along at a walking speed of 2 to 3 miles an hour. Not bad, considering *Tyrannosaurus* was pulling along a body that weighed 14,000 pounds! Like other dinosaurs, *Tyrannosaurus* walked upright, probably balancing its 16-foot-long head by lifting its massive tail.

Compared to the rest of its body, *Tyrannosaurus*'s front claws were tiny. Scientists aren't really sure what the claws were for, although it seems likely that they may have been used for holding food. In that case, *Tyrannosaurus* would have had to lower its massive head down to its short claws to take anything in its mouth. Maybe it just used the claws to scratch nearby liches!

Because of their low metabolism, dinosaurs did not require a lot of food for survival. Scientists speculate that *Tyrannosaurus* ate off the same huge piece of meat—usually the carcass of another dinosaur—for several weeks. What do you suppose *Tyrannosaurus* did the rest of the time?

Directions: Answer these questions about *Tyrannosaurus Rex*.

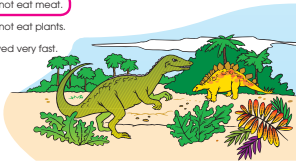
- Why was this dinosaur called "Rex"? Rex means "king."
- For what might *Tyrannosaurus Rex* have used its claws? _____
to hold food
- How long was *Tyrannosaurus Rex*? about 46 feet
- Tyrannosaurus* weighed _____
 10,000 lbs. 12,000 lbs. 14,000 lbs.
- Tyrannosaurus* ate _____
 plants. other dinosaurs. birds.

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Generalization: Dinosaur Characteristics

Directions: Read each passage, and circle the valid generalization.

- Not surprisingly, Tyrannosaurus had huge teeth in its mammoth head. They were 6 inches long! Because it was a meat eater, Tyrannosaurus's teeth were sharp. They looked like spikes! In comparison, the long-necked, plant-eating Mamenchisaurus had a tiny head and small, flat teeth.
 - Scientists can't figure out why some dinosaurs had huge teeth.
 - Tyrannosaurus was probably scarier looking than Mamenchisaurus.
 - Sharp teeth would have helped Mamenchisaurus chew better.
- Dinosaurs' names often reflect their size or some other physical trait. For example, Compsognathus means "pretty jaw," Saltopus means "leaping foot," Lesothosaurus means "lizard from Lesotho."
 - Of the three species, Lesothosaurus was probably the fastest.
 - Of the three species, Compsognathus was probably the fastest.
 - Of the three species, Saltopus was probably the fastest.
- Edmontosaurus, a huge 3-ton dinosaur, had 1,000 teeth! The teeth were cemented into chewing pads in the back of Edmontosaurus's mouth. Unlike the sharp teeth of the meat-eating Tyrannosaurus, this dinosaur's teeth were flat.
 - Edmontosaurus did not eat meat!
 - Edmontosaurus did not eat plants.
 - Edmontosaurus moved very fast.



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Comprehension: Dinosaur Fossils

Imagine putting together the world's largest jigsaw puzzle. That is what scientists who reassemble the fossil bones of dinosaurs must do to find out what the creatures looked like. Fossilized bones are imbedded, or stuck, in solid rock, so scientists must first get the bones out of the rocks without breaking or otherwise damaging them. This task requires enormous patience.

In addition to hammers, drills, and chisels, sound waves are used to break up the rock. The drills, which are similar to high-speed dental drills, cut through the rock very quickly. As the bones are removed, scientists begin trying to figure out how they attach to one another. Sometimes the dinosaur's skeleton was preserved just as it was when it died. This, of course, shows scientists exactly how to reassemble it. Other times, parts of bone are missing. It then becomes a guessing game to decide what goes where.

When scientists discover dinosaur fossils, it is called a "find." A particularly exciting find in 1978 occurred in Montana when, for the first time, fossilized dinosaur eggs, babies, and several nests were found. The species of dinosaur in this exciting find was Maiasaura, which means "good mother lizard." From the size of the nest, which was 23 feet, scientists speculated that the adult female Maiasaura was about the same size.

Unlike birds' nests, dinosaur nests were not made of sticks and straw. Instead, since they were land animals, nests were made of dirt hollowed out into a bowl shape. The Maiasaura's nest was 3 feet deep and held about 20 eggs.

Directions: Answer these questions about dinosaur fossils.

- Name four tools used to remove dinosaur bones from rock.

hammers, drills, chisels, sound waves
- What do scientists do with the bones they remove?

They try to reassemble them.
- The type of dinosaur fossils found in Montana in 1978 were

Mayasaura. Masaura. Maiasaura.
- When scientists discover dinosaur fossils, it is called a

found. find. nest.



Page 171

Generalization: Plant-Eating Dinosaurs

Directions: Read each passage, and circle the valid generalization.

- Many of the plant-eating dinosaur belonged to a common species called Sauropods. Most Sauropods were very large. They had peg-shaped teeth, and they formed herds to search for food. They used their long necks to reach the top branches of trees, where the most tender leaves grew.
 - Their size, teeth, and long necks made Sauropods perfectly suited to their environment!
 - The Sauropods' peg-like teeth were not well suited to eating meat.
 - Vegitarian dinosaurs needed short necks and sharp teeth to survive.
- Sauropods were not the only dinosaurs that traveled in herds. Sets of different-sized fossilized dinosaur footprints discovered in Texas show that other types of dinosaurs also traveled together. The footprints—23 sets of them—were of another plant-eating dinosaur, the Apatosaurus.
 - All dinosaurs traveled in herds because they needed companionship.
 - It appears that some plant-eating dinosaurs traveled in herds.
 - Traveling in herds offered dinosaurs protection and friendship.
- Not all plant-eating dinosaurs were huge. The Hypsilophodon was only about 6½ feet tall. It stood on its two back legs and, because of its smaller size, probably ran away from danger.
 - The Hypsilophodon didn't stand a chance against bigger dinosaurs.
 - The Hypsilophodon could not eat from the tops of tall trees.
 - The Hypsilophodon was cowardly and always ran from danger.



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Comprehension: Dinosaur Tracks

Some scientists refer to dinosaurs' fossilized tracks as "footprints in time." The tracks that survived in Texas for 120 million years had been made in sand or mud. These large footprints were of the Apatosaurus. The footprints were more than 3 feet across!

Although Apatosaurus had a long, heavy tail, there is no sign that the tail hit the ground along with the feet. Scientists speculate that the place where the tracks were found was once a riverbed, and that Apatosaurus's tail floated in the water and thus left no tracks. Another theory is that the dinosaur always carried its tail out behind it. This second theory is not as popular, because scientists say it's unlikely the dinosaur would consistently carry its long, heavy tail off the ground. When Apatosaurus rested, for example, the tail would have left its mark.

Besides Texas, fossilized tracks have been found in England, Canada, Australia, and Brazil. Some tracks have also been found in New England. The tracks discovered in Canada were quite a find! They showed a pattern made by 10 species of dinosaurs. In all, about 1,700 fossilized footprints were discovered. Maybe the scientists uncovered what millions of years ago was a dinosaur playground!

Directions: Answer these questions about dinosaur tracks.

- Circle the main idea:

Fossilized dinosaur tracks provide scientists with information from which to draw conclusions about dinosaur size and behavior.

Fossilized dinosaur tracks are not very useful because so few have been found in the United States.
- Explain how a dinosaur might have crossed a river without its tail leaving a track.

The tail may have floated in the water.
- Name five countries where dinosaur tracks have been found.

United States, England, Canada, Australia, and Brazil
- Circle the valid generalization about dinosaur tracks.
 - The fact that 10 species of tracks were found together proves dinosaurs were friends with others outside their groups.
 - The fact that 10 species of tracks were found together means the dinosaurs probably gathered in that spot for water or food.



Page 173

Review

Directions: Reread the following selections. Then, write the main idea of each. **Answers will vary.**

Small Dinosaurs _____

Dinosaur History _____

Tyrannosaurus Rex _____

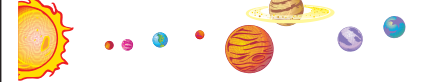
Dinosaur Fossils _____

Dinosaur Tracks _____

Page 174

The Solar System

This section is about our solar system. It includes the sun, comparisons among the planets, each planet's physical characteristics, and each planet's moons. Before beginning this section, try to answer the following questions.



- Name the eight planets of the solar system in order beginning with the planet closest to the sun.

a. **Mercury** b. **Venus** c. **Earth**
 d. **Mars** e. **Jupiter** f. **Saturn**
 g. **Uranus** h. **Neptune**
- Write a distinguishing characteristic for each planet listed below.

Earth: **supports life and civilization**
 Jupiter: **the largest planet**
 Saturn: **has rings**
 Mars: **known as the "red planet"**
- The study of the solar system, stars, and outer space is called **astronomy**.
- The **Sun** is the center of the solar system and is a star.
- Which planet is similar in size to Earth? **Venus**
- Humans have landed on which outer space object? **the moon**
- Have humans landed on any planets? Why or why not?
No. Possible answer: Either they are too far away, or they are inhospitable to humans.

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ANSWER KEY

The Sun

Directions: Read the selection. Then, answer the questions.

The Sun is the center of our solar system. It is a star that seems massive to those on Earth but is dwarfed in comparison to other giant stars farther out in the universe. It rotates on its axis just like Earth. The Sun is made up of heated gases, and it releases heat and light energy. The part of the Sun we see is called the photosphere. The chromosphere is the colored ring of gases surrounding the Sun. Solar flares often shoot out from the Sun's surface for thousands of miles. Without the Sun's warmth, life on Earth would cease to exist.



1. Define the following words:

axis: **an imaginary line around which a body rotates**

universe: **all known celestial materials**

dwarfed: **made to seem smaller**

cease: **to stop**

2. What effect could a solar flare have on Earth?
It could disrupt radio signals.

3. Does the Sun revolve or rotate? **rotate**

4. Why isn't the Sun visible at night? **It faces the other side of Earth.**

5. Why is it important never to look directly at the Sun?
Its rays can burn our eyes.

Page 176

Mercury

Directions: Read the selection. Then, answer the questions.

The planet Mercury is named for the Roman god Mercury who was the messenger of the gods. Ancient Greek astronomers named the heavenly bodies "planets," which means "wanderers." Mercury is the planet closest to the Sun and also the smallest of the inner planets. Because of its proximity to the Sun (nearly 36 million miles), its surface is extraordinarily hot. Mercury's solid surface is covered with craters. It rotates on its axis once every 59 days. One year on Mercury lasts 88 Earth days. Mercury has no moons or rings and has virtually no atmosphere.



1. Define the following words:

astronomer: **Someone who studies the universe outside the Earth's atmosphere**

proximity: **nearness**

atmosphere: **the gaseous envelope surrounding Earth (or any celestial body)**

crater: **an impression formed by the impact of a meteorite**

2. Could life survive on Mercury? Why or why not?

No, the surface is far too hot for life to exist there.

3. Write a three-sentence summary of the selection above.

Possible answer: The planet Mercury, named after the Roman god Mercury, is the smallest inner planet and is closest to the Sun. It has no moons, rings, or atmosphere. It is too hot to support life.

4. Mercury's period of revolution is 88 days. How many months would that be?
almost three months

Page 177

Venus

Directions: Read the selection. Then, answer the questions.

Located over 67 million miles from the Sun, Venus is an incredibly hot planet. Venus is named for the Roman goddess of love and beauty. Temperatures can reach 470 degrees Celsius. Venus is close in size to Earth and is often referred to as Earth's twin. Space probes and unmanned crafts have landed on Venus and found Venus to be dust-covered and very windy. Because Venus is very bright, it is often thought of as a star. Venus has no moons or rings. Its period of rotation is 243 days, and it revolves once around the Sun in 225 days.



1. Create a Venn diagram comparing Mercury and Venus.



2. Write a three-sentence summary about Venus.

Answers will vary.

3. Approximately how far is Venus from Mercury? **31 million miles**

4. If you were to design a spacecraft capable of landing on Venus, what might it require?
Answers will vary.

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Earth

Directions: Read the selection. Then, answer the questions.

Earth is the only planet with known life forms. It revolves around the Sun every 365.25 days. One rotation takes 24 hours to complete. Earth has seasons due to the tilt of its axis and its revolution. Rotation causes night and day. Earth is almost 93 million miles away from the Sun. Its surface is three-fourths water and one-fourth land mass. Earth is surrounded by gases called the atmosphere, which allows life to survive. Earth has one moon that has been explored many times.



1. Define the following word.

mass: **how dense something is; the matter a body possesses**

2. Approximately how far is Earth from Venus?
26 million miles

3. Approximately how far is Earth from Mercury?
57 million miles

4. What factors allow life to exist on Earth?

Its atmosphere and its distance from the Sun (which helps temperatures)

5. What causes the seasons?

The tilt of Earth's axis and its revolution cause the seasons.

6. What differences are there between Earth and the planets Mercury and Venus?

Possible answer: Earth's atmosphere and cooler surface support life. Mercury and Venus are much hotter. Earth has a moon, while Mercury and Venus do not.

Page 179

Mars

Directions: Read the selection. Then, answer the questions.

Mars is named for the god of war. It is the fourth of the inner planets. Mars is called the Red Planet and has polar caps, craters, and evidence of ancient volcanoes. Recently, space probes have landed there and given scientists information about its surface. The red color is produced by the reaction of iron-rich minerals to soil and water, which scientists believe happened long ago. Mars rotates on its axis every 24 hours, 37 minutes and is 142 million miles from the Sun. Its period of revolution is 687 days. Mars has two moons, Phobos and Deimos. Mars's identifying feature is the volcano Olympus Mons. Its temperature varies, but averages -50 degrees Celsius.



1. Define the following words.

polar: **the ends of a planet's axis**

mineral: **an inorganic substance occurring in nature**

2. Name two distinguishing characteristics of Mars.

Possible answers: Mars is red, and it has a volcano named Olympus Mons.

3. Could life survive on Mars? Why or why not?

Possible answer: No, life could not survive on Mars because the average temperature is extremely cold.

4. For years, people have been interested in the possibility of Martian life. What special characteristics would life on Mars have?

Answers will vary.

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Jupiter

Directions: Read the selection. Then, answer the questions.

The planet Jupiter is the largest planet of our solar system and is named for the king of the gods. Its distinguishing feature is the Great Red Spot, which changes occasionally in both color and brightness. Jupiter has a thin ring and at least 67 moons. Jupiter is the first of the outer planets, separated from the inner planets by an asteroid belt. It is almost 500 million miles from the Sun and takes nearly 12 years to complete a revolution around the Sun. It rotates on its axis in approximately 10 hours. Jupiter does not have a solid surface but rather a surface of gaseous clouds.



1. Define the following words.

asteroid: **any small body that revolves around the Sun in orbit**

gaseous: **containing gas**

2. Approximately how far is Jupiter from Earth?

407 million miles

3. Name three characteristics of Jupiter.

Possible answer: Jupiter is the largest planet in our solar system. Its distinguishing feature is the Great Red Spot. It also has a thin ring and at least 67 moons.

4. Write a three-sentence summary about Jupiter.

Answers will vary.

5. What separates the inner and outer planets?

an asteroid belt


6. Why do you think ancient astronomers chose to name Jupiter after the king of the gods?
because it is the largest planet

Page 181

Saturn

Directions: Read the selection. Then, answer the questions.

Saturn's rings were first discovered in 1610. Scientists now know that Saturn has over 1,000 rings of varying color. Not only do the rings rotate at different speeds but also in varying patterns. Saturn has at least 53 moons. It is almost 900 million miles from the Sun and is the second largest planet of our solar system. Saturn rotates on its axis once in just under 11 hours. Saturn is named for the god of agriculture and harvest.



- Define the following words:
 - varying: differing
 - agriculture: the science or practice of farming
- Name two distinguishing characteristics of Saturn.
Possible answers: It has rings, and it is the second largest planet.
- Approximately how far is Saturn from Jupiter?
400 million miles
- Create a Venn diagram showing the similarities and differences between Saturn and Jupiter.
Possible answers:

<ul style="list-style-type: none"> At least 53 moons Rotates on its axis every 11 hours 400 million miles from sun 	<ul style="list-style-type: none"> Has one or more rings Is one of the outer planets 	<ul style="list-style-type: none"> At least 67 moons 500 million miles from Sun Great Red Spot Takes 12 years to revolve around sun Rotates every 10 hours
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Uranus and Neptune

Directions: Read the selection. Then, answer the questions.

Because of their immense distance from Earth, it is difficult to study Uranus and Neptune. Uranus is named for the god of the skies, and Neptune is named for the god of the sea.

Uranus rotates on its side, thus making its rings spin vertically rather than horizontally. It has 27 moons and is almost 2 billion miles from the Sun. It rotates on its axis once every 17.25 hours and revolves around the Sun every 84 years. Uranus was the first planet discovered by telescope.

Neptune is similar in size and color to Uranus. It is almost 3 billion miles from the Sun and takes approximately 164 years to orbit it. Neptune has 14 moons and also has rings. It takes a little over 16 hours to make one rotation on its axis. Neptune is known for its large, windy storms. One massive storm, known as the Great Dark Spot, lasted for five years!

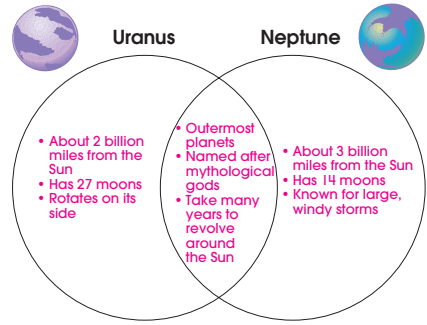


- List the similarities between Uranus and Neptune.
Possible answers:
 - They are the outermost planets.
 - They are named after mythological gods.
 - They take many years to revolve around the Sun.
- What differences are there between Uranus and Neptune?
Possible answers:
 - Neptune is about 1 billion miles farther from the Sun than Uranus.
 - Uranus has 27 moons, and Neptune has 14.
 - Neptune is known for its storms.

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Uranus and Neptune

Directions: Use the lists you created on page 183 to create a Venn diagram showing the similarities and differences between Uranus and Neptune.

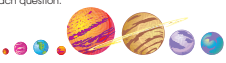


<ul style="list-style-type: none"> About 2 billion miles from the Sun Has 27 moons Rotates on its side 	<ul style="list-style-type: none"> Outermost planets Named after mythological gods Take many years to revolve around the Sun 	<ul style="list-style-type: none"> About 3 billion miles from the Sun Has 14 moons Known for large, windy storms
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Review

Directions: Follow the instructions for each question.



- List the four inner planets.
Mercury Venus Earth Mars
- List the four outer planets.
Jupiter Saturn Uranus Neptune
- What separates the inner and outer planets?
an asteroid belt
- Name a distinguishing feature of each planet.
 - Mercury: the closest planet to the Sun
 - Venus: Earth's "twin" in the solar system
 - Earth: supports life
 - Mars: the red planet
 - Jupiter: the largest planet
 - Saturn: has many rings
 - Uranus: rotates on its side
 - Neptune: farthest from the Sun and the smallest planet
- List the planets in order from most moons to least.

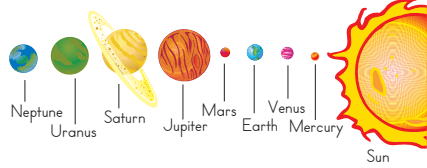
a) <u>Jupiter (at least 67 moons)</u>	e) <u>Mars (2 moons)</u>
b) <u>Saturn (at least 53 moons)</u>	f) <u>Earth (1 moon)</u>
c) <u>Uranus (27 moons)</u>	g) <u>Venus (0 moons)</u>
d) <u>Neptune (14 moons)</u>	h) <u>Mercury (0 moons)</u>

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Review

- Which planets have rings?
Jupiter, Saturn, Uranus, and Neptune
- If you were in charge of the space program, what would your priorities be? Why?
Answers will vary.
- Draw a diagram of the planets and the Sun. Be sure to depict color and the following diameter sizes.

Mercury — 3,031 mi.	Venus — 7,521 mi.	Earth — 7,926 mi.
Mars — 4,217 mi.	Jupiter — 88,730 mi.	Saturn — 74,900 mi.
Uranus — 31,763 mi.	Neptune — 30,775 mi.	



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Recalling Details: Earth's Atmosphere


The most important reason that life can exist on Earth is its atmosphere—the air around us. Without it, plant and animal life could not have developed. There would be no clouds, weather, or even sounds, only a deathlike stillness and an endlessly black sky. Without the protection of the atmosphere, the Sun's rays would roast Earth by day. At night, with no blanketing atmosphere, the stored heat would escape into space, dropping the temperature of the planet hundreds of degrees.

Held captive by Earth's gravity, the atmosphere surrounds the planet to a depth of hundreds of miles. However, air but 1 percent of the atmosphere is in a layer about 20 miles deep just above the surface of Earth. It is made up of a mixture of gases and dusts. About 78 percent of it is a gas called nitrogen, which is very important as food for plants. Most of the remaining gas, 21 percent, is oxygen, which all people and animals depend on for life. The remaining 1 percent is made up of a blend of other gases—including carbon dioxide, argon, ozone, and helium—and tiny dust particles. These particles come from ocean salt crystals, bits of rocks and sand, plant pollen, volcanic ash, and even meteor dust.

You may not think of air as matter, as something that can be weighed. In fact, Earth's air weighs billions and billions of tons. Near the surface of the planet, this "air pressure" is greatest. Right now, about 10 tons of air is pressing in on you. Yet, like the fish living near the floor of the ocean, you don't notice this tremendous weight because your body is built to withstand it.

Directions: Answer these questions about Earth's atmosphere.

- What is the atmosphere? the air around us
- Of what is the atmosphere made? nitrogen, oxygen, other gases, and dust particles
- What is the most abundant gas in the atmosphere? nitrogen
- Which of the atmosphere's gases is most important to humans and animals? oxygen
- What is air pressure? the weight of the air on Earth



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ANSWER KEY

Comprehension: Causes/Effects of Weather

The behavior of the atmosphere, which we experience as weather and climate, affects our lives in many important ways. It is the reason no one lives on the South Pole. It controls when a farmer plants the food we will eat, which crops will be planted, and also whether those crops will grow. The weather tells you what clothes to wear and how you will play after school. Weather is the sum of all the conditions of the air that may affect Earth's surface and its living things. These conditions include the temperature, air pressure, wind, and moisture. **Climate** refers to these conditions but generally applies to larger areas and longer periods of time, such as the annual climate of South America rather than today's weather in Oklahoma City.

Climate is influenced by many factors. It depends first and foremost on latitude. Areas nearest the equator are warm and wet, while the poles are cold and relatively dry. The poles also have extreme seasonal changes, while the areas of the middle latitudes have more moderate climates, neither as cold as the poles nor as hot as the equator. Other circumstances may alter this pattern, however. Land near the oceans, for instance, is generally warmer than inland areas.

Elevation also plays a role in climate. For example, despite the fact that Africa's highest mountain, Kilimanjaro, is just south of the equator, its summit is perpetually covered by snow. In general, high land is cooler and wetter than nearby low land.

Directions: Check the answers to these questions about the causes and effects of weather.

- What is the correct definition for **atmosphere**?
 the clouds the sky where weather occurs
- What is the correct definition for **foremost**?
 most important highest number in the front
- What is the correct definition for **circumstances**?
 temperatures seasons conditions
- What is the correct definition for **elevation**?
 height above Earth nearness to equator snow covering
- What is the correct definition for **perpetually**?
 occasionally rarely always

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Main Idea/Recalling Details: Weather

People have always searched the sky for clues about upcoming weather. Throughout the ages, farmers and sailors have looked to the winds and clouds for signs of approaching storms. But no real understanding of the weather could be achieved without a scientific study of the atmosphere. Such a study depends on being able to measure certain conditions, including pressure, temperature, and moisture levels.

A true scientific examination of weather, therefore, was not possible until the development of accurate measuring instruments, beginning in the 17th century. Meteorology—the science of studying the atmosphere—was born in 1643 with the invention of the barometer, which measures atmospheric pressure. The liquid-glass thermometer, the hygrometer to measure humidity (the amount of moisture in the air), and the weather map also were invented during the 1600s.

With the measurement of these basic elements, scientists began to work out the relationships between these and other atmospheric conditions, such as wind, clouds, and rainfall. Still, their observations failed to show an overall picture of the weather. Such complete weather reporting had to wait two centuries for the rapid transfer of information made possible by the invention of the telegraph during the 1840s.

Today, the forecasts of meteorologists are an international effort. There are thousands of weather stations around the world, both at land and at sea. Upper-level observations are also made by weather balloons and satellites, which continuously send photographs back to Earth. All of this information is relayed to national weather bureaus, where meteorologists plot it on graphs and analyze it. The information is then given to the public through the Internet, newspapers, television, and radio stations.

Directions: Answer these questions about studying the weather.

- The main idea is:
 People have always searched the sky for clues about upcoming weather.
 A real understanding of weather depends on measuring conditions such as pressure, temperature, and moisture levels.
- List three kinds of instruments used to measure atmospheric conditions, and tell what conditions they measure.
 a) barometer atmospheric pressure
 b) hygrometer humidity
 c) liquid-in-glass thermometer temperature
- During what century were many of these measuring instruments invented? 17th
- Name two things used for upper-level observations.
 a) weather balloons b) satellites

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Comprehension: Hurricanes

The characteristics of a hurricane are powerful winds, driving rain, and raging seas. Although a storm must have winds blowing at least 74 miles an hour to be classified as a hurricane, it is not unusual to have winds above 150 miles per hour. The entire storm system can be 500 miles in diameter, with lines of clouds that spiral toward a center called the "eye." Within the eye itself, which is about 15 miles across, the air is actually calm and cloudless. But this eye is enclosed by a towering wall of thick clouds where the storm's heaviest rains and highest winds are found.



All hurricanes begin in the warm seas and moist winds of the tropics. They form in either of two narrow bands to the north and south of the equator. For weeks, the blistering sun beats down on the ocean water. Slowly, the air above the sea becomes heated and begins to swirl. More hot, moist air is pulled skyward. Gradually, this circle grows larger and spins faster. As the hot, moist air at the top is cooled, great rain clouds are formed. The storm's fury builds until it moves over land or a cold area of the ocean where its supply of heat and moisture is finally cut off.

Hurricanes that strike North America usually form over the Atlantic Ocean. West coast storms are less dangerous because they tend to head out over the Pacific Ocean rather than toward land. The greatest damage usually comes from the hurricanes that begin in the western Pacific, because they often batter heavily populated regions.

Directions: Answer these questions about hurricanes.

- What is necessary for a storm to be classified as a hurricane?
winds blowing at least 74 miles an hour
- What is the eye of the hurricane?
the center of the hurricane
- Where do hurricanes come from?
the warm seas and moist winds of the tropics It moves over land or a cold area of the ocean where its supply of heat and moisture is cut off.
- How does a hurricane finally die down?
They often batter heavily populated regions.
- How do hurricanes formed in the western Pacific cause the most damage?
They often batter heavily populated regions.

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Comprehension: Tornadoes

Tornadoes, which are also called whistles, occur more frequently than hurricanes, but they are smaller storms. The zigzag path of a tornado averages about 16 miles in length and only about a quarter of a mile in width. But the tornado is pound for pound, the more severe storm. When one touches the ground, it leaves a trail of total destruction.



The winds in a tornado average about 200 miles per hour. At the center of the funnel-shaped cloud of a tornado is a partial vacuum. In combination with the high winds, this is what makes the storm so destructive. Its force is so great that a tornado can drive a piece of straw into a tree. The extremely low atmospheric pressure that accompanies the storm can cause a building to actually explode.

Unlike hurricanes, tornadoes are formed over land. They are most likely to occur over the central plains of the United States, especially in the spring and early summer months. Conditions for a tornado arise when warm, moist air from the south becomes trapped under colder, heavier air from the north. When the surfaces of the two air masses touch, rain clouds form and a thunderstorm begins. At first, only a rounded bulge hangs from the bottom of the cloud. It gradually gets longer until it forms a column reaching toward the ground. The tornado is white from the moisture when it first forms, but it turns black as it sucks up dirt and trash.

Directions: Circle **True** or **False** for these statements about tornadoes.

- The tornado is a stronger storm than the hurricane. True False
- The path of a tornado usually covers hundreds of miles. True False
- Like the eye of a hurricane, the center of a tornado is calm. True False
- Tornadoes are most likely to occur in the central plains of the United States during the spring and early summer months. True False
- High atmospheric pressure usually accompanies a tornado. True False

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Comprehension: Thunderstorms

With warm weather comes the threat of thunderstorms. The rapid growth of the majestic thunderhead cloud and the damp, cool winds that warn of an approaching storm are familiar in most regions of the world. In fact, it has been estimated that at any given time, 1,800 such storms are in progress around the globe.



As with hurricanes and tornadoes, thunderstorms are formed when a warm, moist air mass meets with a cold air mass. Before long, balls of lightning streak across the sky, and thunder booms. It is not entirely understood how lightning is formed. It is known that a positive electrical charge builds near the top of the cloud, and a negative charge forms at the bottom. When enough force builds up, a powerful current of electricity zigzags down an electrically charged pathway between the two, causing the flash of lightning.

The clap of thunder you hear after a lightning flash is created by rapidly heated air that expands as the lightning passes through it. The distant rumbling is caused by the thunder's sound waves bouncing back and forth within clouds or between mountains. When thunderstorms rumble through an area, many people begin to worry about tornadoes. But they need to be just as fearful of thunderstorms. In fact, lightning kills more people than any other severe weather condition.

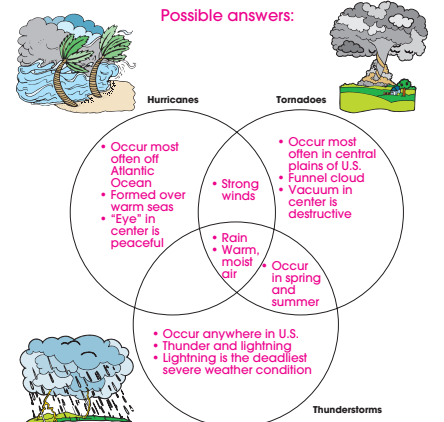
Directions: Answer these questions about thunderstorms.

- How many thunderstorms are estimated to be occurring at any given time around the world?
1,800
- When are thunderstorms formed?
when a warm, moist air mass meets with a cold air mass
- What causes thunder?
rapidly heated air that expands as lightning passes through it
- On average, which causes more deaths, lightning or tornadoes?
lightning

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Venn Diagram: Storms

Directions: Complete the Venn diagram below. Think of at least three things to write in the outer parts of each circle and at least three things to write in the intersecting parts.



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Recalling Details: Lightning Safety Rules

Lightning causes more fire damage to forests and property than anything else. More importantly, it kills more people than any other weather event. It is important to know what to do—and what not to do—during a thunderstorm. Here are some important rules to remember:

- **Don't** go outdoors.
- **Don't** go near open doors or windows, fireplaces, radiator, stoves, metal pipes, sinks, or plug-in electrical appliances.
- **Don't** use the telephone, as lightning could strike the wires outside. (Cell phones are safe to use.)
- **Don't** handle metal objects, such as fishing poles or golf clubs.
- **Don't** go into the water or ride in small boats.
- **Do** stay in an automobile if you are traveling. Cars offer excellent protection.
- **Don't** take laundry off the clothesline.
- **Do** look for shelter if you are outdoors. If there is no shelter, stay away from the highest object in the area. If there are only a few trees nearby, it is best to crouch in the open, away from the trees at a distance greater than the height of the nearest tree. If you are in an area with many trees, avoid the tallest tree. Look for shorter ones.
- **Don't** take shelter near wire fences or clotheslines, exposed sheds, or on a hilltop.
- If your hair stands on end or your skin tingles, lightning may be about to strike you. Immediately crouch down, put your feet together, and place your hands over your ears.



Directions: Answer these questions about lightning safety rules.

Possible answers:

1. Name two things you should avoid if you are looking for shelter outside.

a) wire fences

b) exposed sheds

2. What should you do if, during a thunderstorm, your hair stands up or your skin tingles?

Crouch down, put your feet together, and place your hands over your ears.

Main Idea/Comprehension: Rainbows

Although there are some violent, frightening aspects of the weather, there is, considerable beauty, too. The rainbow is one simple, lovely example of nature's atmospheric mysteries.

You usually can see a rainbow when the sun comes out after a rain shower or in the fine spray of a waterfall or fountain. Although sunlight appears to be white, it is actually made up of a mixture of colors—all the colors in the rainbow. We see a rainbow because thousands of tiny raindrops act as mirrors and prisms on the sunlight. Prisms are objects that bend light, splitting it into bands of color.

The bands of color form a perfect semicircle. From the top edge to the bottom, the colors are always in the same order—red, orange, yellow, green, blue, indigo, and violet. The brightness and width of each band may vary from one minute to the next. You also may notice that the sky framed by the rainbow is lighter than the sky above. This is because the light that forms the blue and violet bands is more bent and spread out than the light that forms the top red band.

You will always see morning rainbows in the west, with the sun behind you. Afternoon rainbows, likewise, are always in the east. To see a rainbow, the sun can be no higher than 42 degrees—nearly halfway up the sky. Sometimes, if the sunlight is strong and the water droplets are very small, you can see a double rainbow. This happens because the light is reflected twice in the water droplets. The color bands are fainter and in reverse order in the second band.

Directions: Answer these questions about rainbows.

1. Check the statement that is the main idea.

Although there are violent, frightening aspects of weather, there is considerable beauty, too.

The rainbow is one simple, lovely example of nature's atmospheric mysteries.

2. What is the correct definition for **semicircle**?

colored circle diameter of a circle half circle

3. What is a prism? An object that bends light and splits it into bands of color

4. In which direction would you look to see an afternoon rainbow? east



Comprehension: Cause and Effect

Directions: Complete the chart by listing the cause and effect of each weather phenomenon.



	Cause	Effect
Thunderstorms	warm, moist air mass collides with cold air mass	lightning, thunder, rain
Hurricanes	air above the sea heats and swirls; hot, moist air is pulled up and spins faster	rain clouds form; spiraling wind
Tornadoes	warm, moist air gets trapped under cold, heavy air	rain clouds form; thunderstorms occur; tornado develops
Rainbows	sun comes out after rain	raindrops reflect sun's light like mirrors and act like prisms, bending light into bands of color
Precipitation	warm, moist air; low pressure system	rain
Drought	lack of rain and dew	dry earth, loss of livestock, dust bowl conditions

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Review

Directions: If necessary, review the section on weather to find the answers to the following questions.

1. Describe Earth's atmosphere. a mixture of gases and dusts that surrounds Earth at a depth of 100 miles

2. The science of studying weather is called meteorology.

3. Why is it important for weather forecasting to be an international effort?

Possible answer: As more people travel, knowledge of weather in other countries becomes important. It is also important to track weather systems.

4. Define **weather**. the sum of all the conditions of the air that may affect Earth's surface and its living things

5. Name three factors that influence climate.
latitude elevation proximity to ocean

6. Describe the following weather phenomena.

a. hurricane powerful winds, driving rain, and raging seas

b. tornado warm, moist winds trapped under cold, heavy air, which results in a funnel cloud

c. thunderstorm warm, moist air meets a cold air mass, which results in rain, thunder, and lightning

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Using Prior Knowledge: Sports

Directions: Before reading about sports in the following section, write one or two sentences telling what you know about each sport below.

Wrestling Answers will vary.

Bowling _____

Volleyball _____

Tennis _____

Boxing _____

Football _____

Softball _____

Field Hockey _____

Page 198

Comprehension: Wrestling Around the World

In many countries, wrestling is an honored sport. In Iceland, wrestling is called **glima**; in Switzerland, it is called **schweitzer schwingen**; and in Ireland, it is called **cumberland**. In Japan, a form of wrestling called **sumo** began in 23 a.c.

Sumo wrestling is still popular in Japan today. Wrestlers wear the traditional sumo costume of a loincloth—a piece of cloth draped across the hips and bottom—and nothing else. Sumo wrestlers are big men—their average weight is about 300 pounds. Wrestlers compete in small rings with sand floors. The object of the match is to push the opponent out of the ring.

Even in the wrestling ring, however, the Japanese are astonishingly polite. If one wrestler begins to push the other out of the ring, the other may shout, "Matta!" **Matta** is Japanese for "not yet." At this point, the action stops and the wrestlers step out of the ring to take a break. Some wrestling matches in Japan must take a long, long time to complete!



Directions: Answer these questions about wrestling around the world.

1. What is wrestling called in Switzerland? schweitzer schwingen

2. In what country is wrestling called **cumberland**? Ireland

3. What is wrestling called in Iceland? glima

4. In what country is wrestling called **sumo**? Japan

5. How much does an average sumo wrestler weigh? about 300 pounds

6. What does **matta** mean in Japanese? "not yet"

7. What happens if a wrestler shouts, "Matta"?

The action stops, and the wrestlers step out of the ring to take a break.

8. In what year did sumo wrestling begin? 23 B.C.

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ANSWER KEY

Comprehension: Tennis, Anyone?

Historians say a form of tennis was played outdoors in England in the 16th century. In France, the game had a much, much earlier start. "Court tennis"—named such because royal courts of kings played it—was played indoors about 1000 A.D. Six hundred years later, indoor tennis was still in full swing. Records show there were 2,500 indoor courts in France at that time.

French tennis players and spectators took the game seriously. In 1780, the surgeon general of the French army recommended the game as one good for the lungs and throat. Why? Because of all the loud screaming and shouting that accompanied French games! The word **tennis** comes from the French term **tenir**, which means "take heed" or "watch out." That's what the French yelled out centuries ago when they used huge racquets to whack balls over a sagging net. Later, when the game was adopted in England, **tenir** became **tennis**.

Tennis is said to have come to America by way of the island of Bermuda. A young American girl, Mary Outerbridge, played the game when visiting Bermuda in 1873. She brought tennis racquets, balls, and a net home to New York with her. The strange equipment puzzled customs officials (government employees who check travelers' bags to make sure they are not smuggling drugs or other substances). They reluctantly permitted Miss Outerbridge to bring the weird game to America, where it has flourished ever since!

Directions: Answer these questions about tennis.

- In what year were there 2,500 indoor tennis courts in France? 1600
- In 1780, who recommended tennis as good for the lungs and throat?
the surgeon general of the French army
- What does the French word **tenir** mean?
"take heed" or "watch out"
- In what state was tennis first played in America? New York
- The person who brought tennis to America was
 Marlene Outerbridge. Mary Outerbridge. Mary Outerbridge.



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Comprehension: Boxing History

The first known boxers were the ancient Greeks, who "toughened up" young men by making them box with bare fists. Later, a length of leather was wrapped around their hands and forearms to protect them. Although the sport was brutal, in ancient Greece, boxers who killed their opponents received a stiff punishment.

During the Middle Ages—from 500 to 1500 A.D.—boxing fell out of favor. It became popular in England about 100 years later, when the new middle class had the time and money for sports. Boxers would travel to matches held at inns and bars, and their loyal fans would follow. No gloves were used in the early 1600s in England. Instead, like the ancient Greeks, boxers used bare fists and—something new—wrestling holds. Carrier pigeons with messages tied to their bodies were trained to take news of the fights back to the boxers' hometowns.

Because so many people were badly hurt or killed, padded boxing gloves began to be used in the United States around 1880. Boxing became fashionable—and safer. Harvard University offered boxing as an intramural sport in the 1880s. U.S. President Theodore Roosevelt's love of the sport helped to further popularize it. It's said that Roosevelt boxed regularly with a former heavyweight champion named Mike Donovan.

During World War I, boxing was part of the required training for army recruits. The Golden Gloves championship matches for boys, which began in the 1930s, also helped spread the sport's popularity.

Directions: Answer these questions about boxing history.

- What people were known as the first boxers? the ancient Greeks
- During what period did boxing fall out of favor? during the Middle Ages
- What university offered boxing as a sport in the 1880s? Harvard University
- Which U.S. president enjoyed boxing? Theodore Roosevelt
- In England in the 1600s, news about boxing was sent via
 telegrams. carrier pigeons. messengers.
- The Golden Gloves championships were first offered
 in the 1930s. during World War I. during World War II.



Comprehension: Sports Summaries

Directions: Write a short paragraph summarizing each selection below.

Wrestling Around the World Answers will vary.



Tennis, Anyone?



Boxing History



Of the sports listed above, which is your favorite? Why?

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Main Idea: Bowling Is a Ball

Like tennis and boxing, bowling is also a very old sport. It began in Germany about nine centuries ago. Bowling was first played outdoors with wooden pins and a bowling ball made from a rounded rock.

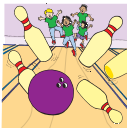
The first players were church members who bowled with Catholic bishops and priests. Those who bowled a good game were said to be blessed. Those who bowled poorly were believed to be sinners who should improve themselves to improve their games! The name of the game in 11th-century Germany was **Kegelspiel**.

By the late 19th century, bowling was the most popular sport in Germany. A common expression for a person who had died was that he was "bowled out."

The game was introduced to America by way of Holland, where the Dutch had learned bowling from the Germans. Some Dutch citizens brought the game to Manhattan Island in 1623. The first bowling alley—outdoors, of course—opened in New York City more than 100 years later in 1732. Today, bowling is one of the most popular American sports. People who have never put on bowling gloves or raised a tennis racquet have, at one time or another, lifted and rolled a bowling ball.

Directions: Answer these questions about bowling.

- Circle the main idea:
Bowling is a very old and popular sport.
- Bad bowlers are sinners who should clean up their acts.
- Who brought bowling to the United States? the Dutch
- What was bowling called in Germany? Kegelspiel
- What were the first bowling balls made from? a rounded rock
- The first American bowling alley opened in 1732 in what city? New York City
- In 19th-century Germany, what was the meaning of the expression "bowled out"?
a person who had died



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Comprehension: Facts About Football

Like tennis courts, football fields are usually laid out in a north-south fashion so the sun doesn't shine directly into one team's eyes. The field is 120 yards long and 53½ yards wide, with a goalpost at each end that is at least 20 feet high.

Regulation-size footballs are 11 inches long and must weigh at least 14 ounces. The object of the game is for one team of 11 to score more points than the opposing team. There are four ways to score points in football.

A touchdown, worth six points, is scored by carrying the ball across the opponent's goal line or by completing a forward pass in the opponent's end zone. When a team makes a touchdown, it gets the chance to make one or two extra points via a play executed from the 2- or 3-yard line. A field goal, worth three points, is made by kicking the ball from the field over the crossbar of the opponent's goal. A way to earn two points is through a play called a safety.

Football games are 60 minutes long and are divided into four quarters of 15 minutes each. Because of all the commercials and instant replays, televised games seem much longer. For college games, the halftime shows also take a lot of time. Traditionally, college football games are played on Saturday afternoons, and high school games are played on Friday nights. Professional games are played on Sundays, as well as a few nights throughout the week.

Directions: Answer these questions about football.

- How long is a regulation football? 11 inches long
- How long is a football field? 120 yards long
- How many players are on a football team? 11 players
- A field goal is worth
 one point. two points. three points.
- A touchdown is worth
 two points. three points. six points.
- Football games are 60 minutes long with four 15-minute quarters.



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Giving Directions: A Perfect Softball Pitch

A good softball pitcher makes the ball look effortless and graceful. In fact, there are very specific things a softball pitcher must do before, during, and after he or she throws the ball. Before throwing, the pitcher must have both feet firmly on the ground and be in contact with the pitcher's plate for at least one second. At the beginning of the pitch, the ball must be held in both hands in front of the body. It must be held this way for no longer than 20 seconds. While making the pitch, the pitcher must keep one foot on the ground. Until the ball leaves his or her hands, the pitcher cannot take more than one step toward the batter. A correct softball pitch looks remarkably like the pitch used to throw horseshoes. As with horseshoes, there is a graceful follow-through with the hand and arm once the ball leaves the pitcher's hand.

There are several types of softball pitches. They include the drop, the slow ball, and the out-curve. The drop is the fastest pitch. The pitcher's hand is behind the ball in this pitch. For the slow ball, the pitcher grips the ball between his or her thumb and little finger. He or she puts the knuckles of the three middle fingers against the ball. When the out-curve ball is thrown, the pitcher thrusts the thumb back and rotates all of his or her fingers out.



Directions: Follow these instructions about softball.

- Give directions on what to do before pitching a softball.
Place both feet firmly on the ground. Be in contact with the pitcher's plate for at least 1 second. Hold the ball in both hands for no more than 20 seconds.
- Give directions on how to throw a slow ball: Grip the ball between the thumb and little fingers with the knuckles of the three middle fingers against the ball.
- Give directions on how to throw an out-curve ball: Thrust the thumb back, and rotate all fingers out.

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Comprehension: Volleyball

Volleyball began in Italy during the Middle Ages and was introduced to Germany in 1893. Germans called the sport **fautball**. Two years later, an American physical education teacher named William Morgan made some changes in **fautball** and brought the new game to Americans as **mintonette**.

In **fautball**, the ball was permitted to bounce twice before being hit back over the net. In **mintonette**, as in modern volleyball, no bounces were allowed. Shortly after Morgan introduced the sport, the director of a YMCA convinced him to change the name to something easier to pronounce. To "volley" a ball means to keep it in the air, and that's what volleyball players try to do.

A volleyball court is 60 feet long by 30 feet wide. It's divided in half by an 8-foot-high net. There are six players on each team, standing three by three across on each side of the net; however, the same person may not hit the ball two times in a row. If the serve is not returned, the team that served gets the point.

The most popular serve is the underhand. The server stands with the left foot forward, right knee bent, weight on the right foot. He or she leans slightly forward. The ball is in the partly extended left hand. The server strikes the ball off the left hand with the right hand. (Left-handers use the opposite hands and feet.) The first team to get 15 points wins the game.

Directions: Answer these questions about volleyball.

- Circle the main idea.
Volleyball is a sport that requires a lot of strength.
Volleyball is a simple game with six players on opposing sides.
- A valid generalization about volleyball is:
a. It's safe, requires little equipment, and can be played by all ages.
b. It's dangerous, difficult to learn, and appeals only to children.
c. It's dull, slow, and takes players a long time to earn 15 points.
- Give directions on how to deliver an underhand serve.



Stand with the left foot forward, right knee bent, and weight on the right foot. Lean forward slightly, and strike the ball off the left hand with the right hand.

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Comprehension: Comparing Sports

Directions: Read each paragraph. Then, answer the questions comparing field hockey, basketball, and softball.

- My sister is more interested in sports than I am. Last year, she lettered in field hockey, basketball, and softball. I got my exercise walking to school.
- What sports did the writer play? **none**
 - My sister's favorite sport is field hockey. Because it requires constant running up and down a field, it provides more exercise than basketball and softball. There's also more danger, because every year someone gets her teeth knocked out with a hockey stick. So far at our school, no one has lost any teeth in basketball or softball.
 - Compared to basketball and softball, field hockey provides one benefit and one danger. Name them.
It provides more exercise. Every year someone gets her teeth knocked out.
 - On the other hand, softball players—especially those who play the outfield—can occasionally take some time for daydream. With an ace strikeout pitcher and batters who can't hit far, outfielders' gloves don't get much of a workout.
 - What sports do not allow time for daydreaming?
field hockey and basketball

Write a short paragraph telling which sport you like best and why.

Answers will vary.



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Famous Athletes

Athletes are often heroes to young and old alike. Their stories are sometimes about triumph over amazing odds to become one of the best in their sport. Before beginning the section, answer the following questions as a warm-up.



- What sport most interests you? Why?
Answers will vary.
- What sports figure do you most admire? Why?
- In your opinion, what makes a person a hero?
- Try to name a sports legend for each of the sports listed below.

Track and field _____
Swimming _____
Boxing _____
Baseball _____
Speed skating _____
Tennis _____

Page 208

Hitting the Slopes

Directions: Read the selection. Then, answer the questions.

Lindsay Vonn was born to be a skier. She began learning the sport when she was only two years old. Vonn was so talented that her father moved the entire family from Minnesota to Colorado when she was 10. He knew that Colorado was the place to be if Lindsey had a chance of exploring her potential as a skier. Vonn started racing at the age of 7 and won her first competition when she was only 14 years old.

Vonn made her Olympic debut in 2002. Just before the next Olympics in 2006, she was injured. Despite the pain, Vonn was able to ski, and even to place. For the next few years, she worked hard and was prepared for the 2010 Olympics in Vancouver, Canada. Vonn was thrilled to realize a dream: to win a gold medal in the downhill event! In addition, she won a bronze in the Super-G (short for the "super-giant slalom," a downhill event). Lindsey Vonn was becoming known as one of the world's most talented female skiers.

In 2013, Vonn was injured again. This time, her injury resulted in reconstructive knee surgery. Although she skied competitively after her surgery, Vonn's knee continued to give her trouble. It was a hard decision to make, but she knew she'd be unable to compete in the 2014 Winter Olympics. Despite her injuries, Lindsey Vonn has had an impressive career. In addition to her Olympic medals, she has won almost 60 World Cup victories and inspired female athletes worldwide.

- Summarize the selection in three sentences.
Answers will vary.

- Define the following words:
potential: **a quality that can be developed into something better**
debut: **a first appearance**
reconstructive: **rebuilding or reassembling**

- What are four words you could use to describe Lindsay Vonn? **Possible answers: hardworking, dedicated, talented, competitive**

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Speed Skating

Directions: Read the selection. Then, answer the questions.

Imagine racing around a rink of glossy ice with only a thin blade of metal supporting you. Now, imagine skating so fast that you set a world record! That's exactly what speed skater Bonnie Blair has done all of her life.

Bonnie started skating before she was walking—on the shoulders of her older brothers and sisters. By the time she was 4, Bonnie was compelling. At age 7, Bonnie won the 1971 Illinois state championships and dreamed of becoming an Olympian.

That opportunity soon came. Bonnie competed in the 1988, 1992, and 1994 Olympics. She won a gold medal in the 500-meter race and a bronze medal in the 1,000-meter race in 1988, golds in both the 500- and 1,000-meter races in 1992 and repeated the two golds in 1994. Only two other U.S. women have ever won five gold medals in the Olympics in any sport. Bonnie Blair is truly a champion!

- Define the following words:
opportunity: **a favorable combination of circumstances, time and place**
meter: **the basic metric unit of length (equals 39.37 inches)**
- Bonnie Blair competed over a period of six years in the Olympics. What qualities would be necessary to maintain the physical and mental condition to compete for so long?
Answers will vary.
- Bonnie Blair participated in long-track skating, in which she raced with one other person against a clock for the best time. Do you think this would be easier or more difficult than racing a group to finish first? Why?
Answers will vary.
- In your opinion, what makes a good athlete?
Answers will vary.



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Baseball

Directions: Read the selection. Then, answer the questions.

Babe Ruth was born George Herman Ruth in 1895. His family lived in Baltimore, Maryland, and was quite poor. He overcame poverty to become one of the greatest baseball players of all time.

Babe Ruth's baseball career began with the Baltimore Orioles. He was a pitcher but also a tremendous batter. He later played for the Boston Red Sox and started his home-run hitting fame with 29 home runs in 1919.

In 1920, while playing for the New York Yankees, Babe Ruth hit 54 home runs. He had become very popular with baseball fans of all ages. Amazingly, by 1925, he was making more money than the president of the United States! His home-run record of 60 home runs in a single season went unshattered until Roger Maris broke it in 1961 with 61 home runs.

Babe Ruth retired from baseball in 1935 with a career total of 714 home runs. He died in 1948 at age 53.



- Summarize the selection in three sentences.
Answers will vary.
- In the early 1900s, life expectancy was shorter than it is today. By today's standards, Babe Ruth died at a relatively young age. What factors have contributed to increased life expectancy?
Possible answers: better medical care, people are more educated about self-care, the invention of new medicines, better medical facilities
- Create a time line of Babe Ruth's life beginning with his birth and ending with his death.

1895	1919	1920	1935	1948
Babe Ruth born	Babe Ruth hit 29 home runs with Boston Red Sox.	Babe Ruth hit 54 home runs with N.Y. Yankees	Babe Ruth retired with 714 home runs	Babe Ruth died

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ANSWER KEY

Swimming

Directions: Read the selection. Then, answer the questions.

In 1968, 18-year-old Mark Spitz boasted that he would win six gold medals at the Olympics being held in Mexico. He won two golds in team relay events. After failing to achieve his goal, Spitz was determined to do better in the 1972 Olympics in Munich.

For the next four years, Mark Spitz trained ferociously. Indeed, at the 1972 Olympics, Spitz amazed the world by breaking all records and winning seven gold medals in seven different events. While doing so, he set new world record times in each event. Mark Spitz had accomplished his goal.



1. What feelings do you think Mark Spitz had after the 1968 Olympics?

Answers will vary.

2. What do you think is the moral to this story?

3. Many Olympians are as young as Mark Spitz was, and some participate at even younger ages. Write one paragraph detailing the advantages of being a young Olympian and one paragraph detailing the disadvantages.

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Boxing

Directions: Read the selection. Then, answer the questions.

Muhammad Ali was born Cassius Clay in Louisville, Kentucky, in 1942. He won the amateur Golden Gloves championship in 1959 and 1960 and went on to become the heavyweight champion of the 1960 Olympics. Four years later, he was champion of the world.

However, Ali's athletic fame came with its share of difficulties. He converted to the religion of Islam and thus changed his name from Cassius Clay to Muhammad Ali. Due to his Islamic beliefs, he refused to comply with the military draft for the Vietnam War. Therefore, he was stripped of his world title and banned from boxing from 1967 to 1970.

Ali regained his title in 1974 and won the world championship again in 1978. This accomplishment made Muhammad Ali the first heavyweight boxer to claim the world championship three times. Most notable about Ali's career is his total 56 wins in the ring with 37 knockouts.



1. Define the following words:

draft: **to select, usually forcing someone to do something**

banned: **forbidden**

amateur: **a non-professional who engages in his/her pursuit for pleasure**

notable: **worthy of notice**

comply: **to go along with**

2. Why is it necessary for a country to use the military draft?

Answers will vary.

3. Write a three-sentence summary of the selection.

Answers will vary.

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Tennis

Directions: Read the selection. Then, answer the questions.

Marina Navratilova gained fame as the best women's tennis player of the 1980s. She was born in Czechoslovakia in 1956 and moved to the United States at the age of 19. She became a United States citizen in 1981.

Marina Navratilova excelled in the sport of tennis, but she enjoyed the Wimbledon championship the most. She won the singles finals in 1978, 1979, 1982, 1983, 1984, 1985, 1986, 1987, and 1990. In 1982, she became the first woman professional tennis player to earn over one million dollars in a single season.



1. What physical characteristics are necessary to excel in the sport of tennis?

Answers will vary.

2. In your opinion, why would an athlete from another country want to come to the U.S.A. to train and compete?

3. Many athletes find it difficult to adjust to their status as "heroes." What are some possible disadvantages to being an athletic superstar?

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Review

Directions: Follow the instructions for each section.

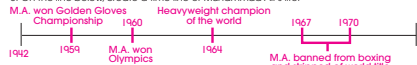
1. On the line below, create a time line of the years of birth for the six athletes discussed in this section.



2. What mental and emotional characteristics did all six athletes have in common?

Answers will vary.

3. On the line below, create a time line of Muhammad Ali's life.



4. Compare and contrast the sports of tennis and baseball in a two-paragraph essay.

Answers will vary.

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Writing: My Sports Hero

Directions: Write a short essay about a man or woman you admire who has excelled in a sport. Make sure to give details about why you admire this person.

Answers will vary.

Directions: Interview an adult. Ask him or her about a sports figure he or she admired at your age. Write a short paragraph about this person's sports hero.

Using Prior Knowledge: Poetry

Directions: Before reading about poetry in the following section, answer these questions.

1. Have you ever written a poem? If so, was it difficult to do? Why or why not?

Answers will vary.

2. Write a poem with rhyming verse.

3. Write a poem with unrhymed verse.

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Page 217

Comprehension: Epitaphs

Epitaphs are verses written on tombstones and were very popular in the past. The following epitaphs were written by unknown authors.

On a Man Named Merideth

Here lies one blown out of breath
Who lived a merry life and died a Merideth.

On a Dentist

Stranger, approach this spot with gravity:
John Brown is filling his last cavity.

On Leslie Moore

Here lies what's left
Of Leslie Moore

No Les
No more



Directions: Answer these questions about the epitaphs.

1. What does the phrase "blown out of breath" mean? dead—no longer breathing

2. What does the author mean when he says "and died a Merideth"?

This is a play on words—the person's name and merry death.

3. What cavity is John Brown filling? the grave

4. Write an epitaph of your own.

Answers will vary.

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Comprehension: "The Ant and the Cricket"

A silly young cricket, who decided to sing
Through the warm sunny months of summer and spring,
Began to complain when he found that at home
His cupboards were empty and winter had come.

At last by starvation the cricket made bold
To hop through the wintertime snow and the cold.
Away he set off to a miserly ant
To see if to keep him alive he would grant
Shelter from rain, a mouthful of grain.
"I wish only to borrow—I'll repay it tomorrow—
If not, I must die of starvation and sorrow!"

Said the ant to the cricket, "It's true I'm your friend,
But we ants never borrow, we ants never lend;
We ants store up crumbs so when winter arrives
We have just enough food to keep ants alive."



Directions: Use context clues to answer these questions about the poem.

1. What is the correct definition of **cupboards**?

- where books are stored where food is stored where shoes are stored

2. What is the correct definition of **miserly**?

- selfish/stingy generous/kind mean/ugly

3. What is the correct definition of **grant**?

- to take away to belch to give

4. In two sentences, describe what the poet is trying to say with this poem.

Answers will vary.

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Comprehension: "The Elf and the Dormouse"

Under a toadstool
Crept a wee elf
Out of the rain
To shelter himself.

Under the toadstool
Sound asleep
Sat a big dormouse
All in a heap.

Trembled the wee elf
Frightened, and yet
Feeling to fly away
Lest he got wet.

To the next shelter
Maybe a mile!
Sudden the wee elf
Smiled a wee smile.

Tugged 'til the toadstool
Topped in two,
Holding it over him
Gaily he flew.

Soon he was safe home,
Dry as could be;
Soon woke the dormouse
"Good gracious me!"

"Where is my toadstool?"
Loud he lamented,
And that's when umbrellas
First were invented.

—Oliver Herford



Directions: Use context clues or a dictionary to answer these questions about the poem.

1. This humorous poem tells about what invention? umbrellas

2. What do you think a **dormouse** is? a small mouse

3. What is the correct definition of **lamented**? said sadly

4. Write a two-verse poem below describing the invention of a useful object.

Answers will vary.

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Comprehension: "The Eagle"

Personification is a figure of speech in which human characteristics are given to an animal or object.

Example: The trees danced in the wind.
Trees do not dance; therefore, the trees are being personified.

He clasps the crag with crooked hands;
Close to the sun in lonely lands,
Ringed with the azure world, he stands.

The wrinkled sea beneath him crawls;
He watches from his mountain walls,
And like a thunderbolt he falls.

—Alfred, Lord Tennyson



Directions: Answer these questions about the poem.

1. What is the correct definition of **crag**? a steep, rugged, rocky cliff

2. What is the correct definition of **azure**? blue

3. Which phrases in the poem show personification?

crooked hands, wrinkled sea . . . crawls, he stands

4. Explain what one of these phrases actually means.

Answers will vary.

5. What is the author trying to say in the last line of the poem?

The eagle is powerful and swoops down from the sky very quickly.

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Comprehension: Proverbs

Proverbs are bits of advice for daily life. The following proverbs were written by Benjamin Franklin in 1732. They were published in Poor Richard's Almanack.

1. Keep conscience clear,
Then never fear.

2. Little strokes
Fell great oaks.

3. From a slip of foot you may soon recover,
But a slip of the tongue you may never get over.

4. Doing an injury puts you below your enemy;
Revenge one makes you but even with him;
Forgiving it sets you above him.

Directions: Explain the meaning of each proverb.

1. Possible answers:

You don't have to worry if you do nothing wrong.

Persistence can accomplish great deeds. Break

large jobs into smaller ones.

If you say the wrong thing at the wrong time, it may

change your life.

If you hurt someone, you are less of a person. If you

seek revenge, you are as bad as your enemy. If

you forgive, you are a better person.

Write a proverb of your own.

Answers will vary.



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Comprehension: Limericks

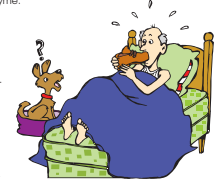
A **limerick** is a humorous verse consisting of five lines. The first, second, and fifth lines rhyme, and the third and fourth lines rhyme.

Old Man from Peru

There was an old man from Peru,
Who dreamed he was eating his shoe.
In the midst of the night
He awoke in a fright!
And—good grief—it was perfectly true.

Old Man from Darjeeling

There was an old man from Darjeeling,
Who boarded a bus bound for Ealing.
He saw on the door
"Please don't spit on the floor!"
So he stood up and spat on the ceiling.



Directions: Answer these questions about these silly limericks.

1. In "Old Man from Peru," what was perfectly true?

He was eating his shoe.

2. How did the old man from Peru feel when he awoke? He was frightened.

3. In "Old Man from Darjeeling," what is Ealing? a city/town

4. Did the old man from Darjeeling break any rules? no

Write your own silly limerick below.

Answers will vary.

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ANSWER KEY

Comprehension: "The Tyger"

Imagery is a picture that comes into the reader's mind when reading certain words.

Tyger! Tyger! burning bright
In the forests of the night,
What immortal hand or eye
Could frame thy fearful symmetry?

In what distant deeps or skies
Burnt the fire of thine eyes?
On what wings dare he aspire?
What the hand dare seize the fire?

And what shoulder and what art,
Could twist the shew of thy heart,
And when thy heart began to beat,
What dread hand? and what dread feet?

What the hammer? what the chain?
In what furnace was thy brain?
What the anvil? what dread grasp
Dare its deadly terrors clasp?

When the stars threw down their spears,
And watered heaven with their tears,
Did he smile his work to see?
Did he who made the lamb make thee?

Tyger! Tyger! burning bright
In the forests of the night,
What immortal hand or eye,
Dare frame thy fearful symmetry?

—William Blake

Directions: Use context clues or a dictionary to answer these questions about the poem.

1. What is the correct definition of **symmetry**?
in balance—one side the same as the other
2. What is the correct definition of **immortal**?
eternal, undying
3. What is the correct definition of **aspire**?
to be eager to achieve
4. What is the correct definition of **sinew**?
physical strength or tendon
5. What is the correct definition of **anvil**?
an iron blacksmiths use to hammer metal upon
6. What is some imagery in this poem?
Answers will vary.



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Comprehension: Old Gaelic Lullaby

A **Gaelic lullaby** is an ancient Irish or Scottish song some parents sing as they rock their babies to sleep.

Hush! The waves are rolling in,
White with foam, white with foam,
Father works amid the din,
But baby sleeps at home.

Hush! The winds roar hoarse and deep—
On they come, on they come!
Brother seeks the wandering sheep,
But baby sleeps at home.

Hush! The rain sweeps over the fields,
Where cattle roam, where cattle roam,
Sister goes to seek the cows,
But baby sleeps at home.



Directions: Answer these questions about the Gaelic lullaby.

1. What is Father doing while baby sleeps? Father is working.
2. What is Brother doing? Brother is looking for the wandering sheep.
3. What is Sister doing? Sister goes to look for the cows.
4. What do we assume Mother is doing? Answers will vary.
5. Is it quiet or noisy while Father works? quiet noisy
6. Which is not mentioned in the poem?
 wind sunrise waves rain

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Comprehension: "The Lark and the Wren"

"Goodnight, Sir Wren!" said the little lark,
"The daylight fades; it will soon be dark.
I've sung my hymn to the parting day,
So now I fly to my quiet glen.
In yonder meadow—Goodnight, Wren!"

"Goodnight, poor Lark!" said the haughty wren,
With a flick of his wing toward his happy friend.
"I also go to my rest profound
But not to sleep on the cold, damp ground.
The fittest place for a bird like me
Is the topmost bough of a tall pine tree."



Directions: Use context clues for these definitions.

1. What is the correct definition of **hymn**?
 whisper song opposite of her
2. What is the correct definition of **yonder**?
 distant mountaintop seaside
3. What is the correct definition of **haughty**?
 happy friendly pompous
4. What is the correct definition of **profound**?
 restless deep uncomfortable
5. What is the correct definition of **bough**?
 to bend over tree roots tree branch
6. Write another verse of the poem.
Answers will vary.

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Nouns

A **noun** names a person, place, thing, or idea.
There are several types of nouns.

Examples:

proper nouns: Joe, Jefferson Memorial
common nouns: dog, town
abstract nouns: book, stove
collective nouns: team, devotion
collective nouns: audience, flock

A word can be more than one type of noun.

Example: Dog is both a common and a concrete noun.

Directions: Write the type or types of each noun on the lines.

1. desk common, concrete
2. ocean common, concrete
3. love common, abstract
4. cat common, concrete
5. herd common, concrete, collective
6. compassion common, abstract
7. reputation common, abstract
8. eyes common, concrete
9. staff common, concrete, collective
10. day common, concrete
11. Roosevelt Building proper, concrete
12. Mr. Timken proper, concrete
13. life common, abstract
14. porch common, concrete
15. United States proper, concrete or abstract



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Possessive Nouns

A **possessive noun** owns something. To make a singular noun possessive, add an apostrophe and **s**. **Example:** mayor's campaign

To make a plural noun possessive when it already ends with **s**, add only an apostrophe. **Example:** dogs' tails

To make a plural noun possessive when it doesn't end with **s**, add an apostrophe and **s**. **Example:** men's shirts

Directions: Write the correct form of the word for each sentence in the group. Words may be singular, plural, singular possessive, or plural possessive. The first one has been done for you.

- teacher**
1. How many teacher's does your school have?
 2. Where is the teacher's coat?
 3. All the teachers' mailboxes are in the school office.
- reporter**
4. Two reporters were assigned to the story.
 5. One reporter's car broke down on the way to the scene.
 6. The other reporter was riding as a passenger.
 7. Both reporters' notes ended up missing.
- child**
8. The children are hungry.
 9. How much spaghetti can one child eat?
 10. Put this much on each child's plate.
 11. The children's spaghetti is ready for them.
- mouse**
12. Some mice made a nest under those boards.
 13. I can see the mouse's or mice's hole from here.
 14. A baby mouse has wandered away from the nest.
 15. The mouse's mother is coming to get it.



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Verbs

A **verb** is a word that tells what something does or that something exists.

There are two types of verbs: **action** and **state of being**.

Examples:

Action: run, read, choose, wash, push, cut, drive, laugh, scream, reach
State of being: feel, sound, taste, stay, look, appear, grow, seem, smell, and forms of **be**

Directions: Write **A** if the verb shows action. Write **S** if it shows state of being.

1. A He helped his friend.
2. S They appear happy and content.
3. A Jordi drives to school each day.
4. A The snowfall closed schools everywhere.
5. A The dog sniffed at its food.
6. S The meat tastes funny.
7. A Did you taste the fruit salad?
8. A The young boy smelled the flowers.
9. S She looked depressed.
10. A The coach announced the dates of the scrimmage.
11. A The owner of the store stocks all types of sports equipment.
12. A He dribbled the ball down the court.
13. S Everything seems to be in order.



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Verb Tense

Tense is the way a verb is used to express time. To explain what is happening right now, use the **present tense**.

Example: He **is singing** well. He **sings** well.

To explain what has already happened, use the **past tense**.

Example: He **sang** well.

To explain what will happen, use the **future tense**.

Example: He **will sing** well.

Directions: Rewrite each sentence so the verbs are in the same tense. The first one has been done for you.

- He ran, he jumped, and then he is flying.
He ran, he jumped, and then he flew.
- He was crying, and then he will stop.
He was crying, and then he stopped.
- She feels happy, but she was not sure why.
She feels happy, but she is not sure why.
- He is my friend, and so was she.
He is my friend, and so is she.
- She bit into the peach and says it is good.
She bit into the peach and said it was good.
- He laughs first and then told us the joke.
He laughs first and then tells us the joke.



Spelling Different Forms of Verbs

To show that something is happening in the present, we can use the base form of a verb, or we can use **is** or **are** and add **ing** to the verb.

is/are + verb + ing
was/were + verb + ing

Example: We **run**. We **are running**.

To show that something has already happened, we can add **ed** to many verbs, or we can use **was** or **were** and add **ing** to a verb.

Example: The workers **surveyed** the land. The workers **were surveying** the land.

If a verb ends in **e**, drop the final **e** before adding an ending that begins with a vowel.

Example: She is **driving**. He **restored** the old car.

If a verb ends in **sh** or **ch**, add **es** instead of **s** to change the form.

Example: He **furnishes**. She **watches**.

Directions: Complete each sentence with the correct form of the verb given. The first one has been done for you.

- The florist is (have) a sale this week. having
- Last night's tornado (destroy) a barn. destroyed
- We are (research) the history of our town. researching
- My mistake was (use) a plural verb instead of a singular one. using
- She (act) quickly in yesterday's emergency. acted
- Our group is (survey) the parents in our community. surveying
- For our last experiment, we (observe) a plant's growth for two weeks. observed
- A local company already (furnish) all the materials for this project. furnished
- Which dairy (furnish) milk to our cafeteria every day? furnishes
- Just (ignore) the mess in here will not help your case. ignoring



Verb Tense

Answers will vary.

Directions: Write a sentence using the present tense of each verb.

- walk _____
- dream _____
- achieve _____

Directions: Write a sentence using the past tense of each verb.

- dance _____
- study _____
- hike _____

Directions: Write a sentence using the future tense of each verb.

- bake _____
- write _____
- talk _____

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Verb Tense

Verbs can be **present**, **past**, or **past participle**.

Add **d** or **ed** to form the past tense.

Past-participle verbs also use a helping verb, such as **has** or **have**.

Examples:

Present	Past	Past Participle
help	helped	has or have helped
skip	skipped	has or have skipped

Directions: Write the past and past-participle forms of each present tense verb.

Present	Past	Past Participle
1. paint	<u> painted </u>	<u> has (have) painted </u>
2. dream	<u> dreamed </u>	<u> has (have) dreamed </u>
3. play	<u> played </u>	<u> has (have) played </u>
4. approach	<u> approached </u>	<u> has (have) approached </u>
5. hop	<u> hopped </u>	<u> has (have) hopped </u>
6. climb	<u> climbed </u>	<u> has (have) climbed </u>
7. dance	<u> danced </u>	<u> has (have) danced </u>
8. appear	<u> appeared </u>	<u> has (have) appeared </u>
9. watch	<u> watched </u>	<u> has (have) watched </u>
10. dive	<u> dove/dived </u>	<u> has (have) dived </u>
11. hurry	<u> hurried </u>	<u> has (have) hurried </u>
12. discover	<u> discovered </u>	<u> has (have) discovered </u>
13. decorate	<u> decorated </u>	<u> has (have) decorated </u>
14. close	<u> closed </u>	<u> has (have) closed </u>
15. jump	<u> jumped </u>	<u> has (have) jumped </u>



Irregular Verb Forms

The past tense of most verbs is formed by adding **ed**. Verbs that do not follow this format are called **irregular verbs**.

The irregular verb chart shows a few of the many verbs with irregular forms.

Irregular Verb Chart		
Present Tense	Past Tense	Past Participle
do	went	has, have, or had gone
fly	did	has, have, or had done
grow	flew	has, have, or had flown
ride	grew	has, have, or had grown
see	rode	has, have, or had ridden
sing	saw	has, have, or had seen
swim	sang	has, have, or had sung
throw	swam	has, have, or had swum
	threw	has, have, or had thrown

The words **had**, **have**, and **has** can be separated from the irregular verb by other words in the sentence.

Directions: Choose the correct verb form from the chart to complete the sentences. The first one has been done for you.

- The pilot had never before flown that type of plane.
- She put on her bathing suit and swam 2 miles.
- The tall boy had grown 2 inches over the summer.
- She insisted she had done her homework.
- He saw them walking down the street.
- She rode the horse around the track.
- The pitcher has thrown the ball many times.
- He can swim safely in the deepest water.

Irregular Verb Forms

Directions: Use the irregular verb chart on the previous page. Write the correct verb form to complete each sentence.

- Has she ever grown carrots in her garden?
- She was so angry she threw a tantrum.
- The bird had sometimes flown from its cage.
- The cowboy has never ridden that horse before.
- Will you go to the store with me?
- He said he had often seen her walking on his street.
- She insisted she has not grown taller this year.
- He swam briskly across the pool.
- Have the insects flown away?
- Has anyone seen my sister lately?
- He hasn't done the dishes once this week!
- Has she been thrown out of the game for cheating?
- I haven't seen her yet today.
- The airplane flew slowly by the airport.
- Have you ridden your bike yet this week?



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Nouns and Verbs

Some words can be used as both nouns and verbs.

Example:

The **bait** on his hook was a worm.
He couldn't **bait** his hook.

In the first sentence, **bait** is used as a **noun** because it names a thing. In the second sentence, **bait** is used as a **verb** because it shows action.

Directions: Write **noun** or **verb** for the word in bold in each sentence. The first one has been done for you.

- verb** 1. She **piloted** the small plane across the Pacific Ocean.
- verb** 2. Does the **water** her garden every night?
- verb** 3. Did you **rebel** against the rules?
- noun** 4. Dad will pound the fence **post** into the ground.
- noun** 5. That was good **thinking**!
- verb** 6. I **object** to your language!
- noun** 7. He planned to become a **pilot** after graduation.
- verb** 8. The teacher will **post** the new school calendar.
- verb** 9. She was **thinking** of a book she read last week.
- noun** 10. The **object** of the search was forgotten.
- noun** 11. She was a **rebel** in high school.
- noun** 12. Would you like fresh **water** for your tea?



Spelling: Plurals

Is **heros** or **heroes** the correct spelling? Many people aren't sure. These rules have exceptions, but they will help you spell the plural forms of most words that end with **o**.

- If a word ends with a consonant and **o**, add **es**: **heroes**.
- If a word ends with a vowel and **o**, add **s**: **radios**.

Here are some other spelling rules for plurals:

- If a word ends with **s**, **ss**, **x**, **ch**, or **sh**, add **es**: **buses**, **kisses**, **loves**, **peaches**, **wishes**.
- If a word ends with **f** or **fe**, drop the **f** or **fe** and add **ves**: **leaf**, **leaves**, **wife**, **wives**.
- Some plurals don't end with **s** or **es**: **geese**, **deer**, **children**.

Directions: Write the plural forms of the words.

- Our area doesn't often have (tornado). tornadoes
- How many (radio) does this store sell every month? radios
- (Radish) are the same color as apples. Radishes
- Does this submarine carry (torpedo)? torpedoes
- Hawaii has a number of active (volcano). volcanoes
- Did you pack (knife) in the picnic basket? knives
- We heard (echo) when we shouted in the canyon. echoes
- Where is the list of (address)? addresses
- What will you do when that plant (reach) the ceiling? reaches
- Sometimes my dad (fix) us milkshakes. fixes
- Every night, my sister (wish) on the first star she sees. wishes
- Who (furnish) the school with pencils and paper? furnishes
- The author (research) every detail in her books. researches

heros or heroes?



Spelling: Plurals

Directions: Write the plural form of each word.

- | | | | |
|---------------|-------------------|----------------|--------------------|
| 1. mother | <u>mothers</u> | 16. summary | <u>summaries</u> |
| 2. ankle | <u>ankles</u> | 17. issue | <u>issues</u> |
| 3. journey | <u>journeys</u> | 18. member | <u>members</u> |
| 4. ceiling | <u>ceilings</u> | 19. astronomer | <u>astronomers</u> |
| 5. governor | <u>governors</u> | 20. channel | <u>channels</u> |
| 6. arch | <u>arches</u> | 21. harmony | <u>harmonies</u> |
| 7. carnival | <u>carnivals</u> | 22. piece | <u>pieces</u> |
| 8. official | <u>officials</u> | 23. chicken | <u>chickens</u> |
| 9. potato | <u>potatoes</u> | 24. chemical | <u>chemicals</u> |
| 10. vacuum | <u>vacuums</u> | 25. journal | <u>journals</u> |
| 11. stereo | <u>stereos</u> | 26. niece | <u>nieces</u> |
| 12. strategy | <u>strategies</u> | 27. mayor | <u>mayors</u> |
| 13. column | <u>columns</u> | 28. particle | <u>particles</u> |
| 14. architect | <u>architects</u> | 29. entrance | <u>entrances</u> |
| 15. entry | <u>entries</u> | 30. assistant | <u>assistants</u> |



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Simple Subjects

The **simple subject** of a sentence tells who or what the sentence is about. It is a noun or a pronoun.

Example: My **mom** is turning forty this year.
Mom is the simple subject.

Directions: Circle the simple subject in each sentence.

- The cat ate all its food.
- They watched the basketball game.
- My is going to lunch with her friend.
- Jose likes strawberry jam on his toast.
- The reporter interviewed the victim.
- She turned down the volume.
- The farm animals waited to be fed.
- Can you lift weights?
- The fan did little to cool the hot room.
- Thomas Jefferson was one of the founding fathers of our country.
- I have a lot to do tonight.
- Will you go to the movie with us?
- We enjoyed the day at the park.
- Our pet is a dog.
- She retrieved her homework from the garbage.



Simple Predicates

The **simple predicate** of a sentence tells what the subject does, is doing, did, or will do. The simple predicate is always a verb.

Example:

My mom **is turning** forty this year.
is turning is the simple predicate.

Directions: Underline the simple predicate in each sentence. Include all helping verbs.

- I bought school supplies at the mall.
- The tiger chased its prey.
- Mark will be arriving shortly.
- The hamburgers are cooking now.
- We will attend my sister's wedding.
- The dental hygienist cleaned my teeth.
- My socks are hanging on the clothesline.
- Where are you going?
- The dog is running toward its owner.
- Ramos watched the tornado in fear.
- Please wash the dishes after dinner.
- My dad cleaned the garage yesterday.
- We are going hiking at Yellowstone today.
- The picture shows our entire family at the family picnic.
- Our coach will give us a pep talk before the game.



Parallel Structure

Parts of a sentence are **parallel** when they "match" grammatically and structurally.

Faulty parallelism occurs when the parts of a sentence do not match grammatically and structurally.

For sentences to be parallel, all parts of a sentence—including the verbs, nouns, and phrases—must match. This means that, in most cases, verbs should be in the same tense.

Examples:

Correct: She liked running, jumping, and swinging outdoors.

Incorrect: She liked running, jumping, and to swing outdoors.

In the correct sentence, all three of the actions the girl liked to do end in **ing**. In the incorrect sentence, they do not.

Directions: Rewrite the sentences so all elements are parallel. The first one has been done for you.

- Politicians like making speeches and also to shake hands.
Politicians like making speeches and shaking hands.
- He liked singing, acting, and to perform in general.
He liked singing, acting, and performing in general.
- The soup had carrots, celery, and also has rice.
The soup had carrots, celery, and rice.
- The drink was cold, frosty, and also is a thirst-quencher.
The drink was cold, frosty, and thirst-quenching.
- She was asking when we would arrive, and I told her.
She asked when we would arrive, and I told her.
- Liz felt like shouting, singing, and to jump.
Liz felt like shouting, singing, and jumping.



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Matching Subjects and Verbs

If the subject of a sentence is singular, the verb must be singular. If the subject is plural, the verb must be plural.

Example:
The **dog** with floppy ears is **eating**.
The **dogs** in the yard **are eating**.



Directions: Write the singular or plural form of the subject in each sentence to match the verb.

- The (yolk) yolk in this egg is bright yellow.
- The (child) children are putting numbers in columns.
- Both (coach) coaches are resigning at the end of the year.
- Those three (class) classes were assigned to the gym.
- The (lunch) lunches for the children are ready.
- (Spaghetti) Spaghetti with meatballs is delicious.
- Where are the (box) boxes of chalk?
- The (man) men in the truck were collecting broken tree limbs.
- The (rhythm) rhythm of that music is exactly right for dancing.
- Sliced (tomato) tomatoes on lettuce are good with salmon.
- The (announcer) announcer on TV was condemning the dictator.
- Two (woman) women are campaigning for mayor of our town.
- The (group) group of travelers was on its way to three foreign countries.
- The (choir) choir of thirty children is singing hymns.
- In spite of the parade, the (hero) heroes were solemn.

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Subject/Verb Agreement

Singular subjects require singular verbs. **Plural subjects** require plural verbs. The subject and verb must agree in a sentence.

Example:
Singular: My dog runs across the field.
Plural: My dogs run across the field.

Directions: Circle the correct verb in each sentence.

- Maria (talk) talks to me each day at lunch.
- Mom, Dad, and I (is) are going to the park to play catch.
- Mr. and Mrs. Ramirez (dance) dance well together.
- Astronauts (hope) hope for a successful shuttle mission.
- Trees (prevent) prevent erosion.
- The student (is) is late.
- She (ask) asks for directions to the senior high gym.
- The elephants (dig) dig across the grassland to the watering hole.
- My friend's name (is) is Rebecca.
- Many people (enjoy) enjoy orchestra concerts.
- The pencils (are) are sharpened.
- My backpack (hold) holds a lot of things.
- The wind (blow) blows to the south.
- Sam (collect) collects butterflies.
- They (love) love fresh strawberries.



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Personal Pronouns

Personal pronouns take the place of nouns. They refer to people or things. **I, me, we, she, he, him, her, you, they, them, us, and it** are personal pronouns.

Directions: Circle the personal pronouns in each sentence.

- He is a terrific friend.
- Would you open the door?
- Jim and I will arrive at ten o'clock.
- Can you pick me up at the mall after dinner?
- What did you do yesterday?
- They are watching the game on television.
- Jessie's mom took us to the movies.
- She writes novels.
- They gave us the refrigerator.
- Is this the answer she intended to give?
- What is it?
- The dog yelped when it saw the cat.
- I admire him.
- We parked the bikes by the tree.
- The ants kept us from enjoying our picnic.



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Possessive Pronouns

Possessive pronouns show ownership. **My, mine, your, yours, his, her, hers, their, theirs, our, ours, and its** are possessive pronouns.

Directions: Circle the possessive pronouns in each sentence.

- My dogs chase cats continually.
- Keiko put her sunglasses on the dashboard.
- His mother and mine are the same age.
- The cat licked its paw.
- Their anniversary is February 1.
- This necklace is yours.
- We will carry our luggage into the airport.
- Our parents took us to dinner.
- My brother broke his leg.
- Her report card was excellent.
- Raspberry jam is my favorite.
- Watch your feet!
- The house on the left is mine.
- My phone number is unlisted.
- Our garden is growing out of control.
- Our pumpkins are ten times larger than theirs.



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Interrogative Pronouns

An **interrogative pronoun** asks a question. There are three interrogative pronouns: **who, what, and which**.

Use **who** when speaking of people.
Use **what** when speaking of things.
Use **which** when speaking of people or things.

Examples:
Who will go? **What** will you do? **Which** of these is yours?
Who becomes **whom** when it is a direct object or an object of a preposition. The possessive form of **whom** is **whose**.

Directions: Write the correct interrogative pronoun.

- Whose wet raincoat is this?
- Who is the president of the United States?
- What is your name?
- Which/Whose dog made this muddy mess?
- Which/Whose cat ran away?
- Which of you is the culprit?
- What was your grade on the last test?
- To whom did you report?
- Whom do you believe now?
- Who is the leader of this English study group?



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Personal and Possessive Pronouns

Directions: Write personal or possessive pronouns in the blanks to take the place of the words in bold. The first one has been done for you.

- They, him 1. **Maisie and Marni** told **Trent** they would see him later.
- He, them 2. **Spencer** told **Amelia and Jada** good-bye.
- It, his 3. **The bike** was parked near **Aaron's** house.
- They 4. **Maria, Matt, and Greg** claimed the car was new.
- theirs 5. The dishes were **the property of Gabriella and Jake**.
- hers 6. Is this **Layla's**?
- He, their 7. **Jon** walked near **Jessica and Esau's** house.
- It 8. **The dog** barked all night long!
- She, her 9. **Ana** fell and hurt **Ana's** knee.
- They, its 10. **Cory and Devan** gave the dog **the dog's** dinner.
- We, them 11. **Tori and I** gave **Brett and Reggie** a ride home.
- they 12. Do **Josh and Andrea** like cats?
- They, us 13. **Sasha and Keesha** gave **Josh and me** a ride home.
- hers 14. Is this sweater **Chloe's**?
- it 15. The cat meowed because **the cat** was hungry.



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ANSWER KEY

Pronoun/Antecedent Agreement

Often, a **pronoun** is used in place of a noun to avoid repeating the noun again in the same sentence. The noun that a pronoun refers to is called its **antecedent**. The word **antecedent** means "going before."

If the noun is singular, the pronoun that takes its place must also be singular. If the noun is plural, the pronoun that takes its place must also be plural. This is called agreement between the pronoun and its antecedent.

Examples:

Kyle (singular noun) said **she** (singular pronoun) would dance.
The **dogs** (plural noun) took **their** (plural pronoun) dishes outside.

When the noun is singular and the gender unknown, it is correct to use **his or her**.

Directions: Rewrite the sentences so the pronouns and nouns agree. The first one has been done for you.

1. Every student opened their book.

Every student opened his or her book.

2. Has anyone lost their wallet lately?

Has anyone lost his or her wallet lately?

3. Somebody found the wallet under their desk.

Somebody found the wallet under his or her desk.

4. Someone will have to file their report.

Someone will have to file his or her report.

5. Every dog has their day!

Every dog has its day!

6. I felt Ted had mine best interests at heart.

I felt Ted had my best interests at heart.



Pronoun/Antecedent Agreement

Directions: Write a pronoun that agrees with the antecedent.

1. Aiden said he would go to the store.

2. My friend discovered his or her wallet had been stolen.

3. The cat licked its paw.

4. Did any woman here lose her necklace?

5. Someone will have to give his or her report.

6. Alyah wished she had not come.

7. All the children decided they would attend.

8. My grandmother hurt her back while gardening.

9. Jerry, Marco, and I hope we win the game.

10. Halley looked for her missing homework.

11. The family had its celebration.

12. My dog jumps out of its pen.

13. Somebody needs to remove his or her clothes from this chair.

14. Everything has its place in Grandma's house.

15. The team will receive its uniforms on Monday.

16. Each artist wants his or her painting to win the prize.



Appositives

An **appositive** is a noun or pronoun placed after another noun or pronoun to further identify or rename it. An appositive and the words that go with it are usually set off from the rest of the sentence with commas. Commas are not used if the appositive tells "which one."

Example: Angela's mother, **Ms. Glover**, will visit our school.

Commas are needed because **Ms. Glover** renames Angela's mother.

Example: Angela's neighbor Maggie will visit our school.

Commas are not needed because the appositive "Maggie" tells **which** neighbor.

Directions: Write the appositive in each sentence in the blank. The first one has been done for you.

Ava 1. My friend Ava wants a horse.

Horses 2. She subscribes to the magazine Horses.

Brownie 3. Her horse is the gelding Brownie.

a convertible 4. We rode in her new car, a convertible.

a bracelet 5. Her gift was jewelry, a bracelet.

the senator 6. Have you met Ms. Abbott, the senator?

Karl 7. My cousin Karl is very shy.

Oaties 8. Do you eat the cereal Oaties?

Samantha 9. Kiki's cat, Samantha, will eat only tuna.

Jones 10. My last name, Jones, is very common.



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Dangling Modifiers

A **dangling modifier** is a word or group of words that does not modify what it is supposed to modify. To correct dangling modifiers, supply the missing words to which the modifiers refer.

Examples:

Incorrect: While doing the laundry, the dog barked.

Correct: While I was doing the laundry, the dog barked.

In the **incorrect** sentence, it sounds as though the dog is doing the laundry. In the **correct** sentence, it's clear that I is the subject of the sentence.

Directions: Rewrite the sentences to make the subject of the sentence clear and eliminate dangling modifiers. The first one has been done for you.

1. While eating our dinner, the doctor called.

While we were eating our dinner, the doctor called.

2. Living in Cincinnati, the ball park is nearby.

I live in Cincinnati, and the ball park is nearby

3. While watching the movie, the TV screen went blank.

While we were watching the movie, the TV screen went blank.

4. While listening to the concert, the lights went out.

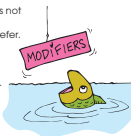
While we were listening to the concert, the lights went out.

5. Tossed regularly, anyone can make great salad.

Anyone can make a great salad if it is tossed regularly.

6. While working, something surprised him.

While he was working, something surprised him.



Review

Directions: Write **noun** or **verb** to describe the words in bold.

noun 1. She is one of the fastest **runners** I've seen.

verb 2. She is **running** very fast!

verb 3. She **thought** he was handsome.

noun 4. Please share your **thoughts** with me.

verb 5. I will **watch** the volleyball game on video.

noun 6. The sailor fell asleep during his **watch**.

noun 7. My grandmother believes my purchase was a real **find**.

verb 8. I hope to **find** my last books.

Directions: Rewrite the verb in the correct tense.

swam 9. She **swim** across the lake in 2 hours.

ridden 10. He has **ride** horses for years.

seen 11. Have you **saw** my sister?

flew 12. She **fly** on an airplane last week.

instructed 13. My father had **instruct** me in the language.

drove 14. I **drive** to the store yesterday.

began 15. The movie **begin** late.

did 16. Where **do** you go yesterday?

Directions: Circle the pronouns.

17. She and I told them to forgive us.

18. They all wondered how his dad would drive his new car.

19. We want our parents to believe us.

20. My picture was taken at her home.

Review

Directions: Rewrite the sentences to correct the faulty parallels.

1. The fresh blueberries were sweet, juicy, and are delicious.

The fresh blueberries were sweet, juicy, and delicious.

2. The town was barren, windswept, and is empty.

The town was barren, windswept, and empty.

3. The dog was black, long-haired, and is quite friendly.

The dog was black, long-haired, and quite friendly.

4. My favorite dinners are macaroni and cheese, spaghetti, and I loved fish.

My favorite dinners are macaroni and cheese, spaghetti, and fish.

Directions: Rewrite the sentences to make the verb tenses consistent.

5. We laughed, cried, and were jumping for joy.

We laughed, cried, and jumped for joy.

6. She sang, danced, and was doing somersaults.

She sang, danced, and did somersaults.

7. The class researched, studied, and were writing their reports.

The class researched, studied, and wrote their reports.

8. Orlando and Maya talked about their vacation and share their experiences.

Orlando and Maya talked about their vacation and shared their experiences.

Directions: Circle the pronouns that agree with their antecedents.

9. She left his (their) purse at the dance.

10. Each dog wagged his (their) tail.

11. We walked to our (the) car.

12. The lion watched his (its) prey.

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Review

Directions: Rewrite the sentences to correct the dangling modifiers.

- Living nearby, the office was convenient for her.
She was living nearby, so the office was convenient for her.
- While doing my homework, the doorbell rang.
While I was doing my homework, the doorbell rang.
- Watching over her shoulder, she hurried away.
She watched over her shoulder as she hurried away.
- Drinking from the large mug, he choked.
While he was drinking from the large mug, he choked.

Directions: Circle the correct pronouns.

- She laughed at my brother and (me).
me
- At dawn, (he and I) (him and me) were still talking.
he and I
- Someone left (his or her) (their) coat on the floor.
his or her
- Lauren said (her) (she) would not be late.
she

Directions: Circle the appositive.

- The school nurse (Ms. Franklin) was worried about him.
Ms. Franklin
- The car (a Volkswagen) was illegally parked.
a Volkswagen
- My hero, (Babe Ruth) was an outstanding baseball player.
Babe Ruth
- Is that car (the plum-colored one) for sale?
the plum-colored one
- Will Mr. Zimmer (odd's father) buy that car?
odd's father



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Adjectives

Adjectives describe nouns.

Examples:
tall girl
soft voice
clean hands

Directions: Circle the adjectives. Underline the nouns they describe. Some sentences may have more than one set of adjectives and nouns.

- The (only) man sat in the (dilapidated) house.
- I hope the (large) (crop) of grapes will soon ripen.
- The (white) (boxes) house honeybees.
- My (ambitious) puppy knocked over the (valuable) (flower) vase.
- The (unsinkable) Titanic sank after striking a (gigantic) iceberg.
- His grades showed his (tremendous) effort.
- There are (many) (exotic) flowers in the (area) (arrangement).
- These (sweet) beaches are the (best) I've tasted.
- The newsletter describes (several) (educational) workshops.
- The rodeo featured (professional) riders and (funny) clowns.
- My (evening) (golfing) class is (all) of very interesting people.
- My (older) (brother) loves his (new) (pickup) truck.
- Amira's family bought a (big-screen) TV.



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Comparing with Adjectives

When adjectives are used to compare two things, **er** is added at the end of the word for most one-syllable words and some two-syllable words.

Example: It is **colder** today than it was yesterday.

With many two-syllable words and all words with three or more syllables, the word **more** is used with the adjective to show comparison.

Example: Dr. X is **more professional** than Dr. Y.

When adjectives are used to compare three or more things, **est** is added at the end of the word for **most** one-syllable words and some two-syllable words.

Example: Today is the **coldest** day of the year.

With many two-syllable words and all words with three or more syllables, **most** is used with the adjective to show comparison.

Example: Dr. X is the **most professional** doctor in town.

When adding **er** or **est** to one-syllable words, these spelling rules apply.

- Double the last consonant if the word has a short vowel before a final consonant: thinner, fatter.
- If a word ends in **y**, change the **y** to **i** before adding **er** or **est**: earliest, prettiest.
- If a word ends in **e**, drop the final **e** before adding **er** or **est**: simpler, simplest.

Directions: Complete these sentences with the correct form of the adjective.

- This book is (small) smaller than that one.
- I want the (small) smallest book in the library.
- My plan is (practical) more practical than yours.
- My plan is the (practical) most practical one in the class.
- I wish the change was (gradual) more gradual than it is.
- My sister is the (childish) most childish girl in her day-care group.
- There must be a (simple) simpler way to do it than that.
- This is the (simple) simplest way of the four we thought of.



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Adjectives: Positive, Comparative, and Superlative

There are three degrees of comparison adjectives: **positive**, **comparative**, and **superlative**. The **positive degree** is the adjective itself. The **comparative** and **superlative** degrees are formed by adding **er** and **est**, respectively, to most one-syllable adjectives. The form of the word changes when the adjective is irregular, for example, **good, better, best**.

Most adjectives of two or more syllables require the words "more" or "most" to form the comparative and superlative degrees.

Examples:
Positive: big
Comparative: bigger
Superlative: biggest



Directions: Write the positive, comparative, or superlative forms of these adjectives.

	Positive	Comparative	Superlative
1. hard		<u>harder</u>	<u>hardest</u>
2. <u>happy</u>	happier		<u>happiest</u>
3. <u>difficult</u>	<u>more difficult</u>	most difficult	
4. cold		<u>colder</u>	<u>coldest</u>
5. <u>easy</u>	easier		<u>easiest</u>
6. <u>large</u>	<u>larger</u>	largest	
7. little		<u>littler</u>	<u>littlest</u>
8. <u>shiny</u>	shinier		<u>shiniest</u>
9. round		<u>rounder</u>	<u>roundest</u>
10. <u>beautiful</u>	<u>more beautiful</u>	most beautiful	

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Adverbs

Adverbs tell when, where, or how an action occurred.

Examples:
I'll go tomorrow. (when)
I sleep upstairs. (where)
I screamed loudly. (how)

Directions: Circle the adverb, and underline the verb it modifies. Write the question (when, where, or how) the adverb answers.

- I ran (quickly) toward the finish line. how
- Today we will (teach) our report cards. when
- He swam (smoothly) through the pool. how
- Many explorers searched (endlessly) for new lands. how or when
- He looked (up) into the sky. where
- My friend drove (away) in her new car. where
- (after) we will search for your missing wallet. when
- Most kings rule their kingdoms (equally). how
- New plants must be watered (daily). when
- The stream near our house is heavily (polluted). how
- My baby brother likes to walk (backwards) across his room. how



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Adverbs: Positive, Comparative, and Superlative

There are also three degrees of comparison adverbs: **positive**, **comparative**, and **superlative**. They follow the same rules as adjectives.

Example:
Positive: rapidly
Comparative: more rapidly
Superlative: most rapidly



Directions: Write the positive, comparative, or superlative forms of these adverbs.

	Positive	Comparative	Superlative
1. easily		<u>more easily</u>	<u>most easily</u>
2. <u>quickly</u>	more quickly		<u>most quickly</u>
3. <u>hopefully</u>	<u>more hopefully</u>	most hopefully	
4. bravely		<u>more bravely</u>	<u>most bravely</u>
5. <u>strongly</u>	more strongly		<u>most strongly</u>
6. near		<u>nearer</u>	<u>nearest</u>
7. <u>cleverly</u>	<u>more cleverly</u>	most cleverly	
8. <u>gracefully</u>	more gracefully		<u>most gracefully</u>
9. <u>humbly</u>	<u>more humbly</u>	most humbly	
10. excitedly		<u>more excitedly</u>	<u>most excitedly</u>
11. <u>handsomely</u>	more handsomely		<u>most handsomely</u>
12. slowly		<u>more slowly</u>	<u>most slowly</u>

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Adjectives and Adverbs

Directions: Write **adjective** or **adverb** in the blanks to describe the words in bold. The first one has been done for you.



- Her **old** boots were caked with mud.
adjective
- The baby was **cranky**.
adjective
- He took the test **yesterday**.
adverb
- I heard the **funniest** story last week!
adjective
- She left her wet shoes **outside**.
adverb
- Isn't that the **fluffiest** cat you've ever seen?
adjective
- He ran **around** the track twice.
adverb
- Our elderly neighbor seems **lonely**.
adjective
- His **kind** smile lifted my dragging spirits.
adjective
- Someday**, I'll meet the friend of my dream!
adverb
- His cat never meows **indoors**.
adverb
- Carlos hung his new shirts **back** in the closet.
adverb
- Put that valuable vase **down** immediately!
adverb
- She is the most **joyful** child!
adjective
- Jonathan's wool sweater is totally **moth-eaten**.
adjective

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Identifying Sentence Parts

The **subject** tells who or what a sentence is about. Sentences can have more than one subject.

Example: **Dogs** and **cats** make good pets.

The **predicate** tells what the subject does or that it exists. Predicates can be more than one word. A sentence can have more than one predicate.

Example: She **was walking**. She **walked** and **ran**.

An **adjective** is a word or group of words that describes the subject or another noun.

Example: The **cheerful yellow** bird with **blue** spots flew across the **flower-covered** meadow.

An **adverb** is a word or group of words that tells how, when, where, or how often.

Example: He sat **there** waiting **quietly**.

Directions: Write **S** for subject, **P** for predicate, **ADJ** for adjective, or **ADV** for adverb above each underlined word or group of words. The first one has been done for you.

- A **huge** dog with **large** teeth **was barking** **fiercely**.
ADJ S ADJ P ADV
- My **grandmother** **usually** **wore** a hat with a veil.
S ADV P
- My **niece** and her **friend** **are** the **same** height.
S S P ADJ
- The **lively** **reindeer** **danced** and **pranced** **bravely** on the rooftop.
ADJ S P P ADV



Directions: Write sentences containing the sentence parts listed. Mark each part even if the verb part gets separated.

- Possible answers:**
- Write a question with two subjects, two predicates, and two adjectives:
When will the yellow daisies and purple irises sprout and bloom?
 - Write a statement with one subject, two predicates, and two adjectives:
The enormous mountain blocked the hot sun and made a shady spot for our picnic.

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Identifying Sentence Parts

Directions: Write **S** for subject, **P** for predicate, **ADJ** for adjective, or **ADV** for adverb above the appropriate words in these sentences.

- The **large** **cat** **bounded** on the mouse **ferociously**.
ADJ S P ADV
- Did you** remember your homework?
P S P
- My **mother** is **traveling** to New York **tomorrow**.
S P P ADV
- I **play** basketball on **Monday** and **Friday** afternoons.
S P P ADJ ADJ
- The **old** **dear** **house** sat at the end of the street.
ADJ S P
- Several** **tiny** rabbits nibbled at the grass at the edge of the field.
ADJ S P ADJ ADJ
- The **lovely** **bride** **wore** a **white** dress with a **long** train.
ADJ S P ADJ ADJ
- We** **packed** the clothes for the **donation** center in a box.
S P P ADJ
- The **telephone** rang **incessantly**.
S P P ADV
- The **last** **child** **cried** **happily**.
ADJ S P P ADV
- What **will** we do with **these** **new** puppies?
S P P ADJ ADJ
- Laura** reads **several** books **each** week.
S P P ADV
- The **picture** hung **precisely** on the wall.
S P P ADJ
- I** **purchased** **many** **new** school supplies.
S P P ADJ
- Computers** have **changed** the **business** world.
S P P ADJ



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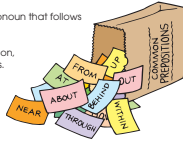
Prepositions

A **preposition** is a word that comes before a noun or pronoun and shows the relationship of that noun or pronoun to some other word in the sentence.

The **object of a preposition** is the noun or pronoun that follows a preposition and adds to its meaning.

A **prepositional phrase** includes the preposition, the object of the preposition, and all modifiers.

Example:
She gave him a pat **on his** back.
On is the preposition.
Back is the object of the preposition.
His is a possessive pronoun.



Common Prepositions

about	down	near	through
above	for	of	to
across	from	off	up
at	in	on	with
behind	into	out	within
by	like	past	without

Directions: Underline the prepositional phrases. Circle the prepositions. Some sentences have more than one prepositional phrase. The first one has been done for you.

- He claimed he felt at home only at the West Coast.
- She went to the street and then down the block.
- The famous poet was near the doorway.
- The beautiful birthday card was from her father.
- He left his wallet at home.
- Her speech was totally without humor.
- I think he's from New York City.
- Kari wanted to go with her mother to the mall.

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Prepositions

Directions: Complete the sentences by writing objects for the prepositions. The first one has been done for you.

Answers will vary.
Possible answers shown.

- He was standing at the corner of Fifth and Main.
- She saw her friend across the street.
- Have you ever looked beyond the index.
- His contact lens fell into the sink.
- Have you ever gone outside without a raincoat?
- She was anxious for the test to begin.
- Is that dog from the pound?
- She was daydreaming and walked past the store.
- The book was hidden behind the bookcase.
- The young couple had fallen in the lake.
- She insisted she was through the hardest part.
- He sat down near the window.
- She forgot her umbrella at the library.
- Have you ever thought of how you will get home?
- Henry found his glasses on the top of the refrigerator.



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Object of a Preposition

The **object of a preposition** is the noun or pronoun that follows the preposition and adds to its meaning.

Example:
Correct: Devan smiled **at** (preposition) **Tori** (noun: object of the preposition) and **me** (pronoun: object of the same preposition).
Correct: Devan smiled **at** Tori. Devan smiled **at** me. Devan smiled **at** Tori and I.
Incorrect: Devan smiled **at** Tori and I.

Tip: If you are unsure of the correct pronoun to use, pair each pronoun with the verb, and say the phrase out loud to find out which pronoun is correct.

Directions: Write the correct pronouns on the blanks. The first one has been done for you.

- him 1. It sounded like a good idea to Sadie and (he/him).
- her 2. I asked Abby if I could attend with (her/she).
- us 3. To (we/us), holidays are very important.
- us 4. Between (we/us), we finished the job quickly.
- him and me 5. They gave the award to (he and I/him and me).
- me 6. The party was for my brother and (I/me).
- him 7. I studied with (he/him).
- us 8. Tanya and the others arrived after (we/us).
- her 9. After the zoo, we stopped at the museum with Azim and (her/she).
- him 10. The chips for (he/him) are in the bag on top of the refrigerator.

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Direct Objects

A **direct object** is a noun or pronoun. It answers the question **whom** or **what** after a verb.

Examples: Answers will vary. Possible answers shown.

My mom baked **bread**.
Bread is the direct object. It tells **what** Mom baked.
 We saw **Steve**.
Steve is the direct object. It tells **whom** we saw.

Directions: Write a direct object in each sentence.

1. My dog likes ice cream. WHAT?
2. My favorite drink is hot chocolate. WHAT?
3. I saw a clown today. WHOM?
4. The car struck a fire hydrant. WHAT?
5. The fan blew bits of paper through the room. WHAT?
6. I packed a sandwich for lunch. WHAT?
7. We watched the team play basketball. WHOM?
8. I finished my homework. WHAT?
9. The artist sketched the bowl of fruit. WHAT?
10. He greets his cat at the door. WHOM?
11. The team attended the victory party. WHAT?
12. The beautician cut my hair. WHAT?
13. Tamika will write a novel. WHAT?



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Indirect Objects

An **indirect object** is a noun or pronoun that tells **to whom** or **for whom** or **what** the action is performed. An indirect object usually is found between a verb and a direct object.

Example: I gave **Ellen** my address.
Ellen is the indirect object. It tells **to whom** I gave my address.

Directions: Circle the indirect objects. Underline the direct objects.

1. Emma told Kameka the secret.
2. Advertisers promise consumers the world.
3. The dogs showed me their tricks.
4. Aunt Martha gave Audrey a necklace for her birthday.
5. Ramon brought Mom a bouquet of fresh flowers.
6. I sent my friend a package for Christmas.
7. Mr. Dunbar left his wife a note before leaving.
8. Grandma and Grandpa made their friends dinner.
9. The baby handed her mom a toy.
10. Tiera told Stephanie the recipe for trail mix.
11. We sent Grandma a card.
12. The waiter served us dessert.
13. Mom and Dad sold us the farm.



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Joining Sentences

Conjunctions are words that join sentences, words, or ideas. When two sentences are joined with **and**, they are more or less equal.

Example: Julio is coming, **and** he is bringing snacks.

When two sentences are joined with **but**, the second sentence contradicts the first one.

Example: Julio is coming, **but** he will be late.

When two sentences are joined with **or**, they name a choice.

Example: Julio might bring snacks, **or** he might bring lemonade.

When two sentences are joined with **because**, the second one names the reason for the first one.

Example: I'll bring snacks, too, **because** Julio might forget his.

When two sentences are joined with **so**, the second one names a result of the first one.

Example: Julio is bringing snacks, **so** we can eat when he gets here.

Directions: Complete each sentence. The first one has been done for you.

1. We could watch TV, or we could play a game.
2. I wanted to seize the opportunity, but I acted too late.
3. You had better not deceive me, because I will tell Grandma.
4. My neighbor was on vacation, so I took care of his cats.
5. Veins take blood back to your heart, and your lungs add oxygen to your blood.
6. You can't always yield to your impulses, because they may get you in trouble.
7. I know that is your belief, but I have a different belief.
8. It could be reindeer on the roof, or it could be sleet.
9. Brent was determined to achieve his goal, so he worked hard for two weeks.
10. Brittany was proud of her height, because she was tall like her mother.



Answers will vary. Possible answers shown.

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Conjunctions

The conjunctions **and**, **or**, **but**, and **nor** can be used to make a compound subject, a compound predicate, or a compound sentence.

Examples:
Compound subject: My friend **and** I will go to the mall.
Compound predicate: We ran **and** jumped in gym class.
Compound sentence: I am a talented violinist, **but** my father is better.

Directions: Write two sentences of your own in each section.

Answers will vary. Possible answers shown.

Compound subject:

1. Ava and Marnie played chess after school.
2. The rangers and the students hiked to the top of the mountain.

Compound predicate:

1. My uncle served in the navy and sailed around the world.
2. The squirrel ran up the tree and chattered at the dog.

Compound sentence:

1. I wanted to see the movie, but my parents would not let me.
2. The chicks pecked at the ground, and the duckling waded in the water.



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Review

Directions: Write the missing verb tenses.

Present	Past	Past Participle
1. catch	<u>caught</u>	<u>has (have) caught</u>
2. <u>stir</u>	stirred	<u>has (have) stirred</u>
3. <u>bake</u>	<u>baked</u>	has (have) baked
4. go	<u>went</u>	<u>has (have) gone</u>
5. <u>say</u>	said	<u>has (have) said</u>

Directions: Circle the simple subject, and underline the simple predicate in each sentence.

6. Maria got sunburned at the beach.
7. The class watched the program.
8. The tomatoes are ripening.
9. We went grocery shopping.
10. The cross country team practiced all summer.



Directions: Write the missing adjective or adverb forms below.

Positive	Comparative	Superlative
11. <u>friendly</u>	more friendly	<u>most friendly</u>
12. small	<u>smaller</u>	<u>smallest</u>
13. <u>fun</u>	<u>more fun</u>	most fun
14. <u>attractive</u>	more attractive	<u>most attractive</u>

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Review

Directions: Write **adjective** or **adverb** to describe the words in bold.

1. My **old** piano teacher lives nearby. adjective
2. My old piano teacher lives **nearby**. adverb
3. His hair looked **horrible**. adjective
4. Have you heard this **silly** joke? adverb
5. **Suddenly**, the door opened. adjective
6. The **magnificent** lion raised its head. adverb
7. I accomplished the task **yesterday**. adjective
8. This party has **delicious** food. adjective



Directions: Circle the prepositions.

9. He **went** in the door and up the stairs.
10. Is this lovely gift **from** you? from
11. I was **at** at, but the decision was **beyond** my power. beyond
12. His speech dragged **on** into the night. on
13. My great-grandmother's crystal dish **is** in the curio cabinet. in
14. He received a trophy **for** his accomplishments on the team. on
15. The president **of** the United States **is** on vacation. on
16. Joel wrote an excellent essay **about** Christopher Columbus. about

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Cumulative Review

Directions: Identify the part of speech of the words in bold. The first one has been done for you.

- The dog ran **across** the field. preposition
- My **parents** allow me to stay up until 10:00 p.m. noun as subject
- Our cat **is** long-haired. verb
- Matt will wash the **dirty** dishes. adjective
- Miguel washed the **car** on Saturday. noun as direct object
- The waterfall crashed **over** the cliff. preposition
- What will you give **her**? personal pronoun
- The car **rolled** to a stop. verb
- He **slowly** finished his homework. adverb
- My **nephew** will be 12 years old on Sunday. noun as subject
- The news program discussed the **war**. noun as direct object
- Our **family** portrait was taken in the gazebo. adjective
- I **would like** to learn to fly a plane. verb
- My hair needs to be trimmed. possessive pronoun
- Strawberry** jam is her favorite. adjective
- The horse **quickly** galloped across the field. adverb
- What will you do next? interrogative pronoun
- Please stand **and** introduce yourself. conjunction
- My neighbor takes **great** pride in her garden. adjective
- She sang **well** tonight. adverb
- My grandmother is from **Trinidad**. noun as object of preposition



Affect and Effect

Affect means "to act upon or influence."

Example: Studying will **affect** my test grade.

Effect means "to bring about a result or to accomplish something."

Example: The **effect** of her smile was immediate!

Directions: Write **affect** or **effect** in the blanks to complete these sentences correctly. The first one has been done for you.

- affects 1. Your behavior (affects/effects) how others feel about you.
- effect 2. His (affect/effect) on her was amazing.
- effect 3. The (affect/effect) of his jacket was striking.
- affect 4. What you say won't (affect/effect) me!
- effect 5. There's a relationship between cause and (affect/effect).
- affected 6. The (affect/effect) of her behavior was positive.
- affect 7. The medicine (affected/effect) her stomach.
- affect 8. What was the (affect/effect) of the punishment?
- affected 9. Did his behavior (affect/effect) her performance?
- effect 10. The cold (affected/effect) her breathing.
- affect 11. The (affect/effect) was instantaneous!
- affect 12. Your attitude will (affect/effect) your posture.
- effect 13. The (affect/effect) on her posture was major.
- effect 14. The (affect/effect) of the colored lights was calming.
- affected 15. She (affected/effect) his behavior.



Among and Between

Among is a preposition that applies to more than two people or things.

Example: The group divided the marbles **among** themselves.

Between is a preposition that applies to only two people or things.

Example: The marbles were divided **between** Jeremy and Sara.

Directions: Write **between** or **among** in the blanks to complete these sentences correctly. The first one has been done for you.

- between 1. The secret is (between/among) you and Jan.
- Between 2. (Between/Among) the two of them, whom do you think is nicer?
- among 3. I must choose (between/among) the goldfish, guppies, and tetras.
- among 4. She threaded her way (between/among) the kids on the playground.
- between 5. She broke up a fight (between/among) Josh and Sean.
- between 6. "What's come (between/among) you two?" she asked.
- between 7. "I'm (between/among) a rock and a hard place," Josh responded.
- among 8. "He has to choose (between/among) all his friends," Sean added.
- among 9. "Are you (between/among) his closest friends?" she asked Sean.
- between 10. "It's (between/among) another boy and me," Sean replied.
- among 11. "Can't you settle it (between/among) the group?"
- between 12. "No," said Josh. "This is (between/among) Sean and me."
- among 13. "I'm not sure he's (between/among) my closest friends."
- among 14. Sean, Josh, and Andy began to argue (between/among) themselves.
- between 15. I hope Josh won't have to choose (between/among) the two!



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All Together and Altogether

All together is a phrase meaning "everyone or everything in the same place."

Example: We put the eggs **all together** in the bowl.

Altogether is an adverb that means "entirely, completely, or in all."

Example: The teacher gave **altogether** too much homework.

Directions: Write **altogether** or **all together** in the blanks to complete these sentences correctly. The first one has been done for you.

- altogether 1. "You ate (altogether/all together) too much food."
- all together 2. The girls sat (altogether/all together) on the bus.
- All together 3. (Altogether/All together) now: one, two, three!
- altogether 4. I am (altogether/all together) out of ideas.
- all together 5. We are (altogether/all together) on this project.
- altogether 6. "You have on (altogether/all together) too much makeup!"
- all together 7. They were (altogether/all together) on the same team.
- All together 8. (Altogether/All together), we can help stop pollution (altogether/all together).
- altogether 9. He was not (altogether/all together) happy with his grades.
- altogether 10. The kids were (altogether/all together) too loud.
- All together 11. (Altogether/All together), the babies cried gustily.
- altogether 12. She was not (altogether/all together) sure what to do.
- all together 13. Let's sing the song (altogether/all together).
- altogether 14. He was (altogether/all together) too pushy for her taste.
- All together 15. (Altogether/All together), the boys yelled the school cheer.



Amount and Number

Amount indicates quantity, bulk, or mass.

Example: She carried a large **amount** of money in her purse.

Number indicates units.

Example: What **number** of people volunteered to work?

Directions: Write **amount** or **number** in the blanks to complete these sentences correctly. The first one has been done for you.

- number 1. She did not (amount/number) him among her closest friends.
- amount 2. What (amount/number) of food should we order?
- number 3. The (amount/number) of carrots on her plate was three.
- amount 4. His excuses did not (amount/number) to much.
- amounted 5. Her contribution (amounted/numbered) to half the money raised.
- number 6. The (amount/number) of injured players rose every day.
- amount 7. What a huge (amount/number) of cereal!
- number 8. The (amount/number) of calories in the diet was low.
- number 9. I can't tell you the (amount/number) of friends she has!
- amount 10. The total (amount/number) of money raised was incredible!
- number 11. The (amount/number) of gadgets for sale was amazing.
- number 12. He was startled by the (amount/number) of people present.
- amount 13. He would not do it for any (amount/number) of money.
- number 14. She offered a great (amount/number) of reasons for her actions.
- number 15. Can you guess the (amount/number) of beans in the jar?



Irritate and Aggravate

Irritate means "to cause impatience, to provoke, or to annoy."

Example: His behavior **irritated** his father.

Aggravate means "to make a condition worse."

Example: Her sunburn was **aggravated** by additional exposure to the sun.

Directions: Write **aggravate** or **irritate** in the blanks to complete these sentences correctly. The first one has been done for you.

- aggravated 1. The weeds (aggravated/irritated) his hay fever.
- aggravated 2. Scratching the bite (aggravated/irritated) his condition.
- irritated 3. Her father was (aggravated/irritated) about her low grade in math.
- irritated 4. It (aggravated/irritated) him when she switched TV channels.
- irritate 5. Are you (aggravated/irritated) when the cat screeches?
- irritate 6. Don't (aggravate/irritate) me like that again!
- irritation 7. He was in a state of (aggravate/irritation).
- aggravates 8. Picking at the scab (aggravates/irritates) a sore.
- irritates 9. Whistling (aggravates/irritates) the old grump.
- irritated 10. She was (aggravated/irritated) when she learned about it.
- irritate 11. "Please don't (aggravate/irritate) your mother," Dad warned.
- aggravated 12. His asthma was (aggravated/irritated) by too much stress.
- aggravate 13. Sneezing is sure to (aggravate/irritate) his allergies.
- irritate 14. Did you do that just to (aggravate/irritate) me?
- irritated 15. Her singing always (aggravated/irritated) her brother.



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Principal and Principle

Principal means "main, leader or chief, or a sum of money that earns interest."

Examples:

The high school **principal** earned interest on the **principal** in his savings account. The **principal** reason for his savings account was to save for retirement.

Principle means "a truth, law, or a moral outlook that governs the way someone behaves."

Examples:

Einstein discovered some fundamental **principles** of science. Stealing is against her **principles**.

Directions: Write **principal** or **principle** in the blanks to complete these sentences correctly. The first one has been done for you.

- principal 1. A (principle/principal) of biology is "the survival of the fittest."
- principles 2. She was a person of strong (principles/principals).
- principals 3. The (principles/principals) sat together at the district conference.
- principal 4. How much of the total in my savings account is (principle/principal)?
- principal 5. His hay fever was the (principle/principal) reason for his sneezing.
- principles 6. It's not the facts that upset me, it's the (principles/principals) of the case.
- principal 7. The jury heard only the (principle/principal) facts.
- principal 8. Our school (principle/principal) is strict but fair.
- principal 9. Spend the interest, but don't touch the (principle/principal).
- principle 10. Helping others is a guiding (principle/principal) of the homeless shelter.
- principle 11. In (principle/principal), we agree; on the facts, we do not.
- principles 12. The (principle/principal) course at dinner was leg of lamb.
- principles 13. Some mathematical (principles/principals) are difficult to understand.
- principal 14. The baby was the (principle/principal) reason for his happiness.

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Good and Well

Good is always an adjective. It is used to modify a noun or pronoun.

Examples:

We enjoyed the **good** food. We had a **good** time yesterday. It was **good** to see her again.

Well is used to modify verbs, to describe someone's health, or to describe how someone is dressed.

Examples:

I feel **well**. He looked **well**. He was **well**-dressed for the weather. She sang **well**.

Directions: Write **good** or **well** in the blanks to complete these sentences correctly.

1. She performed well.
2. You look good in that color.
3. These apples are good.
4. He rides his bike well.
5. She made a good attempt to win the race.
6. The man reported that all was well in the coal mine.
7. Jonas said, "I feel well, thank you."
8. The team played well.
9. Mom fixed a good dinner.
10. The teacher wrote, " Good work!" on top of my paper.



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Like and As

Like means something is similar or resembles something else, and it describes how things are similar in manner.

Examples:

She could sing **like** an angel. She looks **like** an angel, too!

As is a conjunction, or joining word, that links two independent clauses in a sentence.

Example: He felt chilly **as** night fell.

Sometimes **as** precedes an independent clause.

Example: **As** I told you, I will not be at the party.

Directions: Write **like** or **as** in the blanks to complete these sentences correctly. The first one has been done for you.

- as 1. He did not behave (like/as) I expected.
- like 2. She was (like/as) a sister to me.
- like 3. The puppy acted (like/as) a baby!
- As 4. (Like/As) I was saying, he will be there at noon.
- as 5. The storm was 25 miles away, (like/as) he predicted.
- like 6. He acted exactly (like/as) his father.
- like 7. The song sounds (like/as) a hit to me!
- like 8. Grandpa looked (like/as) a much younger man.
- As 9. (Like/As) I listened to the music, I grew sleepy.
- As 10. (Like/As) I expected, he showed up late.
- like 11. She dances (like/as) a ballerina!
- As 12. (Like/As) she danced, the crowd applauded.
- like 13. On stage, she looks (like/as) a professional!
- As 14. (Like/As) I thought, she has taken lessons for years.



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Review

Directions: Write the correct word in the blank.

- effect 1. The (affect/effect) of the shot was immediate.
- affected 2. The shot (affected/effected) her allergies.
- effect 3. You have a positive (affect/effect) on me!
- affected 4. I was deeply (affected/effected) by the speech.
- between 5. The prize was shared (among/between) Malik and Lola.
- among 6. She was (among/between) the best students in the class.
- among 7. He felt he was (among/between) friends.
- among 8. It was hard to choose (among/between) all the gifts.
- irritate 9. Does it (irritate/aggravate) you to see people behave rudely?
- aggravate 10. Does coughing (irritate/aggravate) his sore throat?
- irritated 11. He wondered why she was (irritated/aggravated) at him.
- irritation 12. The intensity of his (irritation/aggravation) grew each day.
- principal 13. She had a (principal/principle) part in the play.
- principal 14. Beans were the (principal/principle) food in his diet.
- principles 15. She was a woman of strong (principals/principles).
- principal 16. Mr. Larson was their favorite (principal/principle).
- number 17. The (amount/number) of bananas he ate was incredible.
- amount 18. I wouldn't part with it for any (amount/number) of money.
- as 19. It happened exactly (like/as) I had predicted!
- like 20. He sounds almost (like/as) his parents.

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Review

Directions: Use these words in sentences of your own.

1. affect Answers will vary.
2. effect _____
3. among _____
4. between _____
5. irritate _____
6. aggravate _____
7. principal _____
8. principle _____
9. good _____
10. well _____
11. like _____
12. as _____

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Capitalization

Capitalize . . .

- . . . the first word in a sentence.
- . . . the first letter of a person's name.
- . . . proper nouns, like the names of planets, oceans, and mountain ranges.
- . . . titles when used with a person's name, even if abbreviated (Dr., Mr., Lt.).
- . . . days of the week and months of the year.
- . . . cities, states, and countries.



Directions: Write **C** in the blank if the word or phrase is capitalized correctly. Rewrite the word or phrase if it is incorrect.

1. C President Abraham Lincoln _____
2. C Larry D. Walters _____
3. C saturn Saturn _____
4. C rosa parks Rosa Parks _____
5. C August _____
6. C professional _____
7. C jupiter Jupiter _____
8. C Pacific Ocean _____
9. C white house White House _____
10. C pet _____
11. C Congress _____
12. C Houston _____
13. C federal government _____
14. C dr. Nina Alvarez Dr. Nina Alvarez _____
15. C milwaukee, wisconsin Milwaukee, Wisconsin _____
16. C Appalachian mountains Appalachian Mountains _____
17. C lake michigan Lake Michigan _____
18. C Notre Dame College _____
19. C department of the interior Department of the Interior _____
20. C monday and Tuesday Monday and Tuesday _____

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ANSWER KEY

Capitalization

Words that name places, people, months, and landmarks are always capitalized.

Examples:

Sonia Sofomayor
White House
Fifth Avenue

Acme Motor Company
Jefferson Memorial
May, June, July



Directions: Rewrite the sentences using correct capitalization.

1. My family and I visited washington, d.c., in july.

My family and I visited Washington, D.C., in July.

2. We saw the washington monument, the capital building, and the white house.

We saw the Washington Monument, the Capital Building, and the White House.

3. I was very impressed by our visit to the smithsonian institution.

I was very impressed by our visit to the Smithsonian Institution.

4. Our taxi driver, from the american cab company, showed us around town.

Our taxi driver, from the American Cab Company, showed us around town.

5. We drove down pennsylvania avenue.

We drove down Pennsylvania Avenue.

6. We were unable to see the president of the united states.

We were unable to see the President of the United States.

7. However, we did see the first lady.

However, we did see the First Lady.

8. My parents and I decided to visit arlington national cemetery.

My parents and I decided to visit Arlington National Cemetery.

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Commas

Use **commas** . . .

- . . . after introductory phrases.
- . . . to set off nouns of direct address.
- . . . to set off appositives from the words that go with them.
- . . . to set off words that interrupt the flow of the sentence.
- . . . to separate words or groups of words in a series.



Examples:

Introductory phrase: Of course, I'd be happy to attend.

Noun of direct address: Ms. Williams, please sit here.

To set off appositives: Lee, the club president, sat beside me.

Words interrupting flow: My cousin, who's 13, will also be there.

Words in a series: I ate popcorn, peanuts, sunflower seeds, and dried berries.

Directions: Identify how the commas are used in each sentence.

Write: **I** for introductory phrase
N for noun of direct address
A for appositive
WF for words interrupting flow
WS for words in a series

- I 1. Yes, she is my sister.
- A 2. My teacher, Mr. Hopkins, is very fair.
- WS 3. Her favorite fruits are oranges, plums, and grapes.
- A 4. The city mayor, Carla Ellison, is quite young.
- WS 5. I will buy bread, milk, fruit, and ice cream.
- WF 6. Her crying, which was quite loud, soon gave me a headache.
- N 7. Sarjana, please answer the question.
- I 8. So, do you know her?
- I 9. Unfortunately, the item is not returnable.
- WS 10. My sister, my cousin, and my friend will accompany me on vacation.
- A 11. My grandparents, Rose and Bill, are both 57 years old.

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Commas

Directions: Use commas to punctuate these sentences correctly.

1. I'll visit her, however, not until I'm ready.
2. She ordered coats, gloves, and a hat from the catalog.
3. Eun-Jung, the new girl, liked ill of ease.
4. Certainly, I'll show Eun-Jung around school.
5. Yes, I'll be glad to help her.
6. I paid, nevertheless, I was unhappy with the price.
7. I bought stamps, envelopes, and plenty of postcards.
8. Not told you I was not going.
9. The date, November 12, was not convenient.
10. Her carache, which kept her up all night, stopped at dawn.
11. My nephew, who loves bike riding, will go with us.
12. He'll bring hiking boots, a tent, and food.
13. The cat, a Himalayan, was beautiful.
14. The tennis player, a professional in every sense, signed autographs.
15. No, you can't stay out past 10:00 P.M.



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Semicolons

A **semicolon** (;) signals a reader to pause longer than for a comma, but not as long as for a period. Semicolons are used between closely related independent clauses not joined by **and**, **or**, **nor**, **for**, **yet**, or **but**.

An **independent clause** contains a complete idea and can stand alone.

Example: Rena was outgoing; her sister was shy.

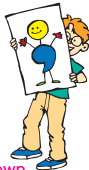
Directions: Use semicolons to punctuate these sentences correctly. Some sentences require more than one semicolon.

1. Jeff wanted coffee; Sophia wanted milk.
2. I thought he was kind; she thought he was grouchy.
3. "I came!" saw; I conquered," wrote Julius Caesar.
4. Harper read books; she also read magazines.
5. I wanted a new coat; my old one was too small.
6. The airport was fogged in; the planes could not land.
7. Now, he regrets his comments; it's too late to retract them.
8. The girls were thrilled; their mothers were not.

Answers will vary. Possible answers shown.

Directions: Use a semicolon and an independent clause to complete the sentences.

9. She liked him ; she wished they were friends.
10. I chose a red shirt ; he chose a green shirt.
11. Andrea sang well ; her parents were impressed.
12. She jumped for joy ; the team had won.
13. Dancing is good exercise ; I do it at least once a day.
14. The man was kind ; his children loved him.
15. The tire looked flat ; we did not buy the car.
16. My bike is missing ; I feel sad.



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Colons

Use a **colon** . . .

- . . . after the salutation of a business letter.
- . . . between the hour and the minute when showing time.
- . . . between the volume and page number of a periodical.
- . . . between chapters and verses of the Bible.
- . . . before a list of three or more items.
- . . . to introduce a long statement or quotation.

Examples:

Salutation: Dear Madame:

Hour and minute: 8:45 P.M.

Periodical volume and page number: Newsweek 11:32

Bible chapter and verse: John 3:16

Before a list of three or more items: Buy these: fruit, cereal, cheese

To introduce a long statement or quotation: Author Willa Cather said this about experiencing life: "There are only two or three human stories, and they go on repeating themselves as fiercely as if they had never happened before."

Directions: Use colons to punctuate these sentences correctly. Some sentences require more than one colon.

1. At 12:45 the president said this, "Where's my lunch?"
2. Don't forget to order these items: boots, socks, shoes, and leggings.
3. Ask the librarian for: Weekly Reader 3:14.
4. Dear Sir: Please send me two copies of your report.
5. Avoid these at all costs: bad jokes, bad company, and bad manners.
6. The statement is in either Genesis 1:6 or Exodus 3:2.
7. At 9:15 P.M., she checked in, and at 6:45 A.M., she checked out.
8. I fell all these things at once: joy, anger, and sadness.



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Dashes

Dashes (—) are used to indicate sudden changes of thought.

Examples:

I want milk—no, make that juice—with my lunch.
Wear your old clothes—new ones would get spoiled.



Directions: If the dash is used correctly in the sentence, write **C** in the blank. If the dash is missing or used incorrectly, write **X** in the blank. The first one has been done for you.

- C 1. No one—not even my dad—knows about the surprise.
- X 2. Ask—him—no I will to come to the party.
- X 3. I'll tell you the answer oh, the phone just rang!
- C 4. Everyone thought—even her brother—that she looked pretty.
- C 5. Can you please—oh, forget it!
- X 6. Just stop if I really mean it!
- C 7. Tell her that I'll—never mind—I'll tell her myself!
- X 8. Everyone especially Anna is overwhelmed.
- X 9. I wish everyone could—forgive me—I'm sorry!
- C 10. The kids—at six of them—piled into the backseat.

Directions: Write two sentences of your own that include dashes.

11. _____ Answers will vary.
12. _____

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Quotation Marks

Quotation marks are used to enclose a speaker's exact words. Use commas to set off a direct quotation from other words in the sentence.

Examples:
Kira smiled and said, "Quotation marks come in handy."
"Yes," Josh said. "I'll take two."

Directions: If quotation marks and commas are used correctly, write **C** in the blank. If they are used incorrectly, write **X** in the blank. The first one has been done for you.

- C 1. "I suppose," Elizabeth remarked, "that you'll be there on time."
- X 2. "Please let me help!" insisted Mark.
- X 3. "I'll be ready in 2 minutes!" her father said.
- C 4. "Just breathe slowly," the nurse said, "and calm down."
- X 5. "No one understands me," William whined.
- C 6. "Would you like more milk?" Jasmine asked politely.
- X 7. "No thanks, her grandpa replied, "I have plenty."
- C 8. "What a beautiful morning!" Zola yelled.
- X 9. "Yes, it certainly is" her mother agreed.
- C 10. "Whose purse is this?" asked Andrea.
- X 11. "It's mine," said Nadia. "Thank you."
- C 12. "Can you play the piano?" asked Beatriz.
- X 13. "Music is my hobby," Jonathan replied.
- X 14. "Great!" yelled Harry. "Let's play some tunes."
- C 15. "I practice a lot," said Jayne proudly.



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Quotation Marks

Directions: Use quotation marks and commas to punctuate these sentences correctly.

1. "Ms. Elliot replied, "you may not go."
2. "Watch out!" yelled the coach.
3. "Please bring my coat," called Renee.
4. "After thinking for a moment," Paul said, "I don't believe you."
5. "Dad said," remember to be home by 9:00 p.m."
6. "Finish your projects," said the art instructor.
7. "Go back," instructed Mom, "and comb your hair!"
8. "I won't be needing my winter coat anymore," replied Mei-Ling.
9. "He said," "How did you do that?"
10. "I stood and said," "My name is Rosalita."
11. "No," said Mishu, "I will not attend."
12. "Don't forget to put your name on your paper," said the teacher.
13. "Pay attention, class," said our history teacher.
14. "As I came into the house, Mom called," "Dinner is almost ready!"
15. "Wake, come when I call you," said Mother.
16. "How was your trip to France?" Mrs. Shaw asked Grace.



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Apostrophes

Use an **apostrophe** (') in a contraction to show that letters have been left out. A **contraction** is a shortened form of two words, usually a pronoun and a verb.

Add an **apostrophe** and **s** to form the **possessive** of singular nouns. **Plural possessives** are formed two ways. If the noun ends in **s**, simply add an apostrophe at the end of the word. If the noun does not end in **s**, add an apostrophe and **s**.

Examples:
Contraction: He **can't** button his sleeves.
Singular possessive: The **boy's** sleeves are too short.
Plural noun ending in s: The **ladies'** voices were pleasant.
Plural noun not ending in s: The **children's** song was long.

Directions: Use apostrophes to punctuate the sentences correctly. The first one has been done for you.

1. I can't understand that child's game.
2. The farmer's wagons were lined up in a row.
3. She dirtied like the chairs' covers.
4. Our parents' beliefs are often our own.
5. Elend's mother's aunt isn't going to visit.
6. Two ladies from work didn't show up.
7. The citizens' group wasn't very happy.
8. The colonists' demands weren't unreasonable.
9. The mother's babies cried at the same time.
10. Our parents' generation enjoys music.



Directions: Write two sentences of your own that include apostrophes.

11. _____ **Answers will vary.**
12. _____

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Contractions

Examples:
he will = **he'll**
she is = **she's**
they are = **they're**
can not = **can't**



Contraction Chart

Pronoun	Verb	Contraction
I	+ am	= I'm
we, you, they	+ are	= we're, you're, they're
he, she, it	+ is	= he's, she's, it's
I, we, you, they	+ have	= I've, we've, you've, they've
I, you, we, she, he, they	+ would	= I'd, you'd, we'd, she'd, he'd, they'd
I, you, we, she, he, they	+ will	= I'll, you'll, we'll, she'll, he'll, they'll

Answers will vary. Possible answers shown.

Directions: Write a sentence using a contraction. The first one has been done for you.

1. I will I'll see you tomorrow!
2. they are They're going to the park.
3. we have We've been waiting for two hours!
4. she would She'd like to go to the store with you.
5. you are You're responsible for the fish tank.
6. they will They'll finish the work later today.
7. she is She's a good friend of mine.
8. he would He'd better follow the rules.
9. they are They're going to be surprised.
10. I am I'm ready for my swim lesson.

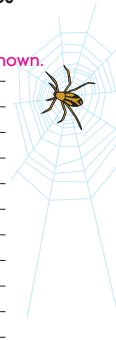
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Singular Possessives

Directions: Write the singular possessive form of each word. Then, add a noun to show possession. The first one has been done for you.

Answers will vary. Possible answers shown.

1. spider spider's web
2. clock clock's hands
3. car car's wheel
4. book book's pages
5. Mom Mom's hair
6. boat boat's rudder
7. table table's legs
8. baby baby's bottle
9. woman woman's coat
10. writer writer's talent
11. mouse mouse's tail
12. fan fan's dedication
13. lamp lamp's light
14. dog dog's collar
15. boy boy's name
16. house house's roof



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Plural Possessives

Directions: Write the plural possessive form of each word. Then, add a noun to show possession. The first one has been done for you.

Answers will vary. Possible answers shown.

1. kid kids' skates
2. man men's shoes
3. aunt aunts' husbands
4. lion lions' homes
5. giraffe giraffes' necks
6. necklace necklaces' prices
7. mouse mice's feet
8. team teams' players
9. clown clowns' car
10. desk desks' legs
11. woman women's store
12. worker workers' hardhats



Directions: Write three sentences of your own that include plural possessives.

13. _____ **Answers will vary.**
14. _____
15. _____

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ANSWER KEY

Italics

Use **italics** or **underlining** for titles of books, newspapers, plays, magazines, and movies.

Examples:

- Book:** Have you read *The Humming Room*?
Movies: Did you see *The Muppet Movie*?
Newspaper: I like to read *The New York Times*.
Magazine: Some children read *Sports Illustrated*.
Play: My school is putting on the play *Peter Pan*.



Since we cannot write in italics, we underline words that should be in italics.

Directions: Underline the words that should be in italics. The first one has been done for you.

1. I read about a play titled Cats in The Cleveland Plain Dealer.
2. You can find The New York Times in most libraries.
3. L. M. Montgomery wrote Anne of Green Gables.
4. Parents and Newsweek are both popular magazines.
5. The original Miracle on 34th Street was filmed long ago.
6. Cricket and Ranger Rick are magazines for children.
7. Bon Appetit means "good appetite" and is a cooking magazine.
8. Harper's, The New Yorker, and Vanity Fair are magazines.
9. David Copperfield was written by Charles Dickens.
10. Harriet Beecher Stowe wrote Uncle Tom's Cabin.
11. My cousin has watched The LEGO Movie four times.
12. Jake and Lily is by one of my favorite authors—Jerry Spinelli.
13. The Louisville Courier-Journal is a Kentucky newspaper.
14. American Girl and Boys' Life are magazines for young readers.
15. My whole family loved Disney's nature film Bears.

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Complete Sentences

A **complete sentence** has both a simple subject and a simple predicate. It is a complete thought. Sentences that are not complete are called **fragments**.

- Example:**
Complete sentence: The wolf howled at the moon.
Sentence fragment: Howled at the moon.

Directions: Write **C** on the line if the sentence is complete. Write **F** if it is a fragment.

1. C The machine is running.
2. C What will we do today?
3. F Knowing what I do.
4. C That statement is true.
5. C My parents drove to town.
6. F Watching television all afternoon.
7. C The storm devastated the town.
8. C Our friends can go with us.
9. C The palm trees bent in the wind.
10. F Spraying the fire all night.



Answers will vary. Possible answers shown.

- Directions:** Rewrite the sentence fragments from above to make them complete sentences.
- Knowing what I do now, I would not try to talk to him.
Watching television all afternoon makes me feel sleepy.
The firemen were exhausted after spraying the fire all night.

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Run-On Sentences

A **run-on sentence** occurs when two or more sentences are joined together without punctuation or a joining word. Run-on sentences should be divided into two or more separate sentences.

- Example:**
Run-on sentence: My parents, sister, brother, and I went to the park we saw many animals we had fun.
Correct: My parents, sister, brother, and I went to the park. We saw many animals and had fun.

Directions: Rewrite the run-on sentences correctly.

1. The dog energetically chased the ball I kept throwing him the ball for a half hour.
The dog energetically chased the ball. I kept throwing him the ball for a half hour.
2. The restaurant served scrambled eggs and bacon for breakfast I had some and they were delicious.
The restaurant served scrambled eggs and bacon for breakfast. I had some, and they were delicious.
3. The lightning struck close to our house it scared my little brother and my grandmother called to see if we were safe.



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Finding Spelling Errors

Directions: One word in each sentence below is misspelled. Write the word correctly on the line.

1. Isaiah felt discouraged at the comparison between him and his older brother. discouraged
2. I got impatient as my curiosity grew. impatient
3. She confided that she had not finished the assignment. assignment
4. They made the selection after a brief conference. conference
5. Obviously, it's impolite to sneeze on someone. Obviously
6. This skin cream is practically invisible. practically
7. What would prevent you from taking on additional work? additional
8. I can recite the words to that hymn. recite
9. In a previous column, the newspaper explained the situation. column
10. He deceived me so many times that now I distrust him. deceived
11. Please have the courtesy to observe the "No Eating" signs. courtesy
12. The advertisement is so small that it's nearly invisible. invisible
13. The best way to communicate is in a face-to-face conversation. conversation
14. In a cost comparison, salmon is more expensive than tuna. comparison
15. Popularity among friends shouldn't depend on your accomplishments. Popularity
16. Her campaign was quite an achievement. achievement
17. He condemned it as a poor imitation. condemned



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Finding Spelling Errors

Directions: Circle all misspelled words. Write the words correctly on the lines at the end of each paragraph. If you need help, consult a dictionary.

Sabrina wanted to acquire a softwater aquarium she was worried about the expense though, so first she did some research she wanted to learn the exact care softwater fish need, not just to exist but to flourish. One coace said she needed to put water in the aquarium and wait 6 weeks before she added the fish. "Good gratit," Sabrina thought. She got a kitten from her neighbo instead.

acquire, aquarium, expense, research, exact, exist, flourish, source, grief, neighbor

One stormy day, Marcel was babytiffing his niece he happened to observe that the sky looked darker than norm. At first he noticed, but then he noticed a black cloud expans and grow in height. Then, a fall dropped down from the twisting cloud and seize a tree! "It's a tornado!" Marcel shouted. "Maybe two height! This is an emergency!" For conferment Marcel wished he hadn't shouted, because his niece looked at him with a very frightened expression. Just then, the ceiling began to sag as if it had a heavy weight on it. "This is an excellent time to visit the basement," he told the little girl as calm as possible.

niece, observe, normal, ignored, expand, height, seized, tornadoes, emergency, brief, expression, ceiling, weight, excellent

Just before Mother's Day, Bethany went to a course to buy some flowers for her mother. "Well, what is your quest?" the clerk asked. "I don't have much money," Bethany told him. "So make up your mind," he said impatiently. "Do you want quality or quantity?" Bethany wondered if he was giving her a quest. She tried not to complain as she stared down at her. Finally, she said, "I want quantity as she headed for the exit."

florist, request, quality, quantity, quiz, squim, courtesy, exit



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Finding Spelling Errors

Directions: Find six errors in each paragraph. Write the words correctly on the lines after each paragraph. Use a dictionary if you need help.

My brother Jim took a math course at the high school that was too hard for him. My father didn't want him to take it, but Jim said, "Oh, you're just too critical." Dad obvious, you don't think I can do it," Jim ignore Dad. That's form at our house. course, him, critical, Obviously, ignored, normal

"Well, the first day Jim went to the course, he came home with a solemn expression on his face, like a condemned man." That teacher assigned us five pages of homework!" he said. "And two additional problems that we have to assign." solemn, expression, condemned, assigned, additional, research

"He sounds like an excellent professional teacher," my dad said. "We need more teachers of that quality in our schools." Jim squirmed in his seat. Then, the gradual started to smile. "Dad, I need some help with a personal problem," he said. "Five pages of problems, right?" Dad asked. Jim smiled and handed Dad his math book. That's placed at our house, too. excellent, professional, quality, gradually, personal, typical

One day, we had a medical emergency at home. My sister hand got stuck in a basket with a narrow opening, and she couldn't pull it out. I thought she would have to wear the basket on her hand permanently. First, I tried to stretch and expand the basket opening, but that didn't work. medical, emergency, sister's, permanently, expand, basket's

Then, I smeared a quantity of butter on my sister hand, and she pulled it right out. I thought she would have the courtesy to thank me, but she just stomped away, still mad. How important sometimes she seems to think exist just to serve her. There are more important things in the world than her happiness! quantity, sister's, courtesy, childish, exist, important

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Writing: Four Types of Sentences

There are four main types of sentences: A **statement** tells something. It ends in a period. A **question** asks something. It ends in a question mark. A **command** tells someone to do something. It ends in a period or an exclamation mark. An **exclamation** shows strong feeling or excitement. It ends in an exclamation mark.



Directions: Write what you would say in each situation. Then, tell whether the sentence you wrote was a statement, question, exclamation, or command. The first one has been done for you.

Write what you might say to:

1. A friend who has a new cat:
When did you get the new cat? (question)
or **Boy, what a cute cat!** (exclamation)

2. A friend who studied all night for the math test:
Answers will vary.

3. Your teacher, about yesterday's homework:

4. A child you're watching who won't sit still for a second:

5. Your sister, who's been on the phone too long:

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Organizing Paragraphs

A **topic sentence** states the main idea of a paragraph and is usually the first sentence. **Support sentences** follow, providing details about the topic. All sentences in a paragraph should relate to the topic sentence. A paragraph ends with a **conclusion sentence**.

Directions: Rearrange each group of sentences into a paragraph, beginning with the topic sentence. Cross out the sentence in each group that is not related to the topic sentence. Write the new paragraph.

Now, chalk drawings are considered art by themselves. The earliest chalk drawings were found on the walls of caves. Chalk is also used in cement, fertilizer, toothpaste, and makeup. Chalk once was used just to make quick sketches. Chalk has been used for drawing for thousands of years. Then, the artist would paint pictures from the sketches.

Chalk has been used for drawing for thousands of years. The earliest chalk drawings were found on the walls of caves. Chalk once was used just to make quick sketches. Then, the artist would paint pictures from the sketches. Now, chalk drawings are considered art by themselves.

Dams also keep young salmon from swimming downriver to the ocean. Most salmon live in the ocean but return to fresh water to lay their eggs and breed. Dams prevent salmon from swimming upriver to their spawning grounds. Pacific salmon die after they spawn the first time. One kind of fish pass is a series of pools of water that lead the salmon over the dams. Dams are threatening salmon by interfering with their spawning. To help with this problem, some dams have special "fish passes" to allow salmon to swim over the dam.

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Building Paragraphs

Directions: Read each group of questions and the topic sentence. On another sheet of paper, write support sentences that answer each question. Number your support sentences in order. Make any necessary changes so the sentences fit together in one paragraph. Then, write your paragraph after the topic sentence.

Questions: Why did Noah feel sad?
What happened to change how he felt?
How does he feel when he comes to school now?

Noah used to look so solemn when he came to school. _____
Answers will vary.

Questions: Why did Sienna want to go to another country?
Why couldn't she go?
Does she have any plans to change that?

Sienna always wanted to visit a foreign country. _____

Questions: What was Paulo's "new way to fix spaghetti"?
Did anyone else like it?
Did Paulo like it himself?

Paulo thought of a new way to fix spaghetti. _____



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Explaining with Examples

Some paragraphs paint word pictures using adjectives, adverbs, similes, and metaphors. Other paragraphs explain by naming examples.

Example:

Babysitting is not an easy way to earn money. For example, the little girl you're watching may be very cranky and cry until her parents come home. Or maybe the family didn't leave any snacks and you have to starve all night. Even worse, the child could fall and get hurt. Then, you have to decide whether you can take care of her yourself or if you need to call for help. No, babysitting isn't easy.



Directions: Write examples for each topic sentence on another sheet of paper. Number them in order to put them in paragraph form. Make any necessary changes so the sentences fit together in one paragraph. Then, write your paragraphs below after the topic sentences.

1. Sometimes, dreams can be scary. _____

2. You can learn a lot by living in a foreign country. _____

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Creating Word Pictures

Painters create pictures with colors. Writers create pictures with words. Adding adjectives and adverbs and using specific nouns, verbs, similes, and metaphors in sentences help create word pictures.

Notice how much more interesting and informative these two rewritten sentences are.

Original sentence
The animal ate its food.

Rewritten sentences
Like a hungry lion, the starving cocker spaniel wolfed down the entire bowl of food in seconds.

The raccoon delicately washed the berries in the stream before nibbling them slowly, one by one.

Directions: Rewrite each sentence twice, creating two different word pictures.

1. The person built something. _____
Answers will vary.

2. The weather was bad. _____

3. The boy went down the street. _____

4. The children helped. _____



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Describing People

Often, a writer can show how someone feels by describing how that person looks or what he or she is doing, rather than by using emotion words, like **angry** or **happy**. This is another way to create word pictures.

Directions: Read the phrases below. Write words to describe how you think that person feels.

1. like a tornado, yelling, raised fists **angry**

2. slumped, walking slowly, head down **depressed**

3. trembling, breathing quickly, like a cornered animal **scared**

Directions: Write one or two sentences for each phrase without using emotion words.

4. a runner who has just won a race for his or her school _____
Answers will vary.

5. a sixth grader on the first day in a new school _____

6. a teenager walking down the street and spotting a house on fire _____

7. a scientist who has just discovered a cure for lung cancer _____

8. a kindergarten child being ignored by his or her best friend _____

ANSWER KEY

Describing Events in Order

When we write to explain what happened, we need to describe the events in the same order they occurred. Words and phrases such as **at first**, **then**, **after that**, and **finally** help us relate the order of events.



Directions: Rewrite the paragraph below, putting the topic sentence first and arranging the events in order.

I got dressed, but I didn't really feel like eating breakfast. By the time I got to school, my head felt hot, so I went to the nurse. This day was terrible from the very beginning. Finally, I ended up where I started—back in my own bed. Then, she sent me home again! I just had some toast and left for school. When I first woke up in the morning, my stomach hurt.

This day was terrible from the very beginning. When I first woke up in the morning, my stomach hurt. I got dressed, but I didn't really feel like eating breakfast. I just had some toast and left for school. By the time I got to school, my head felt hot, so I went to the nurse. Then, she sent me home again! Finally, I ended up where I started—back in my own bed.

Directions: Follow these steps to write a paragraph about what happened the last time you tried to cook something or the last time you tried to fix something that was broken.

1. Write your first draft on another sheet of paper. Start with a topic sentence.
2. Add support sentences to explain what happened. Include phrases to keep things in order: **at first**, **then**, **after that**, **finally**, **in the middle of it**, **at last**.
3. Read your paragraph out loud to see if it reads smoothly. Make sure the events are in the correct order.
4. Make any needed changes, and then write your paragraph below.

Paragraphs will vary.

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Explaining What Happened

Directions: These pictures tell a story, but they're out of order. Follow these steps to write what happened.



1. On another sheet of paper, write a sentence explaining what is happening in each picture.
2. Put your sentences in order, and write a topic sentence.
3. Read the whole paragraph to yourself. Add words to show the order in which things happened.
4. Include adjectives, adverbs, and a simile or metaphor to make your story more interesting.
5. Write your paragraph below. Be sure to give it a title.

Paragraphs will vary.

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Writing Directions

Directions: must be written clearly. They are easiest to follow when they are in numbered steps. Each step should begin with a verb.

How to Peel a Banana:

1. Hold the banana by the stem end.
2. Find a loose edge of peel at the top.
3. Pull the peel down.
4. Peel the other sections of the banana in the same way.



Directions: Rewrite these directions, number the steps in order, and begin with verbs.

Finally, call the dog to come and eat. Then, you carry the filled dish to the place where the dog eats. The can or bag should be opened by you. First, clean the dog's food dish with soap and water. Then, get the dog food out of the cupboard. Put the correct amount of food in the dish.

1. **Clean the dog's food dish with soap and water.**
2. **Get the dog food out of the cupboard.**
3. **Open the can or bag.**
4. **Put the correct amount of food in the dish.**
5. **Carry the filled dish to the place where the dog eats.**
6. **Call the dog to come and eat.**

Directions: Follow these steps to write your own directions.

1. On another sheet of paper, draw three symbols, such as a square with a star in one corner and a dot in the center, or a triangle inside a circle with a spiral in the middle. Don't show your drawing to anyone.
2. On a second sheet of paper, write instructions to make the same drawing. Your directions need to be clear, in order, and numbered. Each step needs to begin with a verb.
3. Trade directions (but not pictures) with a partner. See if you can follow each other's directions to make the drawings.
4. Show your partner the drawing you made in step one. Does it look like the one he or she made following your directions? Could you follow your partner's directions? Share what was clear—or not so clear—about each other's instructions.

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Review

Directions: Write paragraphs to match the descriptions given. Begin with a topic sentence, and add support sentences that tell the events in order. Write the first draft of your paragraph on another sheet of paper. Read it to yourself, make any necessary changes, and then write it below.

1. Write a short paragraph to explain something that might happen on your way to school.
Answers will vary.

2. Write a paragraph that tells what you usually do during the first hour after you get up on a school day.

Directions: Write directions explaining how to brush your teeth. Include at least four steps. Make them as clear as possible. Begin each step with a verb. Write a rough draft on another sheet of paper first.

1. _____
2. _____
3. _____
4. _____

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Writing: Stronger Sentences

Sometimes the noun form of a word is not the best way to express an idea. Compare these two sentences:

They made preparations for the party.
They prepared for the party.

The second sentence, using **prepared** as a verb, is shorter and stronger.

Directions: Write one word to replace a whole phrase. Cross out the words you don't need. The first one has been done for you.

1. She ~~made a suggestion~~ **suggested** that we go on Monday.
2. They ~~arranged decorations around~~ **decorated** the room.
3. Let's ~~make a combination of~~ **combine** the two ideas.
4. I ~~have great appreciation for~~ **appreciate** what you did.
5. The buses ~~are using air transportation for~~ **transport** the classes.
6. The group ~~made an exploration of~~ **explored** the Arctic Circle.
7. Please ~~make a selection of~~ **select** one quickly.
8. The lake ~~is making a reflection of~~ **reflects** the trees.
9. The family ~~had a celebration of~~ **celebrated** the holiday.
10. Would you please ~~provide a solution for~~ **solve** this problem?
11. Rashid ~~made an imitation of~~ **imitated** his cat.
12. Please ~~give a definition of~~ **define** that word.
13. I ~~made an examination of~~ **examined** the broken bike.
14. Dexter ~~made an invitation for~~ **invited** us to join him.



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Writing: Descriptive Sentences

Descriptive sentences make writing more interesting to the reader. This is done by using adjectives, adverbs, prepositional phrases, similes, and metaphors.

Example:

The dog ran down the hill. The black and white beagle bounded down the steep embankment as though being chased by an invisible dragon.



Directions: Rewrite these sentences so they are more descriptive.

1. Parker likes collecting stamps.
Answers will vary.
2. Martina drove into town.
3. I enjoy working on the computer.
4. Riverside won the game.
5. Dinner was great.
6. My mom collects antiques.
7. The teacher likes my essay.
8. My brother received a scholarship for college.

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Writing: Different Points of View

A **fact** is a statement that can be proved. An **opinion** is what someone thinks or believes.

Directions: Write **F** if the statement is a fact or **O** if it is an opinion.

- F** The amusement park near our town just opened last summer.
- O** It's the best one in our state.
- F** It has a roller coaster that's 300 feet high.
- O** You're a chicken if you don't go on it.

Directions: Think about the last movie or TV show you saw. Write one fact and one opinion about it.

Fact: _____ **Answers will vary.**
Opinion: _____

In a story, a **point of view** is how one character feels about an event and reacts to it. Different points of view show how characters feel about the same situation.

What if you were of the mall with a friend and saw a shirt you really wanted on sale? You didn't bring enough money, so you borrowed ten dollars from your friend to buy the shirt. Then, you lost the money in the store!

Directions: Write a sentence describing what happened from the point of view of each person named below. Explain how each person felt.

- Yourself: _____ **Answers will vary.**
- Your friend: _____
- The store clerk who watched you look for the money: _____
- The person who found the money: _____



Reading Skills: It's Your Opinion

Your opinion is how you feel or think about something. Although other people may have the same opinion, their reasons will not be exactly the same because of their individuality.

When writing an opinion paragraph, it is important to first state your opinion. Then, in at least three sentences, support your opinion. Finally, end your paragraph by restating your opinion in different words.

Example:
I believe dogs are excellent pets. For thousands of years, dogs have guarded and protected their owners. Dogs are faithful and have been known to save the lives of those they love. Dogs offer unconditional love, as well as company for the quiet times in our lives. For these reasons, I feel that dogs make wonderful pets.

Directions: Write an opinion paragraph on whether you would or would not like to have lived in Colonial America. Be sure to support your opinion with at least three reasons.

_____ **Answers will vary.**

Writing Checklist

Reread your paragraph carefully.

- | | |
|---|--|
| <input type="checkbox"/> My paragraph makes sense. | <input type="checkbox"/> I have a good opening and ending. |
| <input type="checkbox"/> There are no jumps in ideas. | <input type="checkbox"/> I used correct spelling. |
| <input type="checkbox"/> I used correct punctuation. | <input type="checkbox"/> My paragraph is well-organized. |
| | <input type="checkbox"/> My paragraph is interesting. |

Persuasive Writing

To **persuade** means to convince someone that your opinion is correct. You need to offer reasons, facts, and examples to support your opinion.

Directions: Write two reasons or facts and two examples to persuade someone.

- Riding a bicycle "no-handed" on a busy street is a bad idea.
Reasons/Facts: _____ **Answers will vary.**
Examples: _____

- Taking medicine prescribed by a doctor for someone else is dangerous.
Reasons/Facts: _____
Examples: _____

- Learning to read well will help you in every other subject in school.
Reasons/Facts: _____
Examples: _____



Persuasive Writing

When trying to persuade someone, it helps to look at both sides of the issue. If you can understand both sides, you will have a better idea how to convince someone of your point of view.

Directions: Follow these steps to write two persuasive paragraphs about which form of transportation is better: airplanes or cars.

- On another sheet of paper, list three or four reasons why planes are better and three or four reasons why cars are better.
- Put each list of reasons in order. Often, persuasive writing is strongest when the best reason is placed last. Readers tend to remember the last reason best.
- Write topic sentences for each paragraph.
- Read each paragraph, and make any necessary changes so one sentence leads smoothly to the next.
- Write your paragraphs below.

Airplanes Are Better Transportation Than Cars _____

Cars Are Better Transportation Than Planes _____

- Write two more paragraphs on another sheet of paper. Select any topic. Write from both points of view.



Persuasive Writing

Writing is usually more persuasive if written from the reader's point of view.

If you made muffins to sell at a school fair, which of these sentences would you write on your sign?

- I spent a lot of time making these muffins. These muffins taste delicious!

If you were writing to ask your school board to start a gymnastics program, which sentence would be more persuasive?

- I really am interested in gymnastics. Gymnastics would be good for our school because both boys and girls can participate, and it's a year-round sport we can do in any weather.

In both situations, the second sentence is more persuasive because it is written from the reader's point of view. People care how the muffins taste, not how long it took you to make them. The school board wants to provide activities for all the students, not just you.

Directions: Write **R** if the statement is written from the reader's point of view or **W** if it's written from the writer's point of view.

- R** 1. If you come swimming with me, you'll be able to cool off.
- W** 2. Come swimming with me. I don't want to go alone.
- W** 3. Please write me a letter. I really like to get mail.
- R** 4. Please write me a letter. I want to hear from you.

Directions: Follow these steps to write an invitation on another sheet of paper to persuade people to move to your town or city.

- Think about reasons someone would want to live in your town. Make a list of all the good things there, like the schools, parks, annual parades, historic buildings, businesses where parents could work, scout groups, Little League, and so on. You might also describe your town's population, transportation, restaurants, celebrations, or even holiday decorations.
- Now, select three or four items from your list. Write a sentence (or two) about each one from the reader's point of view. For example, instead of writing "Our Little League team won the championship again last year," you could tell the reader, "You could help our Little League team win the championship again this year."
- Write a topic sentence to begin your invitation, and put your support sentences in order after it.
- Read your invitation out loud to another person. Make any needed changes, and copy the invitation onto a clean sheet of paper.



Review

Directions: Read the questions. Then, write one or two sentences about the situation from both points of view.

What if your neighbor had a dog that barked all night and kept you awake?
Your point of view: _____ **Answers will vary.**

Your neighbor's point of view: _____

What if the school board wanted to begin holding classes every Saturday during the school year?
For Saturday classes: _____
Against Saturday classes: _____

Directions: Rewrite these sentence so they make a stronger statement:
Jacob made a decision to take the test today. _____

Kisha had a dream about the test results. _____

Directions: Write two facts and two opinions about your math class.

Facts: _____

Opinions: _____

ANSWER KEY

Review

Directions: Write a persuasive essay convincing your town that a park is needed for older kids with equipment such as basketball courts, soccer and football fields, and a track. Be sure to end with a convincing statement.

Paragraphs will vary.

Directions: Write a descriptive paragraph about these topics.

My Pet _____

My Mom _____

Page 322

Describing Characters

When you write a story, your characters must seem like real people. You need to let your reader know not only how they look but how they act, and how they feel. You could just tell the reader that a character is friendly, scared, or angry, but your story will be more interesting if you show these feelings by the characters' actions.

Example:

Character: A frightened child

Adjectives and adverbs: red-haired, freckled, scared, lost, worried

Simile: as frightened as a mouse cornered by a cat

Action: He peeked between his fingers, but his mother was nowhere in sight.

Directions: Write adjectives, adverbs, similes, and/or metaphors that tell how each character feels. Then, write a sentence that shows how the character feels.

Answers will vary.

- an angry woman
Adjectives and adverbs: _____
Metaphor or simile: _____
Sentence: _____
- a disappointed man
Adjectives and adverbs: _____
Metaphor or simile: _____
Sentence: _____
- a hungry child
Adjectives and adverbs: _____
Metaphor or simile: _____
Sentence: _____
- a tired boy
Adjectives and adverbs: _____
Metaphor or simile: _____
Sentence: _____



Page 323

Setting the Scene

Where and when a story takes place is called the **setting**. As with characters, you can tell about a setting—or you can show what the setting is like. Compare these two pairs of sentences:

The sun was shining.
The glaring sun made my eyes burn.

The bus was crowded.
Page shouldered her way down the aisle, searching for an empty seat on the crowded bus.

If you give your readers a clear picture of your story's setting, they'll feel as if they're standing beside your characters. Include words that describe the sights, sounds, smells, feel, and even taste, if appropriate.

Directions: Write at least two sentences for each setting, clearly describing it for your readers.

Answers will vary.

- an empty kitchen early in the morning _____
- _____
- _____
- a locker room after a basketball game _____
- _____
- _____
- a dark living room during a scary TV movie _____
- _____
- _____
- a classroom on the first day of school _____
- _____
- _____
- a quiet place in the woods _____
- _____
- _____

Page 324

Creating a Plot

When you're writing a story, the **plot** is the problem your characters face and how they solve it. It's helpful to write a plot outline or summary before beginning a story.

In the beginning of a story, introduce the characters, setting, and problem.

Example: Oliver and Stella have never met their mother, who lives in another state. They decide they would like very much to meet her. They live with their grandmother and father. On the way home from school, they talk about how they can find and contact her.

In the middle, characters try different ways to solve the problem, usually failing at first.

Example: Oliver and Stella hurry home to ask their grandmother if she can help them find their mother. Their grandmother seems nervous and tells Oliver and Stella to discuss the matter with their father when he gets home from work. When Oliver and Stella's father comes home, they tell him about their plan. Their father is very quiet for several minutes. He says he needs some time to think about it and asks if he can let them know tomorrow. Oliver and Stella can hardly sleep that night. Getting through school the next day is tough as well. After school, Oliver and Stella wait by the window for their father's car to pull in the driveway.

In the end, the characters find a way to solve the problem. Not all stories have happy endings. Sometimes, the characters decide they can live with the situation the way it is.

Example: When their father pulls into the driveway, Oliver and Stella rush out to meet him. Their father hands them airplane tickets. Oliver and Stella hug each other. Then, they hug their father.

Directions: How do you think this story ends? Write a summary for the ending of this story.

Answers will vary.

Page 325

Writing Dialogue



When it was Megan's turn to present her book report to the class, she dropped all her notecards! Her face turned red, and she wished she was invisible, but all she could do was stand there and say what she could remember without her cards. It was awful!

Directions: Rewrite each paragraph below. Explain the same scenes and feelings using dialogue.

After class, Megan told her friend Ananya she had never been so embarrassed in her life. She saw everyone staring at her, and the teacher looked impatient, but there wasn't anything she could do. Sara assured Megan that no one disliked her because of what had happened.

Answers will vary.

When Megan got home, she told her mother about her book report. By then, she felt like crying. Her mother said not to get discouraged. In a couple of days, she would be able to laugh about dropping the cards.

When Megan's older brother Jed came home, he asked her what was wrong. She briefly told him and said she never was going back to school. He started laughing. Megan got mad because she thought he was laughing at her. Then, Jed explained that he had done almost the same thing when he was in sixth grade. He was really embarrassed, too, but not for long.



Page 328

Writing: Paraphrasing

Paraphrasing means "to restate something in your own words."

Directions: Write the following sentences in your own words. The first one has been done for you.

Answers will vary.

- He sat alone and watched movies throughout the cold, rainy night.
All through the damp, chilly evening, the boy watched television by himself.
- Many animals such as elephants, zebras, and tigers live in the grasslands.

- In art class, Sarah worked diligently on a clay pitcher, molding and shaping it on the pottery wheel.

- The scientists frantically searched for a cure for the new disease that threatened the entire world population.

- Quietly, the detective crept around the abandoned building, hoping to find the missing man.

- The windmill turned lazily in the afternoon breeze.

Page 329

Writing: Paraphrasing

Directions: Using synonyms and different word order, paraphrase the following paragraphs. The first one has been done for you.

Some of Earth's resources, such as oil and coal, can be used only once. We should always, therefore, be careful how we use them. Some materials that are made from natural resources, including metal, glass, and paper, can be reused. This is called recycling.



Many natural resources, including coal and oil, can be used only one time. For this reason, it is necessary to use them wisely. There are other materials made from resources of the Earth that can be recycled, or used again.
Materials that can be recycled include metal, glass, and paper.

Recycling helps to conserve the limited resources of our land. For example, there are only small amounts of gold and silver ores in the earth. If we can recycle these metals, less of the ores need to be mined. While there is much more aluminum ore in the earth, recycling is still important. It takes less fuel energy to recycle aluminum than it does to make the metal from ore. Therefore, recycling aluminum helps to conserve fuel.

Paragraphs will vary.

It is impossible to get minerals and fossil fuels from the earth without causing damage to its surface. In the past, people did not think much about making these kinds of changes to our planet. They did not think about how these actions might affect the future. As a result, much of the land around mines was left useless and ugly. This is not necessary, because such land can be restored to its former beauty.

Page 330

Writing: Summarizing

A **summary** is a brief retelling of the main ideas of a reading selection. To summarize, write the author's most important points in your own words.

Directions: Write a two-sentence summary for each paragraph.

The boll weevil is a small beetle that is native to Mexico. It feeds inside the seed pods, or bolls, of cotton plants. The boll weevil crossed into Texas in the late 1800s. It has since spread into most of the cotton-growing areas of the United States. The boll weevil causes hundreds of millions of dollars worth of damage to cotton crops each year.



Summary: _____

Answers will vary.

Each spring, female boll weevils open the buds of young cotton plants with their snouts. They lay eggs inside the buds, and the eggs soon hatch into wormlike grubs. The grubs feed inside the buds, causing the buds to fall from the plant. They eat their way from one bud to another. Several generations of boll weevils may be produced in a single season.



Summary: _____

The coming of the boll weevil to the United States caused tremendous damage to cotton crops. Yet, there were some good results, too. Farmers were forced to plant other crops. In areas where a variety of crops were raised, the land is in better condition than it would have been if only cotton had been grown.

Summary: _____

Page 331

Writing: Summarizing a Personal Narrative

Directions: Read the following narrative, and then follow the directions below and on page 333.

My Greatest Fear



I am scared of spiders. I realize this is not a logical fear, but I cannot help myself. I have been frightened by spiders since I was very young. For the following three reasons, spiders will never be pets of mine.

The first reason that I am scared of spiders is their appearance. I do not like their eight wispy, creepy legs. Spiders are never easily seen, but rather dark and unattractive. They are often hairy, and the mere thought of multiple eyeballs gives me shivers. Spiders are not well-behaved. They are sly and always ready to sneak up on innocent victims. Spiders have habits of scurrying across floors, dropping from ceilings, and dangling from cobwebs. One never knows what to expect from a spider.

Finally, I am scared of spiders due to a "spider experience" as a child. Having just climbed into bed, I noticed a particularly nasty-looking spider on the ceiling over my bed. My father came into the room, and it fell into bed with me. The thought of it crawling over me drove me from the bed shrieking. After that, I checked the ceiling nightly before getting into bed.

Many people love spiders. They are good for the environment and are certainly needed on our planet. However, because of my fear, irrational though it may be, I'd rather just avoid contact with arachnids.

Directions: Write a four-sentence summary of the narrative.

Answers will vary.

Page 332

Writing: Summarizing a Personal Narrative

Write the main idea of the second paragraph.

The author doesn't like spiders because of their appearance.

Write the main idea of the third paragraph.

The author doesn't like spiders because they are not well-behaved.

Write the main idea of the fourth paragraph.

The author doesn't like spiders because of an experience as a child.

Everyone has a fear of something. On another sheet of paper, write a five-paragraph personal narrative about a fear of your own. Use the following guide to help you organize your narrative.

Paragraph 1. State your fear.

Provide background information about fear.

Paragraph 2. State your first reason for fear.

Support this statement with at least three sentences.

Paragraph 3. State your second reason for fear.

Support this statement with at least three sentences.

Paragraph 4. State your third reason for fear.

Support this statement with at least three sentences.

Paragraph 5. Provide a summary of your narrative.

Restate your fear in different words from the opening sentence.



Page 333

Writing: Outlining

An **outline** is a skeletal description of the main ideas and important details of a reading selection. Making an outline is a good study aid. It is particularly useful when you must write a paper.

Directions: Read the paragraphs, and then complete the outline below.

Weather has a lot to do with where animals live. Cold-blooded animals have body temperatures that change with the temperature of the environment. Cold-blooded animals include snakes, frogs, and lizards. They cannot live anywhere the temperatures stay below freezing for long periods of time. The body temperatures of warm-blooded animals do not depend on the environment. Any animal with hair or fur—including dogs, elephants, and whales—is warm-blooded. Warm-blooded animals can live anywhere in the world where there is enough food to sustain them.



Some warm-blooded animals live where snow covers the ground all winter. These animals have different ways to survive the cold weather. Certain animals store up food to last throughout the snowy season. For example, the tree squirrel may gather nuts to hide in its home. Other animals hibernate in the winter. The ground squirrel, for example, stays in its hole.

Answers may vary. Possible answers shown.

Title: Animal Habitats

Main Topic: I. Weather has a lot to do with where animals live.

Subtopic: A. Cold-blooded animals' temperatures change with environment. They cannot live anywhere it stays below freezing too long.

Detail: 1. Warm-blooded animals' temperatures do not depend on the environment.

Subtopic: B. _____

Detail: 1. They can live anywhere there is food.
2. Some warm-blooded animals can live in the snow all winter.

Main Topic: II. Animals have different ways to survive the cold.

Subtopic: A. Animals have different ways to survive the cold.
Details: 1. Some animals store food for the winter.
2. Some animals hibernate in the winter.

Page 334

Review

Directions: Read the paragraph, and then follow the directions.

According to one estimate, 75 percent of all fresh water on Earth is in the form of ice. The polar regions of Earth are almost completely covered by ice. In some places, the ice is more than 8,000 feet thick. If all of this ice were spread out evenly, Earth would be covered with a 100-foot-thick layer of ice. Although ice is not an important source of fresh water today, it could be in the future. Some people have proposed towing large, floating masses of ice to cities to help keep up with the demand for fresh water.



1. Complete the outline of the paragraph. **Answers may vary. Possible answers shown.**

Title: Using Ice for Fresh Water

Main Topic: I. 75 percent of fresh water on Earth is ice.

Subtopics: A. The polar regions have the largest source of ice.

B. Ice could be an important source of fresh water in the future.

2. Check the most appropriate generalization:

Ice is the most plentiful source of fresh water.

Ice is important to the future.

3. Paraphrase the first sentence by restating it in your own words.

Answers will vary.

4. Is the author's purpose to inform, entertain, or persuade?

to inform

5. Where would you look to find information on the polar ice caps?

an encyclopedia and/or an almanac

Page 335

ANSWER KEY

Review

Directions: Read the paragraph, and then follow the directions.

Constellations are groups of stars that have been given names. They often represent an animal, person, or object. One of the easiest constellations to identify is the Big Dipper, which is shaped like a spoon. Once the Big Dipper is located, it is easy to see Cassiopeia (a W), the Little Dipper (an upside-down spoon), and the North Star. The North Star's scientific name is Polaris, and it is the last star in the handle of the Little Dipper. Other constellations include Orion the hunter, Gemini the twins, Canis Major the dog, and Pegasus the winged horse. Many ancient cultures, including the Greeks and Native Americans, used the position of the stars to guide them. They also planned daily life activities, such as planting, hunting, and harvesting, by the path the constellations made through the sky. For thousands of years, humans have gazed at the sky, fascinated by the millions of stars and imagining pictures in the night.



The Constellation Orion

1. Complete the outline of the paragraph. **Answers may vary. Possible answers shown.**
- Title: Constellations
Constellations are groups of stars that represent something.
- Main Topic: I. How to locate a few of the constellations
 Subtopics: A. The meanings of constellations to ancient Greeks and Native Americans
2. In three sentences, summarize the paragraph.
Answers will vary.
3. What is the author's purpose? to inform
4. Under which topics would you look to find more information on constellations?
Possible answers shown.
astronomy Greek mythology Native American legends

Page 336

Review

Directions: Imagine you are making a speech about one of your hobbies. Complete an outline of the speech.

Answers will vary.

Title: _____
 Main Topic: I. _____
 Subtopics: A. _____
 B. _____

Who is your audience? _____
 Is it appropriately written for that audience? _____
 Are you trying to inform, entertain, or persuade? _____

In the space below, write your speech in at least 100 words.

Page 337

Using the Right Resources

Directions: Decide where you would look to find information on the following topics. All of these resources are available either in print or online form.

- **almanac** — contains tables and charts of statistics and information
- **atlas** — collection of maps
- **dictionary** — contains alphabetical listing of words with their meanings, pronunciations, and origins
- **encyclopedia** — a book, website, or CD-ROM with general information on many subjects
- **library catalog** — library resource showing available books by topic, title or author
- **Readers' Guide to Periodical Literature** — an index of articles in magazines and newspapers
- **thesaurus** — contains synonyms and antonyms of words

- Answers may vary. Possible answers shown.**
1. What is the capital of the Netherlands? atlas, encyclopedia
 2. What form of government is practiced there? almanac, encyclopedia
 3. What languages are spoken there? almanac, encyclopedia
 4. What is the meaning of the word **indigenous**? dictionary, thesaurus
 5. Where would you find information on conservation? library catalog, Readers' Guide to Periodical Literature, encyclopedia
 6. What is a synonym for **calastrophe**? dictionary, thesaurus
 7. Where would you find a description of the play *Cats*? Readers' Guide to Periodical Literature, encyclopedia
 8. Where would you find statistics on the annual rainfall in the Sahara? almanac, encyclopedia
 9. What is the origin of the word **plentiful**? dictionary
 10. What are antonyms for the word **plentiful**? dictionary, thesaurus
 11. Where would you find statistics for the number of automobiles manufactured in the United States last year? almanac, encyclopedia

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Making Inferences: Reference Sources

Directions: In the box are four different kinds of reference sources. On the line next to each question, write which source you would use to find the information. Some information can be found in more than one reference.

- | encyclopedia | almanac | dictionary | thesaurus |
|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
1. A list of words that mean the same as **strong** thesaurus
 2. How much rain fell in Iowa in the year 1992 almanac
 3. What part of speech the word **porch** is dictionary
 4. How many different types of hummingbirds there are encyclopedia
 5. Weather patterns in Texas for the last 2 years almanac
 6. A list of words that mean the opposite of **cold** thesaurus
 7. Who invented the telescope encyclopedia
 8. How to pronounce the word **barometer** dictionary
 9. How many syllables the word **elephant** has thesaurus
 10. What the difference is between African and Asian elephants encyclopedia
 11. The population changes in New York between 1935 and 2015 almanac
 12. How fast a cheetah can run encyclopedia

Page 339

Conducting Research

Directions: Read the following questions. Use the Internet or library resources to answer them.

1. Choose two figures from history. Research them on www.biography.com. Write two facts you found about each person.
Answers will vary.
2. Use a resource book or online search to find out what Mohs scale of hardness is and what is at the top and bottom of the scale.
3. What were the last three winners of the Caldecott Medal for best illustrations in children's books?
4. Name three types of butterflies. List the source of your information.
5. Visit the site www.libraryspot.com. Write three questions that a classmate could answer by using this site.
6. Use a library catalog to search for books about rain forests. List the titles and call numbers of three books you find.

Page 340

Review

Directions: Read the following questions. Use the Internet or library resources to answer them.

1. Use a print or online children's almanac to find two facts about animals or the environment.
Answers will vary.
 2. How tall is the Eiffel Tower? _____
 3. List two sources you could use to find current information about the International Space Station.

 4. Use a print or online atlas to find out what five South American countries share a border with Bolivia.

- Directions:** Check the resource you would use to find the following information.
1. How to play checkers almanac dictionary an Internet search
 2. An example sentence using the word **breathe**
 encyclopedia thesaurus dictionary
 3. How many inches of snow fell in the Colorado Rockies last year
 an atlas an Internet search thesaurus
 4. How many syllables are in the word **justification**
 almanac thesaurus dictionary
 5. A synonym for **discontent**
 encyclopedia almanac thesaurus



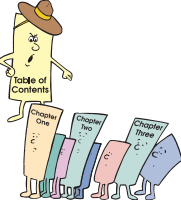
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Table of Contents

The **table of contents**, located in the front of books or magazines, tells a lot about what is inside.

A table of contents in books lists the headings and page numbers for each chapter. **Chapters** are the parts into which books are divided. Also listed are chapter numbers and the sections and subsections, if any. Look at the sample table of contents below:

Contents	
Chapter 1: Planting a garden.	2
Location	4
Fences	5
Chapter 2: Seeds.	8
Vegetables	9
Potatoes	9
Beans	10
Tomatoes	11
Fruits	13
Melons	13
Pumpkins	14
Chapter 3: Caring for a garden.	15
Weeding	16
Fertilizing	19



Directions: Using the table of contents above, answer the following questions.

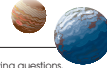
- How many chapters are in this book? 3
- What chapter contains information about things to plant? 2
- On what page does information about fences begin? 5
- What chapter tells you what you can use to help your garden grow better? 3
- What page tells you how to use fertilizer? 19
- What page tells you how far apart to plant pumpkin seeds? 14
- What is on page 11? information about tomatoes
- What is on page 4? information about garden locations

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Table of Contents

The table of contents below is divided into units and sections. **Units** are parts into which a book is divided. **Sections** are segments of each unit.

Table of Contents	
UNIT ONE: The Sun	1
A Bright Light	5
A Hot Star	10
UNIT TWO: The Planets	12
Mercury	15
Venus	21
Earth	27
Mars	32
Jupiter	39
Saturn	49
Uranus	54
Neptune	58
Dwarf Planets	61
UNIT THREE: Constellations	65
Big Dipper	67
Little Dipper	69
Polaris	71
Others	74
UNIT FOUR: Space Wonders	98
Comets	101
Meteoroids and Meteorites	105



Directions: Using the table of contents above, answer the following questions.

- How many units are in this book? 4
- Where would you find information about life on Mars? pages 32-38
- Where would you find information about the sun's heat and brightness? Unit 1
- What is on page 27? information about Earth
- Orion is a large group of stars, or constellation. Where would you find information about it? page 74
- What is on page 101? information about comets
- Where would you find information about the moons of Jupiter? pages 39-48
- How many pages in this book are about Earth? 5
- How many pages in this book are about Polaris? 3
- Where would you read about the Big Dipper? pages 67-68

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Table of Contents

In some magazines, the table of contents lists articles in numerical order. Other magazines' tables of contents are organized by subjects, by columns, and by features.

Subjects are the topics covered in the articles. A **feature** is a specific kind of article, such as an article about sports or cooking. **Feature** also has another meaning. A regular feature is something that appears in every issue, such as letters to the editor, movie reviews, and sports statistics. Some magazines also call regular features "departments."

Columns are another kind of regular feature published in every issue. Columns are often written by the same person each time. A person who writes a column is called a **columnist**.

Most magazines' tables of contents will also give you an idea of what a story is about. In online magazines, the table of contents often includes links that you can click to jump to a particular page or article.



Kids' Life	
Articles	Comics
10 Skateboarding in the U.S.A.	6 Little People
Read about kids from across the country	14 Skating Sam
and how they make the best of their boards.	30 Double Trouble
12 Summer Camp	Columns
Believe it or not, camp is fun!	7 Videos
20 Battle of Gettysburg	32 The Great Outdoors
It was a decisive clash in the American Civil War.	39 Fun and Famous
Believe it or not, camp is fun!	Departments
25 Snacks in a Flash	34 Your Health
Look at these treats you can make yourself.	36 Sports
29 Martin Luther King, Jr.	38 Letters to the Editor
The man who made people think twice.	

Directions: Answer these questions about Kids' Life magazine.

- On what page does the story about summer camp begin? 12
- List the titles of the departments in this magazine:
 - a) Your Health b) Sports c) Letters to the Editor
- Can you tell what the Battle of Gettysburg is by reading the table of contents? Yes (battle in the American Civil War)
- Is there any information in this magazine about in-line skating? No

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Table of Contents

The articles in this magazine are grouped according to subjects.

LIVING		
Table of Contents		
Exercise	Ride for a while with these experienced cyclists.	13
Discoveries	Walk with a man through the ditches where he discovered dinosaur bones.	27
Happenings	Earth Day becomes important once again.	5
Science	Find out why astronauts like their jobs.	45
Music	Tunes that are sung in the mountains.	33
People	Read about Joe Biden and how he got to be Vice President.	20
Sports	Learn about Jim Henson, the man behind the Muppets.	28
History	Why the Cleveland Indians might win the title.	42
History	A look at the lives of soldiers who were at Valley Forge.	39
Departments		
Living Well	6	Letters to the Editor 9
Comedy	12	Books 16
Movies	24	Snacks 36

Directions: Answer these questions about LIVING magazine.

- How many departments are in this issue of the magazine? 6
- Circle the topics that are regular features in LIVING.
 - Books Dinosaurs Cleveland Indians Vice Presidents
 - Comedy Living Well Snacks Earth Day
- What page would you look at if you wanted to see reviews of current movies? 24
- Is there any information in this magazine about football? No
- Who are the two people featured in this issue? Joe Biden and Jim Henson
- Is there anything in this issue about cycling? Yes
- Under what heading is it listed? Exercise

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Indexes

An **index** is an alphabetical listing of names, topics, and important words. It is found in the back of a book. An index lists every page on which these items appear. For example, in a book about music, dulcimer might be listed this way: Dulcimer 2, 13, 26, 38. Page numbers may also be listed like this: Guitars 18-21. That means that information about guitars begins on page 18 and continues through page 21. **Subject** is the name of the item in an index. **Sub-entry** is a smaller division of the subject. For example, apples would be listed under fruit.

Index	
N	See also planet names.
Neptune	27
NGC 5128 (galaxy)	39
Novas	32
O	See also planet names.
Observatories. See El Cajon	10
Orion rocket	43
P	See also planet names.
Polaris	71
Planet rings	24
Jupiter	27
Neptune	25
Saturn	26
Uranus	26
R	See also Galilean satellites
Rings	25
discovered by Greeks	7
outside the solar system	41
visible with the naked eye	9

Directions: Answer the questions about the index from this book about the solar system.

- On what pages is there information about Polaris? 35 and 36
- On what pages is information about Saturn's first ring found? 9 and 25
- What is on page 41? information about Project Ozma
- Where is there information about the pole star? pages 35 and 36
- What is on page 43? information about the Orion rocket
- On what page would you find information about planets that are visible to the eye? 9
- On what page would you find information about Jupiter's satellites? 24

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Indexes

Some magazines use indexes to guide their readers to information they contain.

Appetizers	
Bacon-Wrapped Halibut	92
Scallops with Sorrel and Tomato	116
Shrimp and Basil Beignets	116
Shrimp and Vegetable Spring Rolls with Hoisin and Mustard Sauces	85
Sweet Potato Ribbon Chips	136
Soups	
Lemongrass Soup, Hot, with Radishes and Chives	84
Roasted Garlic Soup	22
Vegetable Soup with Creamy Asparagus Flan	154
Salads, Salad Dressings	
Arugula Salad with Roasted Beets, Walnuts, and Daiton	158
Chicken, Fennel, Orange, and Olive Salad	24
Jicama Salad	81
Tomato, Onion, and Zucchini Salad	152
Walnut Vinaigrette	158

Directions: Answer the questions about the index from Bon Appetit magazine.

- How many kinds of salad are listed in this issue? 4
- What is the recipe that contains radishes? Lemongrass Soup
- Name the recipe found on page 24. Chicken, Fennel, Orange, and Olive Salad
- On what page would you find an appetizer that includes scallops? 116
- What is the name of this recipe? Scallops with Sorrel and Tomato
- Can you find any listings that contain halibut? Yes
- On what page is a recipe made from sweet potatoes? 136
- What is the name of this recipe? Sweet Potato Ribbon Chips
- For what part of a meal would it be served? Appetizer

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Review

FARMING

Table of Contents

9 Farmers of the Midwest — Read about small farmers still trying to survive in the business.

15 Farmers' Markets — Some farmers take their goods to town and sell them to the city folk.

26 Hay: The Cheapest Way — New technology helps produce bales of hay quicker and cheaper than in the past.

35 The Farm Family — Farming is a way of life, and everybody helps.


Departments

Letters to the Editor 5

Finances 7

High Tech 13

Haymaker 27



INDEX

Africa 6

Alabama 49

Alps 21, 25

Antarctica 10-12

Antarctic Circle 8-10

Arctic 12-14

Arctic Circle 14

Arctic Ocean 15

Asia 37

Athens 33

Atlantic Ocean 11

Baltic Sea 15, 30

Baltimore 51

Black Sea 37

Bombay 39

Brazil 59

British Isles 19

Buffalo 52

Big River 31

Cadiz 27

California 48

Cambridge 19

Cape of Good Hope 49

China 11, 41

Colorado River, Argentina 61

Colorado River, U.S.A. 62

Continents 2-3

Cuba 55

Directions: Answer the questions about the table of contents from Farming magazine.

- Is there any information about fashion in this magazine? No
- Is there any information about computers in this magazine? No
- Information about children on farms is probably included in which feature? The Farm Family
- Are there any features about animals in this magazine? No

Directions: Answer the questions about the index from this book about the world.

- On what pages would you find information about the Baltic Sea? 15 and 30
- What is listed on pages 2-3? Continents
- Where are the two Colorado Rivers? Argentina and USA or pages 61 and 62

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Review

Directions: Follow the instructions for each section.

Answers may vary. Possible answers shown.

- In your own words, explain why a table of contents is helpful.
Answers will vary.
- A table of contents is often divided into units and sections.
What is a unit? one part into which a book has been divided
What is a section? a smaller part of a unit
- What is the purpose of breaking a table of contents down into units and sections?
It helps make information in the book easier to find.
- What is an index?
An index is an alphabetical listing of names, topics and important words. It is found in the back of a book.
- What are the differences between a table of contents and an index?
The information contained in each may differ slightly. Indexes are organized alphabetically, and tables of contents are organized according to subject, column, or feature in numerical order. The table of contents is in front, the index, the back.
- Look at the table of contents in the front of this book. How many pages does the unit on Famous Athletes span?
9 pages

Page 349

Biographical Research

A **biography** is a written history of a person's life. Often, information for a biography can be obtained from an encyclopedia, especially if a person is famous.

Most libraries have a biography section in the nonfiction area of the children's section. In this area, books are usually listed by the last name of the subject of the biography. For example, a biography of Amelia Earhart would appear after one about Mary Cassatt but before one about Bill Gates (Cassatt, Earhart, Gates).

There are also many websites where you can find biographies of athletes, scientists, politicians, artists, inventors, explorers, and so on. Like any other Internet searches, you must be careful to use only reliable, trustworthy sites. Sites such as www.biography.com, www.history.com, www.factmonster.com, and www.kidsclick.org are good places to start. If you ever feel unsure about the reliability of a website, be sure to check with a teacher or parent.

Directions: Answer these questions.

- You are looking for biographies about the following people. Write the names in the order in which they would appear on the shelf in a library: Nat Turner, Eleanor Roosevelt, Wilma Rudolph, Wilbur Wright, Madeline Albright, and Jonas Salk.
Madeline Albright, Eleanor Roosevelt, Wilma Rudolph, Jonas Salk, Nat Turner, Wilbur Wright
- Where was Abraham Lincoln born? Use a biographical or online encyclopedia to find the answer.
Hodgenville, Kentucky
- Look up Anne Lindbergh in a biographical resource and write down the years of her birth and death.
1906-2001

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Biographical Research

Directions: Use the resources suggested on the previous page to research one of the following people. Begin writing your biographical report in the space provided. (If you need more room, use a separate sheet of paper.)

Research Topics:	
Steve Jobs	Barack Obama
Wangari Maathai	Jacques Cousteau
Maya Lin	Malala Yousafzai

Answers will vary.

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Biographical Research

Directions: Conduct research to find one fact about each of the following subjects. Use biographies or biographical encyclopedias you find at the library, online encyclopedias, or biographical Web sites.

Answers will vary.

- Sally Ride
- Frederick Douglass
- Wilson Bentley
- Frida Kahlo
- Charles Goodyear
- Serena Williams
- Jeremy Lin
- Stephen Hawking
- Cynthia Rylant

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Biographical Research

Directions: In the space provided, use print and/or online resources to write a report about one of the people listed below. Use additional paper, if necessary.

Maria Sharapova	Steven Spielberg	Hilary Clinton
John Glenn	Andrew Lloyd Webber	Jodie Foster

Answers will vary.

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Using the Library Catalog

Directions: Use the library catalog entries to answer the questions that follow.

Electric Ben: The Amazing Life and Times of Benjamin Franklin
Byrd, Robert.
Call Number: JB Franklin
New York: Dial Books for Young Readers, 2012.
ISBN: 978-0803737495
Subject: Franklin, Benjamin 1706-1790—Juvenile Literature
Inventors—United States—Biography—Juvenile Literature
Statesmen—United States—Biography—Juvenile Literature

1. What is the ISBN for Electric Ben? 978-0803737495
2. How many subjects is the book listed under? 3
3. What is the book's subtitle? The Amazing Life and Times of Benjamin Franklin
4. In what year was Electric Ben published? 2012

Dogs on Duty : Soldiers' Best Friends on the Battlefield and Beyond
Patent, Dorothy Hinshaw.
Call Number: J355.424
Bloomington USA: Children's, 2014.
ISBN: 978-0802736505
Subject: Dogs—War Use—Juvenile Literature

5. Who is the author of Dogs on Duty? Dorothy Hinshaw Patent
6. What is the book's call number? J355.424
7. Is this book intended for children or adults? How do you know?
Children; the subject Dogs is listed under Juvenile Literature

8. If you wanted to find more books on this subject, what search could you do in the library catalog?
Dogs, War Use

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Using the Library Catalog

A **library catalog** is a digital listing of the materials a library owns. Most libraries offer many search options. The most common ways to search are by title, author, subject, or keyword. If you don't find the book you are looking for at first, you may find it by changing your search. For example, if you can't find a book by title, try doing a keyword search using only one or two main words from the title.



Directions: Use a library catalog to answer the following questions.

1. What are the titles of three books by Roald Dahl?
Answers will vary.
2. Write the title of a children's book about volcanoes.
Answers will vary.
3. Write the author of one of the books in the Dear America series.
Answers will vary.
4. Who wrote the book Ice Island?
Sherry Shahan
5. In what year was The Voyage of Lucy P. Simmons published?
2012
6. Who is your favorite author? Write the author's name and the titles of two books he or she has published.
Answers will vary.
Jon Van Zyle
8. Do a keyword search for children's books about basketball. Write the titles and call numbers of two books that you find in your search results.
Answers will vary.
9. In what section of the library would you find Jean Laffitte: The Pirate Who Saved America?
biography
10. What is the call number of the book The Giant and How He Humbugged America?
J 974.765 MURP

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Review

Directions: Write T or F on the line beside each statement.

- T 1. A biography of Rosa Parks would come after a biography of Peyton Manning on a library shelf.
F 2. A library is the only source of information for biographies.
T 3. Most libraries shelve biographies in a separate section than other nonfiction books.



Directions: Write one biographical fact about each of the following people.

1. John F. Kennedy Answers will vary.
2. Maya Lin _____
3. Gustav Klimt _____
4. Alma Flor Ada _____
5. Tiger Woods _____

Directions: Use a library catalog to answer the following questions.

1. Who is the author of Same Sun Here? Silas House and Neela Vaswani
2. What is the ISBN for What Came from the Stars? 0544336364 or 978-0544336360
3. Who illustrated Guys Read: The Sports Pages? Dan Santat
4. Do a subject search for Civil War books. Write the call numbers and titles of two books in your search results.
Answers will vary.

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Poetry

Format:
Line 1: Name
Line 2: Name is a (metaphor)
Line 3: He/she is like (simile)
Line 4: He/she (three action words)
Line 5: He/she (relationship)
Line 6: Name

Example:
Jessica
Jessica is a joy.
She is like a playful puppy.
She tumbles, runs, and laughs.
She's my baby sister!
Jessica

Directions: Build a poem that describes a friend or relative by using similes, metaphors, and other words of your choice. Follow the form of the example poem.

Answers will vary.



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Poetry: Haiku

Haiku is a type of unrhymed Japanese poetry with three lines. The first line has five syllables. The second line has seven syllables. The third line has five syllables.

Example:



Directions: Write a haiku about a pet and another about a hobby you enjoy. Be sure to write a title on the first line. If you do not have a pet, write about a pet you might like to have.

Answers will vary.

Pet

Hobby

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Poetry: Diamanté

A **diamanté** is a poem in the shape of a diamond. Diamantés have seven lines with this format:

- Line 1: one-word noun, opposite of word in line 7
Line 2: two adjectives describing line 1
Line 3: three **ing** or **ed** words about line 1
Line 4: two nouns about line 1 and two nouns about line 7
Line 5: three **ing** or **ed** words about line 7
Line 6: two adjectives describing line 7
Line 7: one-word noun, opposite of word in line 1

Example:

child
happy, playful
running, singing, laughing
toys, games, job, family
working, driving, nurturing
responsible, busy
adult



Directions: Write a diamanté of your own.

Answers will vary.

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ANSWER KEY

Writing: Free Verse

Poems that do not rhyme and do not have a regular rhythm are called **free verse**. They often use adjectives, adverbs, similes, and metaphors to create word pictures.

My Old Cat

Curled on my bed at night,
Quietly happy to see me,
Soft, sleepy, relaxed,
A calm island in my life.



Directions: Write your own free verse. Use the guidelines for each poem.

1. Write a two-line free verse poem about a feeling. Compare it to some kind of food. For example, anger could be a tangle of spaghetti! Give your poem a title.

Answers will vary.

2. Think of how someone you know is like a color—happy like yellow, for example. Write a two-line free verse poem on this topic without naming the person. Don't forget a title.

3. Write a four-line free verse poem, like "My Old Cat," that creates a word picture of a day at school.

Writing: Limericks

A **limerick** is a short, humorous poem. Limericks are five lines long and follow a specific rhyme pattern. Lines 1, 2, and 5 rhyme, and lines 3 and 4 rhyme.

Example:

There once was a young fellow named Fred
Whose big muscles went right to his head,
"I'll make the girls sigh,
"Cause I'm quite a guy!"
But the girls all liked Ted more than Fred!



Directions: Complete the limericks.

1. There was a young lady from Kent

Whose drawings were quite excellent.

Answers will vary.

So to the big city she went.

2. I have a pet squirrel named Sonny

He ran up a tree

As far as could be

3. There once was a boy who yelled, "Fire!"

He just did not see

Writing: Acrostics

An **acrostic** is a poem that uses the letters of a word to begin each line. Read down, the first letter of each line spells the word. The poem tells something about the word that is spelled out.

Example:

In the grass or underground,
Now and then they fly around,
Stings and worms and butterflies,
Each has its own shape and size,
Caterpillars, gnats, a bee,
Take them all away from me!



Directions: Write acrostic poems for the words **shoes** and **phone**. Your poems can rhyme or be free verse.

Answers will vary.

S _____

H _____

O _____

E _____

S _____

P _____

H _____

O _____

N _____

E _____

Directions: Write an acrostic poem for your name or a word of your choice on another sheet of paper. Draw a picture for your poem.

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Friendly Letters

Directions: Study the format for writing a letter to a friend. Then, answer the questions.

your return address	4500 Waverly Road Cincinnati, Ohio 45241
date	June 23, 2015
greeting	Dear Josh,
body	How is your summer going? I am enjoying mine so far. I have been swimming twice already this week, and it is only Wednesday! I am glad there is a pool near our house. My parents said that you can stay overnight when your family comes for the 4th of July picnic. Do you want to? We can pitch a tent in the backyard and camp out. It will be a lot of fun! Please write back to let me know if you can stay over on the 4th. I will see you then!
closing signature	Your friend, Michael
your return address	Michael Delaney 4500 Waverly Road Cincinnati, Ohio 45241
main address	Josh Sommers 3350 West First Ave. Columbus, OH 43212

1. What words are in the greeting? Dear Josh
2. What words are in the closing? Your friend
3. On what street does the writer live? Waverly Road

Friendly Letters

Directions: Follow the format for writing a letter to a friend. Don't forget to address the envelope!

Answers will vary.

Place Value

Place value is the position of a digit in a number. A digit's place in a number shows its value. Numbers left of the decimal point represent **whole numbers**. Numbers right of the decimal point represent a part, or fraction, of a whole number. These parts are broken down into tenths, hundredths, thousandths, and so on.

Example:
3,443,221.621



Directions: Write the following number words as numbers.

1. Three million, forty-four thousand, six hundred twenty-one 3,044,621
2. One million, seventy-seven 1,000,077
3. Nine million, six hundred thousand, one hundred two 9,600,102
4. Twenty-nine million, one hundred three thousand, and nine tenths 29,103,000.9
5. One million, one hundred thousand, one hundred seventy-one, and thirteen hundredths 1,100,171.13

Directions: In each box, write the corresponding number for each place value.

1. 4,822,000.00 0 hundreds
2. 55,907,003.00 7 thousands
3. 190,641,225.07 6 hundred thousands
4. 247,308,211.59 5 tenths
5. 7,594,097.33 7 millions
6. 201,480,110.01 4 hundred thousands
7. 42,367,109,074.25 5 hundredths



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Place Value

The chart below shows the place value of each number.



trillions	billions	millions	thousands	ones
T	B	M	K	O
2	140	900	680	350

Word form: two trillion, one hundred forty billion, nine hundred million, six hundred eighty thousand, three hundred fifty

Directions: Draw a line to the correct value of each underlined digit. The first one is done for you.

- | | |
|----------------|--------------------|
| 643,000 | 2 hundred million |
| 13,294,125 | 9 billion |
| 678,446 | 40 thousand |
| 389,276 | 2 thousand |
| 15,000,089,145 | 2 billion |
| 78,764 | 7 hundred thousand |
| 612,689 | 9 thousand |
| 296,154,370 | 70 thousand |
| 82,256 | 10 million |
| 1,370 | 30 million |
| 853,622,175 | 7 hundred |
| 2,842,751,360 | 3 hundred |
| 163,456 | 2 hundred |
| 438,276,587 | 6 hundred thousand |

8,920,675

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Expanded Notation

Expanded notation is writing out the value of each digit in a number.

Example:
 $8,920,077 = 8,000,000 + 900,000 + 20,000 + 70 + 7$
Word form: Eight million, nine hundred twenty thousand, seventy-seven

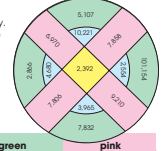
Directions: Write the following numbers using expanded notation.

- 20,769,033
 $20,000,000 + 700,000 + 60,000 + 9,000 + 30 + 3$
 - 1,183,541,029
 $1,000,000,000 + 100,000,000 + 80,000,000 + 3,000,000 + 500,000 + 40,000 + 1,000 + 20 + 9$
 - 776,003,091
 $700,000,000 + 70,000,000 + 6,000,000 + 3,000 + 90 + 1$
 - 5,920,100,808
 $5,000,000,000 + 900,000,000 + 20,000,000 + 100,000 + 800 + 8$
 - 14,141,543,760
 $10,000,000,000 + 4,000,000,000 + 100,000,000 + 40,000,000 + 3,000 + 700 + 60$
- Directions:** Write the following numbers.
- $700,000 + 900 + 60 + 7$ **700,967**
 - $35,000,000 + 600,000 + 400 + 40 + 2$ **35,600,442**
 - $12,000,000 + 700,000 + 60,000 + 4,000 + 10 + 4$ **12,764,014**
 - $80,000,000 + 8,000,000,000 + 400,000,000 + 80,000,000 + 10,000 + 400 + 30$
88,480,010,430
 - $4,000,000,000 + 16,000,000 + 30 + 2$ **4,016,000,032**

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Addition and Place Value

Directions: Add the problems below in which the digits with the same place value are lined up correctly. Then, cross out the problems in which the digits are not lined up correctly.



Find each answer in the diagram, and color that section.

yellow	blue	green	pink
$\begin{array}{r} 638 \\ 1,289 \\ + 665 \\ \hline 2,392 \end{array}$	$\begin{array}{r} 98 \\ 395 \\ + 2,750 \\ \hline \end{array}$	$\begin{array}{r} 4,326 \\ 82 \\ + 699 \\ \hline 5,107 \end{array}$	$\begin{array}{r} 589 \\ 95 \\ + 8,526 \\ \hline 9,210 \end{array}$
$\begin{array}{r} 579 \\ 146 \\ + 944 \\ \hline \end{array}$	$\begin{array}{r} 296 \\ 2,183 \\ + 75 \\ \hline 2,554 \end{array}$	$\begin{array}{r} 93,287 \\ 36 \\ + 7,831 \\ \hline 101,154 \end{array}$	$\begin{array}{r} 51 \\ 315 \\ + 7,492 \\ \hline 7,858 \end{array}$
$\begin{array}{r} 83 \\ 1,296 \\ + 62 \\ \hline \end{array}$	$\begin{array}{r} 938 \\ 3,297 \\ + 445 \\ \hline 4,680 \end{array}$	$\begin{array}{r} 1,849 \\ 964 \\ + 53 \\ \hline 2,866 \end{array}$	$\begin{array}{r} 198 \\ 77 \\ + 288 \\ \hline \end{array}$
$\begin{array}{r} 987 \\ 424 \\ + 3,156 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 850 \\ 3,900 \\ + 9,785 \\ \hline 10,221 \end{array}$	$\begin{array}{r} 850 \\ 42 \\ + 2,252 \\ \hline \end{array}$	$\begin{array}{r} 591 \\ 6,352 \\ + 27 \\ \hline 6,970 \end{array}$
$\begin{array}{r} 57 \\ 1,650 \\ + 66 \\ \hline \end{array}$	$\begin{array}{r} 773 \\ 3,118 \\ + 74 \\ \hline 3,965 \end{array}$	$\begin{array}{r} 64 \\ 7,430 \\ + 338 \\ \hline 7,832 \end{array}$	$\begin{array}{r} 919 \\ 52 \\ + 6,835 \\ \hline 7,806 \end{array}$

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Addition

Directions: Add the following numbers in your head without writing them out.

- | | | |
|--------------------------------|---------------------------------|---------------------------|
| 1. $17 + 33 =$ 50 | 2. $35 + 15 =$ 50 | 3. $75 + 25 =$ 100 |
| 4. $41 + 25 =$ 66 | 5. $27 + 23 =$ 50 | 6. $30 + 20 =$ 50 |
| 7. $12 + 18 =$ 30 | 8. $43 + 22 =$ 65 | 9. $16 + 34 =$ 50 |
| 10. $9 + 11 + 30 =$ 50 | 11. $29 + 21 + 40 =$ 90 | |
| 12. $14 + 16 + 20 =$ 50 | 13. $37 + 13 + 25 =$ 75 | |
| 14. $12 + 22 + 36 =$ 70 | 15. $19 + 21 + 57 =$ 97 | |
| 16. $21 + 24 + 25 =$ 70 | 17. $63 + 14 + 11 =$ 88 | |
| 18. $33 + 15 + 42 =$ 90 | 19. $25 + 15 + 60 =$ 100 | |
| 20. $30 + 20 + 10 =$ 60 | | |

14 + 12 + 7 + 20 + 9 + 18 = ?

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Addition Word Problems

Directions: Solve the following addition word problems.

- 100 students participated in a sports card show in the school gym. Brad brought his entire collection of 2,000 cards to show his friends. He had 700 football cards and 400 baseball cards. If the rest of his cards were baseball cards, how many baseball cards did he bring with him?
900 baseball cards
- Refreshments were set up in one area of the gym. Hot pretzels were a dollar, lemonade was 50 cents, fruit was 35 cents, and cookies were a quarter. If you purchased two of each item, how much money would you need?
\$4.20
- If took each student 30 minutes to set up for the card show and twice as long to put everything away. The show was open for 3 hours. How much time did each student spend on this event?
4 1/2 hours
- 450 people attended the card show. 55 were mothers of students, 67 were fathers, 23 were grandparents, 8 were aunts and uncles, and the rest were kids. How many kids attended?
297 kids
- Of the 100 students who set up displays, most of them sold or traded some of their cards. Jonas sold 75 cards, traded 15 cards, and collected \$225. Kevin only sold 15 cards, traded 81 cards, and collected \$100. Valentina traded 200 cards, sold 10, and earned \$35. Of those listed, how many cards were sold, how many were traded, and how much money was earned?
 sold **100** traded **296** earned \$ **360**



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Subtraction

Directions: Subtract the following numbers. When subtracting, begin on the right, especially if you need to regroup and borrow.

$\begin{array}{r} 549 \\ - 162 \\ \hline 387 \end{array}$	$\begin{array}{r} 823 \\ - 417 \\ \hline 406 \end{array}$	$\begin{array}{r} 370 \\ - 264 \\ \hline 126 \end{array}$	$\begin{array}{r} 648 \\ - 39 \\ \hline 569 \end{array}$
$\begin{array}{r} 700 \\ - 343 \\ \hline 357 \end{array}$	$\begin{array}{r} 475 \\ - 299 \\ \hline 176 \end{array}$	$\begin{array}{r} 603 \\ - 425 \\ \hline 178 \end{array}$	$\begin{array}{r} 354 \\ - 265 \\ \hline 89 \end{array}$
$\begin{array}{r} 1,841 \\ - 952 \\ \hline 889 \end{array}$	$\begin{array}{r} 2,597 \\ - 608 \\ \hline 1,989 \end{array}$	$\begin{array}{r} 6,832 \\ - 1,774 \\ \hline 5,058 \end{array}$	$\begin{array}{r} 9,005 \\ - 3,458 \\ \hline 5,547 \end{array}$
$\begin{array}{r} 23,342 \\ - 9,023 \\ \hline 14,249 \end{array}$	$\begin{array}{r} 53,790 \\ - 40,813 \\ \hline 12,977 \end{array}$	$\begin{array}{r} 29,644 \\ - 19,780 \\ \hline 9,864 \end{array}$	$\begin{array}{r} 35,726 \\ - 16,952 \\ \hline 18,767 \end{array}$
$\begin{array}{r} 109,432 \\ - 79,145 \\ \hline 30,287 \end{array}$	$\begin{array}{r} 350,907 \\ - 14,185 \\ \hline 336,722 \end{array}$	$\begin{array}{r} 217,523 \\ - 44,197 \\ \hline 173,326 \end{array}$	$\begin{array}{r} 537,411 \\ - 406,514 \\ \hline 130,897 \end{array}$

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ANSWER KEY

Subtraction Word Problems

Directions: Solve the following subtraction word problems.

- Last year, 28,945 people lived in Mike's town. This year, there are 31,889. How many people have moved in? **2,944 people**
- Brad earned \$227 mowing lawns. He spent \$168 on a new easel, paints, and other art supplies. How much money does he have left? **\$59**
- The school year has 180 days. Carrie has gone to 32 school days so far. How many more days does she have left? **148 days**
- Xavier wants a skateboard that costs \$128. He has saved \$47. How much more does he need? **\$81**
- To get to school, Imani walks 1,275 steps, and Carolyn walks 2,618 steps. How many more steps does Carolyn walk than Imani? **1,343 steps**
- Sydney has placed 91 of the 389 pieces in a new puzzle she purchased. How many more does she have left to finish? **298 pieces**
- From New York, it's 2,823 miles to Los Angeles and 1,327 miles to Miami. How much farther away is Los Angeles? **1,496 miles**
- Sheila read that a piece of carrot cake has 236 calories, but a piece of apple pie has 427 calories. How many calories will she save by eating the cake instead of the pie? **191 calories**
- Ichiro's summer camp costs \$223, while Sam's costs \$149. How much more does Tim's camp cost? **\$74**
- Last year, the nation's budget was \$45,000,000,000, but the nation spent \$52,569,342,000. How much more than its budget did the nation spend? **\$7,569,342,000**



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Multiplication

Directions: Multiply the following numbers. Be sure to keep the numbers aligned, and place a 0 in the ones place when multiplying by the tens digit.

Example: Correct: $\begin{array}{r} 55 \\ \times 15 \\ \hline 275 \\ 550 \\ \hline 825 \end{array}$ Incorrect: $\begin{array}{r} 55 \\ \times 15 \\ \hline 275 \\ 550 \\ \hline 330 \end{array}$

- $\begin{array}{r} 12 \\ \times 6 \\ \hline 72 \end{array}$
- $\begin{array}{r} 44 \\ \times 9 \\ \hline 396 \end{array}$
- $\begin{array}{r} 27 \\ \times 7 \\ \hline 189 \end{array}$
- $\begin{array}{r} 92 \\ \times 6 \\ \hline 552 \end{array}$
- $\begin{array}{r} 85 \\ \times 9 \\ \hline 765 \end{array}$
- $\begin{array}{r} 78 \\ \times 23 \\ \hline 1,872 \end{array}$
- $\begin{array}{r} 32 \\ \times 17 \\ \hline 544 \end{array}$
- $\begin{array}{r} 19 \\ \times 48 \\ \hline 874 \end{array}$
- $\begin{array}{r} 63 \\ \times 12 \\ \hline 756 \end{array}$
- $\begin{array}{r} 38 \\ \times 27 \\ \hline 2,926 \end{array}$
- $\begin{array}{r} 125 \\ \times 6 \\ \hline 750 \end{array}$
- $\begin{array}{r} 641 \\ \times 25 \\ \hline 16,025 \end{array}$
- $\begin{array}{r} 713 \\ \times 47 \\ \hline 33,511 \end{array}$
- $\begin{array}{r} 586 \\ \times 45 \\ \hline 26,370 \end{array}$
- $\begin{array}{r} 294 \\ \times 79 \\ \hline 23,226 \end{array}$

16. $20 \times 4 \times 7 =$ **560** 17. $9 \times 5 \times 11 =$ **495**
 18. $16 \times 2 \times 2 =$ **64** 19. $7 \times 6 \times 3 =$ **126**
 20. $33 \times 11 \times 3 =$ **1,089** 21. $2 \times 8 \times 10 =$ **160**

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Multiplying with Zeros

Directions: Multiply the following numbers. If a number ends with zero, you can eliminate it while calculating the rest of the answer. Then, count how many zeros you took off, and add them to your answer.

Example: $\begin{array}{r} 500 \\ \times 30 \\ \hline 27,500 \end{array}$ Take off 2 zeros, Add on 2 zeros. $\begin{array}{r} 599 \\ \times 5 \\ \hline 2,500 \end{array}$ Take off 2 zeros, Add on 2 zeros.

- $\begin{array}{r} 300 \\ \times 6 \\ \hline 1,800 \end{array}$
- $\begin{array}{r} 400 \\ \times 7 \\ \hline 2,800 \end{array}$
- $\begin{array}{r} 620 \\ \times 5 \\ \hline 3,100 \end{array}$
- $\begin{array}{r} 290 \\ \times 7 \\ \hline 2,030 \end{array}$
- $\begin{array}{r} 142 \\ \times 20 \\ \hline 2,840 \end{array}$
- $\begin{array}{r} 605 \\ \times 50 \\ \hline 25,250 \end{array}$
- $\begin{array}{r} 340 \\ \times 70 \\ \hline 23,800 \end{array}$
- $\begin{array}{r} 600 \\ \times 60 \\ \hline 36,000 \end{array}$
- $\begin{array}{r} 650 \\ \times 380 \\ \hline 209,000 \end{array}$
- $\begin{array}{r} 290 \\ \times 150 \\ \hline 43,500 \end{array}$
- $\begin{array}{r} 2,040 \\ \times 360 \\ \hline 734,400 \end{array}$
- $\begin{array}{r} 8,800 \\ \times 200 \\ \hline 1,760,000 \end{array}$
- Bruce traveled 600 miles each day of a 10-day trip. How far did he go during the entire trip? **6,000 miles**
- 30 children each sold 20 items for the school fundraiser. Each child earned \$100 for the school. How much money did the school collect? **\$3,000**
- $10 \times 40 \times 2 =$ **800** 16. $30 \times 30 \times 10 =$ **9,000**
- $100 \times 60 \times 10 =$ **60,000** 18. $500 \times 11 \times 2 =$ **11,000**
- $9 \times 10 \times 10 =$ **900** 20. $7,000 \times 20 \times 10 =$ **1,400,000**

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Division

In a division problem, the **dividend** is the number to be divided, the **divisor** is the number used to divide, and the **quotient** is the answer. To check your work, multiply your answer times the divisor, and you should get the dividend.

Example: $\begin{array}{r} 130 \leftarrow \text{quotient} \\ 4 \overline{)520} \leftarrow \text{dividend} \\ \underline{4} \\ 12 \\ \underline{12} \\ 00 \end{array}$ Check: $\begin{array}{r} 130 \leftarrow \text{quotient} \\ \times 4 \leftarrow \text{divisor} \\ \hline 520 \leftarrow \text{dividend} \end{array}$

Directions: Solve the following division problems.

- $3 \overline{)546}$ **182**
- $5 \overline{)720}$ **144**
- $2 \overline{)458}$ **229**
- $4 \overline{)796}$ **199**
- $7 \overline{)896}$ **128**
- $4 \overline{)128}$ **32**
- $4 \overline{)376}$ **94**
- $5 \overline{)225}$ **45**
- $3 \overline{)684}$ **228**
- $6 \overline{)924}$ **154**
- $25 \overline{)475}$ **19**
- $16 \overline{)768}$ **48**
- $14 \overline{)840}$ **60**
- $22 \overline{)418}$ **19**
- $21 \overline{)693}$ **33**

Directions: Solve these division problems in your head. Challenge yourself for speed and accuracy.

- $22 \div 2 =$ **11**
- $15 \div 3 =$ **5**
- $72 \div 9 =$ **8**
- $36 \div 4 =$ **9**
- $27 \div 9 =$ **3**
- $56 \div 8 =$ **7**
- $81 \div 9 =$ **9**
- $42 \div 6 =$ **7**
- $63 \div 9 =$ **7**
- $60 \div 5 =$ **12**
- $70 \div 10 =$ **7**
- $98 \div 7 =$ **14**
- $55 \div 5 =$ **11**
- $64 \div 8 =$ **8**
- $84 \div 3 =$ **28**

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Division Word Problems

In the example below, 368 is being divided by 4. 4 won't divide into 3, so move over one position, and divide 4 into 36. 4 goes into 36 nine times. Then, multiply 4 x 9 to get 36. Subtract 36 from 36. The answer is 0, less than the divisor, so 9 is the right number. Now bring down the 8, divide 4 into it, and repeat the process.

Example: $\begin{array}{r} 9 \\ 4 \overline{)368} \\ \underline{36} \\ 0 \end{array}$ $\begin{array}{r} 92 \\ 4 \overline{)368} \\ \underline{36} \\ 0 \end{array}$

To check your division, multiply $4 \times 92 = 368$.

Directions: Solve the following division problems. (For some problems, you will also need to add or subtract.)

- Kristy helped the kindergarten teacher put a total of 192 crayons into 8 boxes. How many crayons did they put into each box? **24 crayons**
- The scout troop has to finish a 12-mile hike in 3 hours. How many miles an hour will they have to walk? **4 miles**
- At her slumber party, Makayla had 4 friends and 25 pieces of candy. If she kept 5 pieces and divided the rest among her friends, how many pieces did each friend get? **5 pieces**
- Miles's book has 147 pages. He wants to read the same number of pages each day and finish reading the book in 7 days. How many pages should he read each day? **21 pages**
- Brian and 2 friends are going to share 27 marbles. How many will each person get? **9 marbles**
- To help the school, 5 parents agreed to sell 485 tickets for a raffle. How many tickets will each person have to sell to do his/her part? **97 tickets**
- Jorge is going to weed his neighbor's garden for \$3 an hour. How many hours does he have to work to make \$72? **24 hours**

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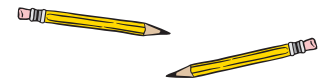
Equations

In an **equation**, the value on the left of the equal sign must equal the value on the right. Remember the order of operations: solve from left to right, multiply or divide numbers before adding or subtracting, and do the operation inside parentheses first.

Example: $6 + 4 - 2 - 4 \times 2$
 $10 - 2 = 8$
 $8 = 8$

Directions: Write the correct operation signs in the blanks to make accurate equations.

- $25 \quad + \quad 25 \quad \div \quad 2 = 100 \quad - \quad 75$
- $76 \quad + \quad 24 \quad \times \quad 3 = 150 \quad \times \quad 2$
- $140 \quad \div \quad 2 \quad \times \quad 10 = 600 \quad + \quad 50 \quad + \quad 150$
- $2,100 \quad - \quad 2,000 \quad + \quad 60 = 80 \quad \times \quad 2$
- $80 \quad \times \quad 8 \quad \div \quad 4 = 160 \quad + \quad 160 \quad - \quad 160$
- $(55 \quad \times \quad 100) \quad \div \quad 11 = (1,000 \quad \times \quad 2) \quad \div \quad 4$
- $137 \quad + \quad 81 \quad + \quad 52 = 3 \quad \times \quad 90$
- $3,000 \quad \div \quad 10 \quad \div \quad 10 = (600 \quad + \quad 300) \quad \div \quad 30$
- $(720 \quad + \quad 20) \quad \div \quad 4 = 37 \quad \times \quad 5$
- $(457 \quad + \quad 43) \quad - \quad 500 = (21 \quad + \quad 40) \times 0$



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Equations

Directions: Write the correct operation signs in the blanks to make accurate equations.

- $5 + 5 + 5 + 3 = 3 \times 5 + 0$
- $(50 \div 0) \times 2 = 25 \times 2 \times 2$
- $2 \times 2 \times 2 \times 2 = 2 \times 2 \times 2 \times 4$
- $(4 \times 5) + 5 + 5 = 2 \times 3 \times 5$
- $(25 \div 5) \times 2 \times 3 = 3 \times 6 \times 2 \times 5$
- $(125 \times 7) + 2 + 3 = 100 \times 2 \times 4 + 70 + 10$
- $(100 \times 10) \times 5 + 10 = 10 \times 5 \times 100 + 10$
- $35 \div 35 + 5 \times 2 = 5 \times 3 \times 2 \times 5$
- $(60 \div 2) \times 3 = 3 \times 3 \times 3 \times 0 + 15 + (5 \times 15)$
- $(120 \times 4) + 7 + 3 = (7 \times 7) \times (2 \times 5)$
- $(91 + 3 + 6) \times 3 = 2 \times 5 \times 1 \times 3 \times (2 \times 5)$
- $(16 \times 4) - 8 = 5 + 5 \times (3 \times 3) + 6$
- $0 \times 5 + 15 - 4 = 3 - 3 + 3 + 8$
- $16 \times 3 + 12 - (2 \times 20) = (2 \times 2) \times 6 + 10 - (2 \times 7)$
- $21 \div (3 \times 3) - 3 - 1 = 3 \div 1 \times 2 + 20$



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Rounding and Estimating

Rounding is expressing a number to the nearest whole number, ten, thousand, or other value. **Estimating** is using an approximate number instead of an exact one. When rounding a number, we say a country has 98,000,000 citizens instead of 98,347,425. We can round numbers to the nearest whole number, the nearest hundred, or the nearest million—whatever is appropriate.

Here are the steps: 1) Decide where you want to round the number. 2) If the digit to the right is less than 5, leave the digit at the rounding place unchanged. 3) If the digit to the right is 5 or more, increase the digit at the rounding place by 1.

Examples: 587 rounded to the nearest hundred is 600.
535 rounded to the nearest hundred is 500.
21,897 rounded to the nearest thousand is 22,000.
21,356 rounded to the nearest thousand is 21,000.

When we estimate numbers, we use rounded, approximate numbers instead of exact ones.

Example: A hamburger that costs \$1.49 and a drink that costs \$0.79 total about \$2.30 (\$1.50 plus \$0.80).

Directions: Use rounding and estimating to find the answers to these questions. You may have to add, subtract, multiply, or divide.

- Sofia is having a party and wants to fill 11 cups from a 67-ounce bottle of juice. About how many ounces should she pour into each cup? **6 ounces**
- Hannah studied 28 minutes every day for 4 days. About how long did she study in all? **120 minutes**
\$2.00
- About how much does this lunch cost? \$1.19 \$0.39 \$0.49
4. The numbers below show how long Frank spent studying last week. Estimate how many minutes he studied for the whole week.
Monday: 23 minutes Tuesday: 37 minutes Wednesday: 38 minutes Thursday: 12 minutes **110 minutes**
- One elephant at the zoo weighs 1,417 pounds, and another one weighs 1,789 pounds. About how much heavier is the second elephant? **400 pounds**
- Jordan studied a total of 122 minutes over 4 days. About how long did he study each day? **30 minutes**
- It's 549 miles to Dover and 345 miles to Albany. About how much closer is Albany? **200 miles**

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Rounding

Directions: Round each number, and then estimate the answer. You can use a calculator to find the exact answer.

Round to the nearest ten.	Estimate	Actual Answer
1. $86 \div 9 =$	9	9.56
2. $237 + 488 =$	730	725
3. $49 \times 11 =$	500	539
4. $309 + 412 =$	720	721
5. $625 - 218 =$	410	407
Round to the nearest hundred.		
6. $790 - 70 =$	700	720
7. $690 + 70 =$	7	9.86
8. $2,177 - 955 =$	1,200	1,222
9. $4,792 + 3,305 =$	8,100	8,097
10. $5,210 \times 90 =$	520,000	468,900
Round to the nearest thousand.		
11. $4,078 + 2,093 =$	6,000	6,171
12. $5,525 - 3,065 =$	3,000	2,460
13. $6,047 \div 2,991 =$	2	2.02
14. $1,913 \times 4,216 =$	8,000,000	8,065,208
15. $7,227 + 8,449 =$	15,000	15,676



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Decimals

A **decimal** is a number that includes a period called a **decimal point**. The digits to the right of the decimal point are a value less than one.



one whole



one tenth



one hundredth

The place value chart below helps explain decimals.

hundreds	tens	ones	tenths	hundredths	thousandths
6	3	2	4		
	4	7	0	5	9
		8	0	0	

A decimal point is read as "and." The first number 632.4 is read as "six hundred thirty-two and four tenths." The second number 47.05 is read as "forty-seven and five hundredths." The third number 8.009 is read as "eight and nine thousandths."

Directions: Write the decimals shown below. Two have been done for you.



1. **1.4**



2. **1.16**



3. **1.78**

- six and five tenths **6.5**
- twenty-two and nine tenths **22.9**
- thirty-six and fourteen hundredths **36.14**
- forty-seven hundredths **0.47**
- one hundred six and four tenths **106.4**
- seven and three hundredths **7.03**
- one tenth less than 0.6 **0.5**
- one hundredth less than 0.34 **0.33**
- one tenth more than 0.2 **0.3**

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Adding and Subtracting Decimals

When adding or subtracting decimals, place the decimal points under each other. That way, you add tenths to tenths, for example, not tenths to hundredths. Add or subtract beginning on the right, as usual. Carry or borrow numbers in the same way. Adding 0 to the end of decimals does not change their value, but sometimes makes them easier to add and subtract.

Examples: $99.40 + 6.81 = 106.21$, $0.064 + 0.470 = 0.534$, $3.56 - 0.09 = 3.47$, $6.83 - 2.14 = 4.69$

Directions: Solve the following problems.

- Write each set of numbers in a column and add them.
 - $2.56 + 0.6 + 76 =$ **79.16**
 - $93.5 + 23.06 + 1.45 =$ **118.01**
 - $3.23 + 91.34 + 0.85 =$ **95.42**
- Write each pair of numbers in a column and subtract them.
 - $7.89 - 0.56 =$ **7.33**
 - $34.56 - 6.04 =$ **28.52**
 - $7.6 - 3.24 =$ **4.36**
- In a relay race, Alice ran her part in 23.6 seconds, Xian did hers in 24.7 seconds, and Erin took 20.09 seconds. How many seconds did they take altogether? **68.39 seconds**
- Although Erin ran her part in 20.09 seconds today, yesterday it took her 21.85 seconds. How much faster was she today? **1.46 seconds**
- Add this grocery bill: potatoes—\$3.49; milk—\$2.09; bread—\$0.99; apples—\$2.30 **\$8.87**
- A yellow coat cost \$47.59, and a blue coat cost \$36.79. How much more did the yellow coat cost? **\$10.80**
- A box of Oat Boats cereal has 14.6 ounces. A box of Nut Crunch has 17.85 ounces. How much more cereal is in the Nut Crunch box? **3.25 ounces**
- The Oat Boats cereal has 4.03 ounces of sugar in it. Nut Crunch cereal has only 3.76 ounces. How much more sugar is in a box of Oats Boats? **0.27 ounces**



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Multiplying Decimals by Two-Digit Numbers

To multiply by a 2-digit number, just repeat the same steps. In the example below, first multiply 4 times 9, 4 times 5, and 4 times 3. Then, multiply 2 times 9, 2 times 5, and 2 times 3. You may want to place a 0 in the ones place to make sure this answer 718 is one digit to the left. Now, add 1,436 + 7,180 to get the final answer.

Example:	359×24	359×24	359×24	359×24	359×24
	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1436 \\ 7180 \\ \hline 8616 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1436 \\ 7180 \\ \hline 8616 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1436 \\ 7180 \\ \hline 8616 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1436 \\ 7180 \\ \hline 8616 \end{array}$	$\begin{array}{r} 359 \\ \times 24 \\ \hline 1436 \\ 7180 \\ \hline 8616 \end{array}$

When one or both numbers in a multiplication problem have decimals, check to see how many digits are right of the decimal. Then, place the decimal point the same number of places to the left in the answer. Here's how the example above would change if it included decimals:

	35.9×2.4	3.59×24
	$\begin{array}{r} 35.9 \\ \times 2.4 \\ \hline 143.6 \\ 718.0 \\ \hline 861.6 \end{array}$	$\begin{array}{r} 3.59 \\ \times 24 \\ \hline 14.36 \\ 71.80 \\ \hline 86.16 \end{array}$

The first example has one digit to the right of the decimal in 35.9 and two more in 0.24, so the decimal point is placed three digits to the left in the answer: 861.6. The second example has two digits to the right of the decimal in 3.59 and none in 24, so the decimal point is placed two digits to the left in the answer: 86.16. (Notice that you do not have to line up the decimals in a multiplication problem.)

Directions: Solve the following problems.

- Zoe wants to buy 3 T-shirts that cost \$15.99 each. How much will they cost altogether? **\$47.97**
- Ari is making \$8.50 an hour packing groceries. How much will he make in 8 hours? **\$68**
- Justin made 36 frozen smoothie pops and sold them all at the school carnival for \$0.75 each. How much would it cost to buy all 36 of them? **\$27**
- Last year, the carnival made \$467. This year it made 2.3 times as much. How much money did the carnival make this year? **\$1,074.10**
- Troy's car will go 21.8 miles on a gallon of gasoline. His motorcycle will go 1.7 times as far. How far will his motorcycle travel on one gallon of gas? **37.06 miles**



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ANSWER KEY

Multiplying Decimals

In some problems, you may need to add zeros in order to place the decimal point correctly.

Examples:



$$\begin{array}{r} 0.34 \\ \times 0.08 \\ \hline 0.0272 \end{array}$$

$$\begin{array}{r} 0.0067 \\ \times 4 \\ \hline 0.0268 \end{array}$$

$$\begin{array}{r} 0.046 \\ \times 0.07 \\ \hline 0.00322 \end{array}$$



Directions: Solve the following problems.

- $0.15 \times 0.02 = 0.003$
 - $0.67 \times 0.08 = 0.0536$
 - $7.3 \times 0.06 = 0.438$
 - $3.59 \times 0.08 = 0.2872$
 - $0.061 \times 0.014 = 0.000854$
 - $7.10 \times 0.042 = 0.2982$
 - $5.05 \times 0.08 = 0.404$
 - $8.75 \times 0.067 = 0.58625$
 - $0.0647 \times 0.3 = 0.01941$
 - $3.62 \times 0.003 = 0.01086$
 - $1.07 \times 0.05 = 0.0535$
 - $3.03 \times 0.07 = 0.2121$
 - $0.02 \times 0.02 = 0.0004$
 - $0.591 \times 0.003 = 0.01503$
 - $0.321 \times 0.09 = 0.02889$
16. The players and coaches gathered for refreshments after the soccer game. Of the 30 people there, 0.50 of them had energy drinks, 0.20 of them had fruit juice, and 0.30 of them had water. How many people had each type of drink?
- | | | |
|---|--------------|-----------|
|  | energy drink | <u>15</u> |
|  | fruit juice | <u>6</u> |
| | water | <u>9</u> |

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Dividing Decimals by Two-Digit Numbers

Dividing by a 2-digit divisor (34 in the example below) is very similar to dividing by a 1-digit divisor. In this example, 34 will divide into 78 twice. Then, multiply 34×2 to get 68. Subtract 68 from 78. The answer is 10, which is smaller than the divisor, so 2 was the right number. Now, bring down the next 8. 34 goes into 108 three times. Continue dividing as with a 1-digit divisor.

Example:

$$\begin{array}{r} 2 \\ 34 \overline{) 788} \\ \underline{68} \\ 108 \\ \underline{102} \\ 68 \\ \underline{68} \\ 0 \end{array}$$

$$\begin{array}{r} 23 \\ 34 \overline{) 788} \\ \underline{68} \\ 108 \\ \underline{102} \\ 68 \\ \underline{68} \\ 0 \end{array}$$

$$\begin{array}{r} 232 \\ 34 \overline{) 7888} \\ \underline{68} \\ 108 \\ \underline{102} \\ 68 \\ \underline{68} \\ 0 \end{array}$$



To check your division, multiply: $34 \times 232 = 7,888$.

When the dividend has a decimal, place the decimal point for the answer directly above the decimal point in the dividend.

Examples:

$$\begin{array}{r} 3.6 \\ 14 \overline{) 50.4} \end{array}$$

$$\begin{array}{r} 8.92 \\ 34 \overline{) 303.28} \end{array}$$

- Directions: Solve the following problems.
- $56 \overline{) 728} = 13$
 - $223 \overline{) 1863} = 8.35$
 - $3.62 \overline{) 255.44} = 70.26$
 - $4.71 \overline{) 82.36} = 17.49$
 - $5.4 \overline{) 18.580} = 3.44$
 - If socks cost \$8.97 for 3 pairs, how much does one pair cost? \$2.99
 - If granola bars are 6 for \$2.58, how much is one granola bar? \$0.43
 - You buy a bike for \$152.25 and agree to make 21 equal payments. How much will each payment be? \$7.25
 - You and two friends agree to spend several hours loading a truck. The truck driver gives you \$66.75 to share. How much will each person get? \$22.25
 - You buy 14 sandwiches, and the bill comes to \$32.06. How much did each sandwich cost? \$2.29

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Dividing with Zeros

Sometimes you have a remainder in division problems. You can add a decimal point and zeros to the dividend and keep dividing until you have the answer.

Example:

$$\begin{array}{r} 49 \\ 25 \overline{) 1,241} \\ \underline{1,00} \\ 241 \\ \underline{225} \\ 160 \\ \underline{150} \\ 100 \\ \underline{100} \\ 0 \end{array}$$

$$\begin{array}{r} 49.64 \\ 25 \overline{) 1,241.00} \\ \underline{1,00} \\ 241 \\ \underline{225} \\ 160 \\ \underline{150} \\ 100 \\ \underline{100} \\ 0 \end{array}$$



- Directions: Solve the following problems.
- $2 \overline{) 2.25} = 1.25$
 - $4 \overline{) 111.5} = 27.875$
 - $12 \overline{) 738} = 61.5$
 - $8 \overline{) 585} = 73.25$
 - $25 \overline{) 3,315} = 136.6$
 - Amelia's grandparents sent her a check for \$130 to share with her 7 brothers and sisters. How much will each of the 8 children get if the money is divided evenly? \$16.25
 - A vendor had 396 balloons to sell and 16 workers. How many balloons should each worker sell in order to sell out? 24.75 balloons
 - Eight of the workers turned in a total of \$754. How much did each worker collect if he or she sold the same number of items? \$94.25
 - A total of 744 tickets were collected from 15 amusement ride operators on the first day of the fair. If each ride required one ticket per person, and they each collected the same number of tickets, how many people rode each ride? 49.6 people
- Do you think that was possible? Why? No. You cannot divide a person.
- Five people were hired to clean up the area after the fair closed. They turned in a bill for 26 hours of labor. How many hours did each person work? 5.2 hours

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Dividing Decimals by Decimals

When a divisor has a decimal, eliminate it before dividing. If there is one digit right of the decimal in the divisor, multiply the divisor and dividend by 10. If there are two digits right of the decimal in the divisor, multiply the divisor and dividend by 100.

Multiply the divisor and dividend by the same number whether or not the dividend has a decimal. The goal is to have a divisor with no decimal.

Examples:

$$\begin{array}{r} 23 \overline{) 89} \times 10 = 23 \overline{) 890} \\ 4 \overline{) 35.67} \times 10 = 4 \overline{) 356.7} \end{array}$$

$$\begin{array}{r} 4.11 \overline{) 67.7} \times 100 = 411 \overline{) 6,770} \\ 0.34 \overline{) 789} \times 100 = 34 \overline{) 78,900} \end{array}$$

After removing the decimal from the divisor, solve the problem in the usual way.

- Directions: Solve the following problems.
- $3.5 \overline{) 10.15} = 2.9$
 - $6.7 \overline{) 415.4} = 62$
 - $0.21 \overline{) 924} = 4,400$
 - $73 \overline{) 50.37} = 0.69$
 - If a car travels 106.8 miles in 16.8 hours, what is the average speed in miles per hour the car travels? 63.5 m.p.h.
 - Mrs. Gutierrez plans to make chili on Friday night. She bought 1.5 lbs. of ground chicken for \$8.63. How much does the chicken cost per pound? \$5.75 per pound
 - Aidan spent a total of \$18.75 on rides at the fair. If each ticket cost \$1.25, how many rides did he go on? 15 rides
 - Mr. Washington bought 13.8 gallons of gas for \$39.61. What was the price of gas per gallon that day? \$2.87

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Decimals and Fractions

A fraction is a number that names part of something. The top number in a fraction is called the **numerator**. The bottom number is called the **denominator**. Since a decimal also names part of a whole number every decimal can also be written as a fraction. For example, 0.1 is read as "one tenth" and can also be written $\frac{1}{10}$. The decimal 0.56 is read as "fifty-six hundredths" and can also be written $\frac{56}{100}$.

Examples:

$$0.7 = \frac{7}{10} \quad 0.34 = \frac{34}{100} \quad 0.761 = \frac{761}{1,000} \quad \frac{5}{10} = 0.5 \quad \frac{58}{100} = 0.58 \quad \frac{729}{1,000} = 0.729$$

Even a fraction that doesn't have 10, 100, or 1,000 as the denominator can be written as a decimal. Sometimes you can multiply both the numerator and denominator by a certain number so the denominator is 10, 100, or 1,000. (You can't just multiply the denominator. That would change the amount of the fraction.)

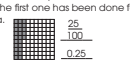
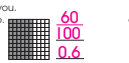
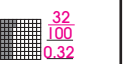
Examples:

$$\frac{3 \times 2}{5 \times 2} = \frac{6}{10} = 0.6 \quad \frac{4 \times 4}{25 \times 4} = \frac{16}{100} = 0.16$$

Other times, divide the numerator by the denominator.

Examples:

$$\frac{3}{4} = \frac{0.75}{4 \overline{) 3.00}} = 0.75 \quad \frac{5}{8} = \frac{0.625}{8 \overline{) 5.000}} = 0.625$$

- Directions: Follow the instructions below.
- For each square, write a decimal and a fraction to show the part that is colored. The first one has been done for you.
 -  $\frac{25}{100} = 0.25$
 -  $\frac{60}{100} = 0.6$
 -  $\frac{32}{100} = 0.32$
 - Change these decimals to fractions.
 - $0.6 = \frac{6}{10}$
 - $0.54 = \frac{54}{100}$
 - $0.751 = \frac{751}{1,000}$
 - $0.73 = \frac{73}{100}$
 - $0.592 = \frac{592}{1,000}$
 - $0.2 = \frac{2}{10}$
 - Change these fractions to decimals. If necessary, round the decimals to the nearest hundredth.
 - $\frac{3}{10} = 0.3$
 - $\frac{89}{100} = 0.89$
 - $\frac{473}{1,000} = 0.473$
 - $\frac{4}{5} = 0.8$
 - $\frac{35}{50} = 0.7$
 - $\frac{7}{9} = 0.78$
 - $\frac{1}{3} = 0.33$
 - $\frac{23}{77} = 0.30$
 - $\frac{12}{63} = 0.19$
 - $\frac{4}{16} = 0.25$

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Equivalent Fractions and the Lowest Term

Equivalent fractions name the same amount. For example, $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{3}{6}$ are exactly the same amount. They all mean half of something. (And they are all written as the same decimal: 0.5.) To find an equivalent fraction, multiply the numerator and denominator of any fraction by the same number.

Examples: $\frac{3 \times 3}{4 \times 3} = \frac{9}{12} \times 4 = \frac{36}{48}$ Thus, $\frac{3}{4}$, $\frac{9}{12}$ and $\frac{36}{48}$ are all equivalent fractions.

Most of the time, we want fractions in their lowest terms. It's easier to work with $\frac{1}{2}$ than $\frac{2}{4}$. To find a fraction's lowest term, instead of multiplying both parts of a fraction by the same number, divide.

Examples: $\frac{36 \div 12}{48 \div 12} = \frac{3}{4}$ The lowest term for $\frac{36}{48}$ is $\frac{3}{4}$.

If the numerator and denominator in a fraction can't be divided by any number, the fraction is in its lowest term. The fractions below are in their lowest terms.

Examples: $\frac{34}{21}$, $\frac{3}{8}$, $\frac{7}{9}$, $\frac{53}{90}$, $\frac{78}{83}$, $\frac{3}{6}$

- Directions: Follow the instructions below.
- Answers may vary. Possible answers shown.**
- Write two equivalent fractions for each fraction. Make sure you multiply the numerator and denominator by the same number. The first one is done for you.
 - $\frac{1 \times 3}{2 \times 3} = \frac{3}{6}$ $\frac{1 \times 4}{2 \times 4} = \frac{4}{8}$ b. $2 \times \frac{2}{3} = \frac{4}{3}$ $2 \times \frac{3}{4} = \frac{6}{4}$
 - $3 \times \frac{2}{5} = \frac{6}{5}$ $3 \times \frac{3}{5} = \frac{9}{5}$ d. $8 \times \frac{2}{8} = \frac{16}{8}$ $8 \times \frac{3}{8} = \frac{24}{8}$
 - Find the lowest terms for each fraction. Make sure your answers can't be divided by any other numbers. The first one has been done for you.
 - $\frac{2 \div 2}{36 \div 2} = \frac{1}{18}$ b. $\frac{12 \div 3}{25 \div 5} = \frac{4}{5}$ c. $\frac{12 \div 4}{16 \div 4} = \frac{3}{4}$
 - $\frac{3 \div 3}{9 \div 3} = \frac{1}{3}$ e. $\frac{25 \div 5}{45 \div 5} = \frac{5}{9}$ f. $\frac{11 \div 11}{44 \div 11} = \frac{1}{4}$

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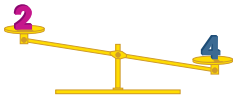
Greatest Common Factor

The **greatest common factor (GCF)** is the largest number that will divide evenly into a set of numbers. In the example, both numbers can be divided evenly by 2 and 4; therefore, 4 is the greatest common factor.

Example: 12 and 20 2, 4 (can be divided evenly into both numbers)
4 (greatest common factor)

Directions: Circle the greatest common factor for each pair of numbers.

- | | | | | |
|----------------|----|----|----|----|
| 1. 56 and 72 | 6 | 10 | 8 | 2 |
| 2. 45 and 81 | 7 | 5 | 9 | 3 |
| 3. 28 and 49 | 7 | 11 | 4 | 6 |
| 4. 10 and 35 | 3 | 5 | 9 | 7 |
| 5. 42 and 30 | 4 | 2 | 5 | 6 |
| 6. 121 and 33 | 12 | 9 | 4 | 11 |
| 7. 96 and 48 | 48 | 15 | 6 | 3 |
| 8. 12 and 132 | 2 | 10 | 12 | 9 |
| 9. 108 and 27 | 14 | 9 | 3 | 27 |
| 10. 44 and 32 | 4 | 6 | 8 | 10 |
| 11. 16 and 88 | 12 | 2 | 8 | 5 |
| 12. 72 and 144 | 9 | 11 | 7 | 72 |



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Least Common Multiple

The **least common multiple (LCM)** is the lowest possible multiple any pair of numbers have in common.

Examples: 2 and 4
The lowest common multiple is 4, because 4 is a multiple for each number and it is the lowest possible.

6 and 7
Multiples of 6 are 6, 12, 18, 24, 30, 36, 42.
Multiples of 7 are 7, 14, 21, 28, 35, 42.
42 is the lowest multiple that 6 and 7 have in common.

Directions: Find the least common multiple for each pair of numbers.

- | | | | |
|--------------------------|--|--|--|
| 1. 7 and 8 = <u>56</u> | | | |
| 2. 2 and 3 = <u>6</u> | | | |
| 3. 11 and 4 = <u>44</u> | | | |
| 4. 5 and 3 = <u>15</u> | | | |
| 5. 7 and 2 = <u>14</u> | | | |
| 6. 9 and 4 = <u>36</u> | | | |
| 7. 2 and 6 = <u>6</u> | | | |
| 8. 10 and 3 = <u>30</u> | | | |
| 9. 7 and 5 = <u>35</u> | | | |
| 10. 9 and 6 = <u>18</u> | | | |
| 11. 12 and 8 = <u>24</u> | | | |
| 12. 15 and 3 = <u>15</u> | | | |

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Comparing Decimals and Fractions

The symbol $>$ means "greater than." The number on its left is greater than that on its right. The symbol $<$ means "less than." The number on its left is less than that on its right. An equal sign, $=$, shows the same value on each side.

Directions: Use the sign $>$, $<$, or $=$ to make each statement true.

- | | |
|-----------------------------|----------------------------|
| 1. 0.4 $<$ $\frac{1}{2}$ | 2. 1.25 $<$ $\frac{5}{4}$ |
| 3. 0.7 $<$ $\frac{4}{5}$ | 4. 0.68 $<$ $\frac{5}{7}$ |
| 5. 0.1 $>$ $\frac{1}{10}$ | 6. 0.45 $<$ $\frac{1}{2}$ |
| 7. 0.75 $>$ $\frac{3}{4}$ | 8. 0.6 $<$ $\frac{3}{5}$ |
| 9. 0.54 $>$ $\frac{1}{2}$ | 10. 0.8 $>$ $\frac{4}{5}$ |
| 11. 0.25 $>$ $\frac{1}{7}$ | 12. 1.8 $>$ $\frac{12}{7}$ |
| 13. 0.625 $>$ $\frac{4}{5}$ | 14. 0.33 $<$ $\frac{1}{3}$ |

15. Jenna looked carefully at the labels on two different types of pretzels. The pretzel rods had $\frac{3}{4}$ pound in the package. The package of mini pretzels claimed it had 0.67 pounds of pretzels inside. Were the pretzel rods $<$, $>$, or $=$ to the mini pretzels?



$$\frac{3}{4} > 0.67$$

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Mixed Numbers and Improper Fractions

A **mixed number** is a whole number and a fraction, such as $1\frac{1}{2}$. An **improper fraction** has a numerator that is larger than its denominator, such as $\frac{5}{3}$. To write an improper fraction as a mixed number, divide the numerator by the denominator. The quotient becomes the whole number, and the remainder becomes the fraction.

Examples: $\frac{16}{3} = 5\frac{1}{3}$ $\frac{28}{5} = 5\frac{3}{5}$

To change a mixed number into an improper fraction, multiply the whole number by the denominator and add the numerator.

Examples: $4\frac{1}{3} = 4 \times 3 + 1 = 13$ $\frac{13}{3}$
 $8\frac{4}{8} = 8 \times 7 + 4 = 60$ $\frac{60}{7}$

Directions: Follow the instructions below.

1. Change the improper fractions to mixed numbers, and reduce to lowest terms. Use another sheet of paper if necessary. The first one has been done for you.
- a. $\frac{34}{5} = 6\frac{4}{5}$ b. $\frac{5}{3} = 1\frac{2}{3}$ c. $\frac{23}{8} = 2\frac{7}{8}$ d. $\frac{89}{3} = 29\frac{2}{3}$
- e. $\frac{45}{9} = 5$ f. $\frac{32}{5} = 6\frac{2}{5}$ g. $\frac{13}{7} = 1\frac{6}{7}$
- h. $\frac{24}{9} = 2\frac{2}{3}$ i. $\frac{31}{2} = 15\frac{1}{2}$ j. $\frac{84}{23} = 3\frac{15}{23}$
2. Change these mixed numbers into improper fractions. The first one has been done for you.
- a. $4\frac{6}{7} = 4 \times 7 + 6 = 34$ b. $2\frac{1}{9} = \frac{19}{9}$ c. $5\frac{4}{5} = \frac{29}{5}$ d. $12\frac{1}{4} = \frac{49}{4}$
- e. $6\frac{7}{8} = \frac{55}{8}$ f. $3\frac{1}{11} = \frac{42}{11}$ g. $8\frac{3}{12} = \frac{99}{12}$ h. $\frac{6}{14} = \frac{20}{14}$ i. $4\frac{2}{3} = \frac{14}{3}$ j. $9\frac{4}{15} = \frac{139}{15}$

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Adding Fractions

When adding fractions, if the denominators are the same, simply add the numerators. When the result is an improper fraction, change it to a mixed number.

Examples: $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ $\frac{3}{9} + \frac{7}{9} = \frac{10}{9} = 1\frac{1}{9}$

If the denominators of fractions are different, change them so they are the same. To do this, find equivalent fractions. In the first example below, $\frac{1}{2}$ and $\frac{3}{8}$ have different denominators, so change $\frac{1}{2}$ to the equivalent fraction $\frac{4}{8}$. Then, add the numerators. In the second example, $\frac{2}{3}$ and $\frac{5}{8}$ also have different denominators. Find a denominator both 7 and 3 divide into. The lowest number they both divide into is 21. Multiply the numerator and denominator of $\frac{2}{3}$ by 7 to get the equivalent fraction $\frac{14}{21}$. Then, multiply the numerator and denominator of $\frac{5}{8}$ by 3 to get the equivalent fraction $\frac{15}{24}$.

Examples: $\frac{1}{2} + \frac{3}{8} = \frac{4}{8} + \frac{3}{8} = \frac{7}{8}$ $\frac{2}{3} + \frac{5}{8} = \frac{14}{21} + \frac{15}{24} = \frac{29}{21} = 1\frac{8}{21}$

Directions: Solve the following problems. Find equivalent fractions when necessary.

1. $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$ 2. $\frac{7}{8} + \frac{1}{8} = \frac{8}{8} = 1$ 3. $\frac{1}{9} + \frac{2}{9} = \frac{3}{9} = \frac{1}{3}$ 4. $\frac{2}{15} + \frac{1}{15} = \frac{3}{15} = \frac{1}{5}$ 5. $\frac{2}{3} + \frac{1}{3} = 1$
6. Cora is making some soup. She needs $\frac{3}{4}$ cup diced yellow onion and $\frac{1}{4}$ cup chopped green onion. How much onion does she need altogether? $\frac{3}{4} + \frac{1}{4} = 1$ cup
7. Henry is painting a wall. Yesterday, he painted $\frac{1}{2}$ of it. Today, he painted $\frac{1}{3}$ of it. How much has he painted altogether? $\frac{1}{2} + \frac{1}{3} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$
8. Zahra ate $\frac{1}{4}$ of a pie. Her father ate $\frac{1}{4}$ of it. How much did they eat altogether? $\frac{1}{4} + \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$

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Subtracting Fractions

Subtracting fractions is very similar to adding them, in that the denominators must be the same. If the denominators are different, use equivalent fractions.

Examples: $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ $\frac{2}{5} - \frac{1}{5} = \frac{1}{5}$ $\frac{3}{8} - \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$

Adding and subtracting mixed numbers are also similar. Often, though, change the mixed numbers to improper fractions. If the denominators are different, use equivalent fractions.

Examples: $2\frac{3}{4} - \frac{1}{4} = 2\frac{2}{4} = 2\frac{1}{2}$ $3\frac{4}{14} - \frac{1}{14} = 3\frac{3}{14}$ $1\frac{15}{7} - 2\frac{2}{7} = 1\frac{13}{7} = 2\frac{6}{7}$

Directions: Solve the following problems. Use equivalent fractions and improper fractions where necessary.

1. $\frac{6}{7} - \frac{2}{7} = \frac{4}{7}$ 2. $1\frac{2}{9} - \frac{4}{9} = 1\frac{-2}{9} = \frac{8}{9}$ 3. $2\frac{3}{6} - \frac{1}{6} = 2\frac{2}{6} = 2\frac{1}{3}$ 4. $\frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$ 5. $2\frac{1}{3} - \frac{2}{3} = 1\frac{1}{3}$
6. Leah promised to weed the flower garden for $\frac{1}{2}$ hours this morning. So far she has pulled weeds for $\frac{1}{4}$ of an hour. How much longer does she have to work? $\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$ hour
7. Vijay started out with $1\frac{1}{2}$ gallons of paint. He used $\frac{3}{8}$ gallon of the paint on his boat. How much paint is left? $1\frac{1}{2} - \frac{3}{8} = 1\frac{4}{8} - \frac{3}{8} = 1\frac{1}{8}$ gallon
8. A certain movie lasts $2\frac{1}{2}$ hours. Tess has already watched it for $\frac{5}{6}$ hours. How much longer is the movie? $2\frac{1}{2} - \frac{5}{6} = 2\frac{3}{6} - \frac{5}{6} = 2\frac{-2}{6} = 1\frac{4}{6} = 1\frac{2}{3}$ hours
9. Nico didn't finish $\frac{1}{3}$ of the math problems on a test. He made mistakes on $\frac{1}{6}$ of the problems. The rest he answered correctly. What fraction of the problems did he answer correctly? $1 - \frac{1}{3} - \frac{1}{6} = \frac{6}{6} - \frac{2}{6} - \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$

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ANSWER KEY

Multiplying Fractions

To multiply two fractions, multiply the numerators, and then multiply the denominators. If necessary, change the answer to its lowest term.

Examples: $\frac{3}{4} \times \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$ $\frac{1}{8} \times \frac{4}{5} = \frac{4}{40} = \frac{1}{10}$

To multiply a whole number by a fraction, first write the whole number as a fraction (with 1 as the denominator). Then, multiply as above. You may need to change an improper fraction to a mixed number.

Examples: $\frac{2}{3} \times \frac{4}{1} = \frac{8}{3} = 2\frac{2}{3}$ $\frac{3}{7} \times \frac{4}{1} = \frac{12}{7} = 1\frac{5}{7}$



Directions: Solve the following problems, writing answers in their lowest terms.

- $\frac{1}{5} \times \frac{2}{3} = \frac{2}{15}$
- $2\frac{1}{3} \times \frac{4}{7} = \frac{4}{21}$
- $\frac{2}{8} \times \frac{3}{5} = \frac{3}{20}$
- $\frac{2}{6} \times \frac{1}{2} = \frac{2}{12} = \frac{1}{6}$
- Tim lost $\frac{2}{3}$ of his marbles. If he had 56 marbles, how many did he lose? **7 marbles**
- Drew is making $\frac{3}{4}$ of a recipe for spaghetti sauce. How much will he need of each ingredient below?
 - $\frac{1}{2}$ cups water = **$\frac{3}{4}$ cups**
 - 2 cups tomato paste = **$1\frac{3}{4}$ cups**
 - $\frac{1}{4}$ teaspoon oregano = **$\frac{3}{16}$ teaspoon**
 - $\frac{1}{2}$ teaspoons salt = **3 teaspoons**
- Carrie bought 2 dozen bagels and asked for $\frac{1}{2}$ of them to be honey grain. How many were honey grain? **18 bagels**
- Sofia let her hair grow 14 inches long and then had $\frac{1}{2}$ of it cut off. How much was cut off? **$3\frac{1}{2}$ inches**
- Ethan has finished $\frac{3}{4}$ of 40 math problems. How many has he done? **35 problems**
- If Jaya's cat eats $\frac{2}{3}$ can of cat food every day, how many cans should Jaya buy for a week? **$4\frac{2}{3}$ cans, or $\frac{14}{3}$ cans**

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Dividing Fractions

Reciprocals are two fractions that, when multiplied together, make 1. To divide a fraction by a fraction, turn one of the fractions upside down and multiply. The upside-down fraction is a reciprocal of its original fraction. If you multiply a fraction by its reciprocal, you always get 1.

Examples of reciprocals: $\frac{2}{3} \times \frac{3}{2} = 1$ $\frac{9}{11} \times \frac{11}{9} = \frac{99}{99} = 1$

Examples of dividing by fractions: $\frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$ $\frac{3}{5} \div \frac{2}{7} = \frac{3}{5} \times \frac{7}{2} = \frac{21}{10} = 2\frac{1}{10}$ $\frac{7}{10} \div \frac{7}{5} = \frac{7}{10} \times \frac{5}{7} = \frac{35}{70} = \frac{1}{2}$

To divide a whole number by a fraction, first write the whole number as a fraction with a denominator of 1. (Write a mixed number as an improper fraction.) Then, finish the problem as explained above.

Examples: $4 \div \frac{2}{6} = \frac{4}{1} \times \frac{6}{2} = \frac{24}{2} = 12$ $3\frac{1}{2} \div \frac{2}{5} = \frac{7}{2} \times \frac{5}{2} = \frac{35}{4} = 8\frac{3}{4}$

Directions: Solve the following problems, writing answers in their lowest terms. Change any improper fractions to mixed numbers.

- $\frac{1}{3} \div \frac{2}{5} = \frac{5}{6}$
- $\frac{6}{7} \div \frac{1}{3} = \frac{18}{7} = 2\frac{4}{7}$
- $3 \div \frac{3}{4} = \frac{12}{3} = 4$
- $\frac{1}{4} \div \frac{2}{3} = \frac{3}{8}$
- Judy has 8 candy bars. She wants to give $\frac{1}{3}$ of a candy bar to everyone in her class. Does she have enough for all 24 students? **Yes**
- A big jar of glue holds $3\frac{3}{4}$ cups. How many little containers that hold $\frac{1}{4}$ cup each can you fill? **14 containers**
- A container holds 27 ounces of frozen yogurt. How many 4½-ounce servings is that? **6 servings**
- It takes $2\frac{1}{2}$ teaspoons of powdered mix to make 1 cup of hot chocolate. How many cups can you make with 45 teaspoons of mix? **18 cups**
- Each cup of hot chocolate also takes $\frac{1}{2}$ cup of milk. How many cups of hot chocolate can you make with 12 cups of milk? **18 cups**

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Review

Directions: Follow the instructions below.

- Write each of these decimals as fractions.
 - a. $0.43 = \frac{43}{100}$
 - b. $0.6 = \frac{6}{10}$
 - c. $0.783 = \frac{783}{1,000}$
 - d. $0.91 = \frac{91}{100}$
- Write each of these fractions as decimals, rounding them to the nearest hundredth.
 - a. $\frac{3}{10} = 0.3$
 - b. $\frac{4}{7} = 0.57$
 - c. $\frac{3}{9} = 0.33$
 - d. $\frac{64}{100} = 0.64$
- Write two equivalent fractions for each of these.
 - a. $\frac{2}{6} = \frac{1}{3}, \frac{4}{12}$
 - b. $\frac{1}{4} = \frac{2}{8}, \frac{4}{16}$
 - c. $\frac{5}{8} = \frac{10}{16}, \frac{15}{24}$
- Change these fractions into their lowest terms.
 - a. $\frac{4}{6} = \frac{2}{3}$
 - b. $\frac{6}{18} = \frac{1}{3}$
 - c. $\frac{5}{10} = \frac{1}{2}$
 - d. $\frac{9}{24} = \frac{3}{8}$
- Change these improper fractions into mixed numbers.
 - a. $\frac{30}{9} = 3\frac{4}{3}$
 - b. $\frac{46}{3} = 15\frac{1}{3}$
 - c. $\frac{38}{6} = 6\frac{1}{3}$
 - d. $\frac{18}{4} = 4\frac{1}{2}$
- Change these mixed numbers into improper fractions.
 - a. $3\frac{1}{6} = \frac{19}{6}$
 - b. $7\frac{3}{8} = \frac{59}{8}$
 - c. $4\frac{2}{7} = \frac{30}{7}$
 - d. $8\frac{1}{9} = \frac{73}{9}$
- George has written $1\frac{1}{2}$ pages of a report that is supposed to be $3\frac{3}{8}$ pages long. How much more does he have to write? **$2\frac{3}{8}$ pages**
- Mia ate $\frac{3}{4}$ of half a pizza. How much of the whole pizza did she eat? **$\frac{3}{16}$**
- Always family is driving to Los Angeles. They drove $\frac{2}{5}$ of the way the first day and $\frac{1}{5}$ of the way the second day. How much of the trip have they completed so far? **$\frac{11}{30}$**
- Antonio gets \$6 a week for his allowance. He saved $\frac{1}{3}$ of it last week and $\frac{1}{5}$ of it this week. How much money did he save in these 2 weeks? **\$5**
- Of 32 students in one class, $\frac{1}{4}$ have a brother or sister. How many students are only children? **12 students**
- In one class, $\frac{1}{5}$ of the students were born in January, $\frac{1}{10}$ in February, and $\frac{1}{10}$ in March. How much of the class was born in these 3 months? **$\frac{2}{5}$**

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Review

Directions: Follow the instructions below.

- Add.**
- $\frac{4}{16} + \frac{5}{8} = \frac{14}{16} = \frac{7}{8}$
 - $\frac{1}{6} + \frac{1}{3} = \frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \frac{2}{3}$
 - $\frac{2}{10} + \frac{4}{5} = \frac{2}{10} + \frac{8}{10} = \frac{10}{10} = 1$
 - $\frac{3}{5} + \frac{9}{10} = \frac{6}{10} + \frac{9}{10} = \frac{15}{10} = 1\frac{1}{2}$
- Subtract.**
- $\frac{7}{8} - \frac{1}{2} = \frac{7}{8} - \frac{4}{8} = \frac{3}{8}$
 - $\frac{15}{9} - \frac{2}{3} = \frac{15}{9} - \frac{6}{9} = \frac{9}{9} = 1$
 - $\frac{4}{7} - \frac{2}{14} = \frac{8}{14} - \frac{2}{14} = \frac{6}{14} = \frac{3}{7}$
 - $\frac{4}{5} - \frac{1}{10} = \frac{8}{10} - \frac{1}{10} = \frac{7}{10}$
- Multiply.**
- $\frac{1}{2} \times \frac{4}{10} = \frac{4}{20} = \frac{1}{5}$
 - $\frac{2}{3} \times \frac{4}{6} = \frac{8}{18} = \frac{4}{9}$
 - $\frac{5}{12} \times \frac{1}{4} = \frac{5}{48}$
 - $\frac{3}{10} \times \frac{3}{4} = \frac{9}{40}$
- Divide.**
- $\frac{3}{5} \div \frac{1}{3} = \frac{3}{5} \times \frac{3}{1} = \frac{9}{5} = 1\frac{4}{5}$
 - $2 \div \frac{1}{2} = 2 \times \frac{2}{1} = 4$
 - $\frac{8}{1} \div 8 = \frac{8}{8} = 1$
 - $\frac{1}{4} \div \frac{1}{3} = \frac{1}{4} \times \frac{3}{1} = \frac{3}{4}$
 - $3\frac{3}{4} \div \frac{1}{2} = \frac{15}{4} \div \frac{1}{2} = \frac{15}{4} \times \frac{2}{1} = \frac{30}{4} = 7\frac{3}{2}$
- Write >, <, or = to make the statements true.
- $0.5 < \frac{1}{2}$
 - $0.8 = \frac{4}{5}$
 - $0.35 < \frac{1}{3}$
 - $1.3 > \frac{7}{8}$



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Trial and Error

Often, the quickest way to solve a problem is to make a logical guess, and test it to see if it works. The first guess, or trial, will probably not be the correct answer—but it should help you figure out a better, more reasonable guess.



Directions: Use trial and error to find the solutions to these problems.

- Mr. McFerrison is between 30 and 50 years old. The sum of the digits in his age is 11. His age is an even number. How old is Mr. McFerrison?
He is 38 years old.
- The key for number 5 does not work on Carson's calculator. How can he use his broken calculator to subtract 108 from 351?
Possible answer: Add 10 to each number, and then subtract 118 from 361 to find the answer: 243.
- Tasha likes to swim a certain number of miles each day for 3 days straight. Then, she increases her mileage by 1 for the next 3 days, and so on. Over a 9-day period, Tasha swims a total of 27 miles. She swims equal mileage Monday, Tuesday, and Wednesday. She swims another amount on Thursday, Friday, and Saturday. She swims yet a third amount on Sunday, Monday, and Tuesday. How many miles does Tasha swim each day?
2 Monday, 2 Tuesday, 2 Wednesday, 3 Thursday, 3 Friday, 3 Saturday, 4 Sunday, 4 Monday, 4 Tuesday

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Trial and Error

Directions: Use trial and error to complete each diagram so all the equations work.

Example:

$$\begin{array}{r} 6 \\ + \\ 7 \\ \hline x \\ \hline 13 \\ - \\ 42 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + \\ 4 \\ \hline x \\ \hline 11 \\ - \\ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + \\ 8 \\ \hline x \\ \hline 12 \\ - \\ 32 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + \\ 4 \\ \hline x \\ \hline 8 \\ - \\ 16 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + \\ 0 \\ \hline x \\ \hline 7 \\ - \\ 0 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + \\ 8 \\ \hline x \\ \hline 15 \\ - \\ 56 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + \\ 9 \\ \hline x \\ \hline 17 \\ - \\ 72 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + \\ 9 \\ \hline x \\ \hline 15 \\ - \\ 54 \\ \hline \end{array}$$

$$\begin{array}{r} 15 \\ + \\ 16 \\ \hline x \\ \hline 31 \\ - \\ 240 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ + \\ 1 \\ \hline x \\ \hline 11 \\ - \\ 10 \\ \hline \end{array}$$

$$\begin{array}{r} 100 \\ + \\ 1 \\ \hline x \\ \hline 101 \\ - \\ 100 \\ \hline \end{array}$$

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Choosing a Method

This table explains different methods of computation that can be used to solve a problem.

Method		
Mental Math	- Calculating in your head.	- Use with small numbers, memorized facts, and multiples of tens, hundreds, thousands, and so on.
Objects/Diagram	- Drawing or using an object to represent the problem.	- Use to model the situation.
Pencil and Paper	- Calculating the answer on paper.	- Use when a calculator is not available and the problem is too difficult to solve mentally.
Calculator	- Using a calculator or computer to find the solution.	- Use with large numbers or for a quick answer.
Trial and Error	- Making a guess at the answer and trying to see if it works.	- Use when unsure what to do or if none of the methods above work.

Directions: Circle the method of computation that seems best for solving each problem. Then, solve the problem.

- The School Days Fun Fair has 38 booths and 23 games. How many booths and games total are in the fair?
 • Paper and Pencil Answer: 61
 • Objects/Diagram
- The lemonade stand was stocked with 230 cups. On the first day, 147 drinks were sold. How many cups were left?
 • Objects/Diagram Answer: 83
 • Paper and Pencil
- There are 3 cars in the tram to transport people from the parking lot to the fair. Each car can seat 9 people. How many people can ride the tram at one time?
 • Objects/Diagram Answer: 27
 • Trial and Error

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Choosing a Method

Directions: Write what method you will use for each problem. Then, find the answer.

- Answers may vary. Possible answers shown.**
- Jenna receives an allowance of \$3.50 a week. This week her mother paid her in nickels, dimes, and quarters. She received more dimes than quarters. How many of each coin did her mom use to pay her?
 Method: Trial and Error
 Answer: 8 quarters, 13 dimes, 4 nickels
 - You are buying your lunch at school. There are 4 people in front of you and 7 people behind you. How many people are standing in line? (Hint: it's not 11 people.)
 Method: Mental Math
 Answer: 12 people
 - A runner can run 1 mile in 12 minutes. He ran for 30 minutes today. How far did he run?
 Method: Calculator/Pencil and Paper
 Answer: 2.5 miles
 - A family of four goes out to dinner. They decide to order a 16-piece pizza. Each person likes something different on his or her pizza, but each will eat equal amounts. Maria likes pepperoni and sausage, Tony likes ham and pineapple, Mom likes cheese only, and Dad likes mushrooms. Maria is allergic to mushrooms, so her slices can't be next to Dad's. Mom detests pineapple, so her slices can't be next to Tony's. How will the restaurant arrange their pizza?
 Method: Objects/Diagram
 Answer: starting at top of pizza: Dad's, Mom's, Maria's, Tony's
 - The Petting Zoo has 72 animals in aquariums, 32 animals in cages, and 57 animals fenced in. How many animals does the Petting Zoo have?
 Method: Calculator/Pencil and Paper
 Answer: 161 animals

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Multi-Step Problems

Some problems take more than one step to solve. First, plan each step needed to find the solution. Then, solve each part to find the answer.

Example: Tickets for a bargain matinee cost \$4 for adults and \$3 for children. How much would tickets cost for a family of 2 adults and 3 children?

Step 1: Find the cost of the adults' tickets.

2	x	\$4	=	\$8	total
adults	each ticket				

Step 2: Find the cost of the children's tickets.

3	x	\$3	=	\$9	total
children	each ticket				
\$8	+	\$9	=	\$17	total
adults		children			

Step 3: Add to find the sum of the tickets.

The tickets cost \$17 total.

Directions: Write the operations you will use to solve each problem. Then, find the answer.

- Arden and her father are riding their bikes 57 miles to Arden's grandma's house. They ride 13 miles and then take a water break. Then, they ride 15 miles to a rest area for a picnic lunch. How many miles do Arden and her father have left to ride after lunch?
 1. Add the miles they've gone; 2. Subtract from total miles.
 Operations: total miles
 Answer: 29 miles
- A triathlete bikes 15 miles at 20 miles per hour, runs 5 miles at 6 miles per hour, and swims 1 mile at 4 miles per hour. How long does the triathlon take her to complete?
 1. Devise a formula: number of miles divided by mph =
 Operations: time; 2. Add the time totals; 3. Convert to hours.
 Answer: approximately 1 hour and 50 minutes
- Ray bought strawberries for \$1.99, blueberries for \$1.40, and 2 pints of raspberries for \$1.25 per pint. How much did Ray spend on berries?
 1. Find total cost of raspberries; 2. Add to the cost of blueberries
 Operations: and strawberries
 Answer: \$5.89

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Hidden Questions

When solving a story problem, you may find that some information you want is not stated in the problem. You must ask yourself what information you need and decide how you can use the data in the problem to find this information. The problem contains a hidden question to find before you can solve it.

Example: Chris and his mother are building a birdhouse. He buys 4 pieces of wood for \$2.20 each. How much change should he get back from \$10?

- Step 1:** Find the hidden question:
 What is the total cost of the wood? $\$2.20 \times 4 = \8.80
- Step 2:** Use your answer to the hidden question to solve the problem.
 $\$10.00 - \$8.80 = \$1.20$

Directions: Write the hidden questions. Then, solve the problems.

- Chris used 3 nails to attach each board to the frame. After nailing 6 boards, he had 1 nail left. How many nails did Chris have before he started?
 Hidden Question: How many nails had he used?
 Answer: 19 nails
- Chris sawed a 72-inch post into 3 pieces. Two of the pieces were each 20 inches long. How long was the third piece?
 Hidden Question: How long were the two pieces total?
 Answer: 32 inches
- It took Chris and his mom 15 hours to make a birdhouse. They thought it would take 3 days. How many hours early did they complete the job?
 Hidden Question: How many hours are in 3 days?
 Answer: 57 hours
- It takes Chris 15 hours to make a birdhouse and 9 hours to make a birdfeeder. He worked for 42 hours and made 1 birdhouse and some birdfeeders. How many birdfeeders did Chris make?
 Hidden Question: How much time total did he spend on birdfeeders?
 Answer: 3 birdfeeders

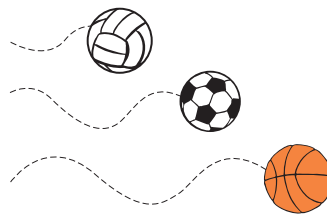
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Logic Problems

Directions: Use the clues below to figure out this logic problem.

Three friends all enjoy sports. Each of their favorite sports involves a ball. Two of these sports are played on courts, and one is played on a field.

- Rachel likes to run and doesn't have to be a good catcher.
- Trinity is a good jumper.
- Betsy is also a good jumper, but she is a good ball handler.



Which sport does each girl play?

- Trinity: Volleyball
 Betsy: Basketball
 Rachel: Soccer

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A Cool Logic Problem

A family with 5 children went to the frozen-yogurt shop. The children all ordered different flavors.

Directions: Use the clues and the chart to help you write which child ate which flavor of frozen yogurt. Write a dot in the chart for the correct answer. Cross out all the other boxes in that row and column.

- No person had frozen yogurt with the same first initial as his or her name.
- Neither of the twins, Corey and Cody, like peanut butter. Corey thinks vanilla is boring.
- The children are the twins, Julia, the brother who got chocolate, and the sister who ate peanut butter.

	Rocky Road	Chocolate Chip	Vanilla	Chocolate	Peanut Butter
Corey	•				
Cody			•		
Miranda					•
Julia		•			
Lucas				•	

Who ate which flavor?

- Corey: Rocky Road
 Cody: Vanilla
 Miranda: Peanut Butter
 Julia: Chocolate Chip
 Lucas: Chocolate



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ANSWER KEY

Perimeter

The **perimeter** is the distance around a shape formed by straight lines, such as a square or triangle. To find the perimeter of a shape, add the lengths of its sides.



For the square, add $8 + 8 + 8 + 8 = 32$. Or, write a formula using **P** for **perimeter** and **s** for the **sides**:
 $P = 4 \times s$
 $P = 4 \times 8$
 $P = 32$ inches

For the rectangle, add $4 + 5 + 4 + 5 = 18$. Or, use a different formula, using **l** for **length** and **w** for **width**. In formulas with parentheses, first do the adding, multiplying, and so on, in the parentheses:
 $P = (2 \times l) + (2 \times w)$
 $P = (2 \times 5) + (2 \times 4)$
 $P = 10 + 8$
 $P = 18$

For the triangle, the sides are all different lengths, so the formula doesn't help. Instead, add the sides: $3 + 4 + 5 = 12$ inches.

Directions: Find the perimeter of each shape below. Use the formula whenever possible.

- Find the perimeter of the room pictured at left. $P = \underline{42 \text{ ft.}}$
- Brandy plans to frame a picture with a sheet of construction paper. Her picture is 8 in. wide and 13 in. long. She wants the frame to extend 1 in. beyond the picture on all sides. How wide and long should the frame be? What is the perimeter of her picture and of the frame?
 Length and width of frame: 15 in. long and 10 in. wide
 Perimeter of picture: 42 inches
 Perimeter of frame: 50 inches
- A square has a perimeter of 120 feet. How long is each side? 30 feet
- A triangle with equal sides has a perimeter of 96 inches. How long is each side? 32 inches
- A rectangle has two sides that are each 14 feet long and a perimeter of 50 feet. How wide is it? 11 feet

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Perimeter

Directions: Find the perimeter of each shape below.

- $P = \underline{12}$
- $P = \underline{32}$
- $P = \underline{128}$
- $P = \underline{18}$
- $P = \underline{16}$
- $P = \underline{14}$
- $P = \underline{25}$
- $P = \underline{21}$

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Area: Squares and Rectangles

The **area** is the number of square units that covers a certain space. To find the area, multiply the length by the width. The answer is in square units, shown by adding a superscript 2 (²) to the number.



For the rectangle, use this formula: $A = l \times w$
 $A = 8 \times 5$
 $A = 40 \text{ in.}^2$

For the square formula, **s** stands for side: $A = s \times s$ (or s^2)
 $A = 3 \times 3$ (or 3^2)
 $A = 9 \text{ in.}^2$

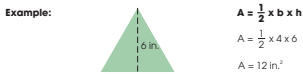
Directions: Find the area of each shape below.

- Find the area of a room that is 12 feet long and 7 feet wide. $A = \underline{84 \text{ ft.}^2}$
- A farmer's field is 32 feet on each side. How many square feet does she have to plow? 1,024 ft.²
- Kwan's bedroom is 10 feet by 12 feet. How many square feet of carpeting would cover the floor? 120 ft.²
- Two of Kwan's walls are 7.5 feet high and 12 feet long. The other two are the same height and 10 feet long. How many square feet of wallpaper would cover all four walls?
 Square feet for 12-foot wall = 90 ft.² $\times 2 = \underline{180 \text{ ft.}^2}$
 Square feet for 10-foot wall = 75 ft.² $\times 2 = \underline{150 \text{ ft.}^2}$
- A clothes shop moved from a store that was 35 by 22 feet to a new location that was 53 by 32 feet. How many more square feet does the store have now?
 Square feet for first location = 770 ft.²
 Square feet for new location = 1,696 ft.² Difference = 926 ft.²
- A school wanted to purchase a climber for the playground. The one they selected would need 98 square feet of space. The only space available on the playground was 12 feet long and 8 feet wide. Will there be enough space for the climber? No

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Area: Triangles

Finding the area of a triangle requires knowing the size of the base and the height. For the triangle formula, use **b** for **base** and **h** for **height**. Multiply $\frac{1}{2}$ times the size of the base, and then multiply by the height. The answer will be in square units.



Directions: Apply the formula to find the area of each triangle below.

- $A = \underline{6 \text{ in.}^2}$
- $A = \underline{17.5 \text{ in.}^2}$
- $A = \underline{9 \text{ in.}^2}$
- $A = \underline{1 \text{ in.}^2}$
- Addison wanted to make a sail for her new boat. The base of the triangular sail would be 7 feet, and the height would be 6 feet. Find the area.
 $A = \underline{21 \text{ ft.}^2}$

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Area Challenge

When finding the area of an unusual shape, first try to divide it into squares, rectangles, or triangles. Find the area of each of those parts, and then add your answers together to find the total area of the object.

Directions: Find the area of each shape below.

- Total area = 69 in.²
- Total area = 34 ft.²
- Total area = 38 ft.²
- Total area = 18 units²
- Total area = 32 units²
- Total area = 31 units²

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Volume

Volume is the number of cubic units that fills a space. A **cubic unit** has 6 equal sides, like a child's block. To find the volume (V) of something, multiply the length (l) by the width (w) by the height (h), or $V = l \times w \times h$. The answer will be in cubic units (³). Sometimes it's easier to understand volume if you imagine a figure is made of small cubes.



Directions: Solve the following problems.

- What is the volume of a cube that is 7 inches on each side? 343 in.³
- How many cubic inches of cereal are in a box that is 10 inches long, 6 inches wide, and 4.5 inches high? 270 in.³
- Jeremy made a tower of five blocks that are each 2.5 inches square. How many cubic inches are in his tower? 78.125 in.³
- How many cubic feet of gravel are in the back of a full dump truck that measures 7 feet wide by 4 feet tall by 16 feet long? 448 ft.³
- Will 1,000 cubic inches of dirt fill a flower box that is 32 inches long, 7 inches wide, and 7 inches tall? No
- A mouse needs 100 cubic inches of air to live for an hour. Will your pet mouse be okay for an hour in an airtight box that's 4.5 inches wide by 8.25 inches long by 2.5 inches high? No
- Find the volume of the figures below. 1 cube = 1 inch³

- $V = \underline{14 \text{ in.}^3}$
- $V = \underline{26 \text{ in.}^3}$
- $V = \underline{60 \text{ in.}^3}$
- $V = \underline{56 \text{ in.}^3}$

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Geometric Patterns

Geometric patterns can be described in several ways. **Similar shapes** have the same shape but in differing sizes. **Congruent shapes** have the same geometric pattern but may be facing in different directions. **Symmetrical shapes** are identical when divided in half.

Directions: Use the terms **similar**, **congruent**, or **symmetrical** to describe the following patterns.

1. **similar and symmetrical**

2. **congruent**

3. **congruent and symmetrical**

4. **congruent**

5. **congruent and symmetrical**

6. **similar and symmetrical**

7. **congruent**

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Angles

Angles are named according to the number of degrees between the lines. The degrees are measured with a protractor.

Examples:

straight angle (measures 180°)

right angle (90°)

acute angle (less than 90°)

obtuse angle (more than 90°)

Directions: Study the examples. Then, follow the instructions below.

1. Use a protractor to measure each angle below. Then, write whether it is straight, right, acute, or obtuse.

A. Degrees: **60°** Kind of angle: **acute**

B. Degrees: **180°** Kind of angle: **straight**

C. Degrees: **120°** Kind of angle: **obtuse**

D. Degrees: **90°** Kind of angle: **right**

2. The angles in this figure are named by letters. Write the number of degrees in each angle and whether it is straight, right, acute, or obtuse.

a. Angle AFB Degrees: **40°** Kind of angle: **acute**

b. Angle AFC Degrees: **90°** Kind of angle: **right**

c. Angle AFD Degrees: **100°** Kind of angle: **obtuse**

d. Angle AFE Degrees: **180°** Kind of angle: **straight**

e. Angle BFD Degrees: **80°** Kind of angle: **acute**

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Types of Triangles

The sum of angles in all triangles is 180°. However, triangles come in different shapes. They are categorized by the length of their sides and by their types of angles.

Equilateral: Three equal sides

Isosceles: Two equal sides

Scalene: Zero equal sides

Acute: Three acute angles

Right: One right angle

Obtuse: One obtuse angle

One triangle can be a combination of types, such as isosceles and obtuse.

Directions: Study the examples. Then, complete the exercises below.

1. Read these directions, and color in the correct triangles.

Color the right scalene triangle blue.
Color the obtuse scalene triangle red.
Color the equilateral triangle yellow.
Color the right isosceles triangle green.
Color the acute isosceles triangle black.

2. Describe each of these triangles in two ways.

A. **acute scalene**

B. **right isosceles**

3. In the space below, draw the following triangles.

scalene triangle

equilateral triangle

obtuse triangle

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Finding Angles

All triangles have three angles. The sum of these angles is 180°. Therefore, if we know the number of degrees in two of the angles, we can add them together and then subtract from 180 to find the size of the third angle.

Directions: Follow the instructions below.

1. Circle the number that shows the third angle of triangles A through F. Then, describe each triangle two ways. The first one has been done for you.

A. 60°, 60° 45°, 50°, **60°** **equilateral, acute**

B. 35°, 55° 27°, **60°**, 132° **scalene, right**

C. 30°, 120° **30°**, 74°, 112° **isosceles, obtuse**

D. 15°, 78° 65°, **67°**, 98° **scalene, acute**

E. 28°, 93° 61°, **59°**, 70° **scalene, obtuse**

F. 12°, 114° 60°, 50°, **64°** **scalene, obtuse**

2. Find the number of degrees in the third angle of each triangle below.

A. **100°**

B. **60°**

C. **66°**

D. **60°**

E. **70°**

F. **70°**

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Types of Quadrilaterals

A **quadrilateral** is a shape with four sides and four angles. The sum of angles in all quadrilaterals is 360°. Like triangles, quadrilaterals come in different shapes and are categorized by their sides and their angles.

A **square** has four parallel sides of equal length and four 90° angles.

A **rectangle** has four parallel sides, but only its opposite sides are equal length; it has four 90° angles.

A **parallelogram** has four parallel sides, with the opposite sides of equal length.

A **trapezoid** has two opposite sides that are parallel; its sides may or may not be equal length; its angles may include none, one, or two that are 90°.

Directions: Study the examples. Then, complete the exercises below.

1. Color in the correct quadrilaterals.

Color two squares blue. Color two rectangles red.
Color two parallelograms yellow. Color two trapezoids green.

2. Circle the number that shows the missing angle for each quadrilateral. Then name the possible quadrilaterals that could have those angles.

A. 90°, 90°, 90°, 45° **90°** 180° **rectangle, square**

B. 65°, 115°, 65°, 65° **115°** 90° **parallelogram, trapezoid**

C. 90°, 110°, 90°, 45° **70°** 125° **trapezoid**

D. 100°, 80°, 80°, 40° **80°** 80° **parallelogram, trapezoid**

E. 90°, 120°, 50°, 50° **100°** 100° **trapezoid**

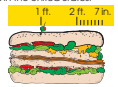
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Length in Customary Units

The **customary system** of measurement is the most widely used in the United States. It measures length in inches, feet, yards, and miles.

Examples:

12 inches (in.) = 1 foot (ft.)
3 ft. (36 in.) = 1 yard (yd.)
5,280 ft. (1,760 yds.) = 1 mile (mi.)



To change to a larger unit, divide. To change to a smaller unit, multiply.

Examples:

To change inches to feet, divide by 12. 24 in. = 2 ft. 27 in. = 2 ft. 3 in.
To change feet to inches, multiply by 12. 3 ft. = 36 in. 4 ft. = 48 in.
To change inches to yards, divide by 36. 108 in. = 3 yd. 80 in. = 2 yd. 8 in.
To change feet to yards, divide by 3. 12 ft. = 4 yd. 11 ft. = 3 yd. 2 ft.

Sometimes in subtraction you have to borrow units.

Examples:

3 ft. 4 in. = 2 ft. 16 in. 3 yd. = 2 yd. 3 ft.
-1 ft. 11 in. -1 ft. 11 in. -1 yd. 2 ft. -1 yd. 2 ft.
1 ft. 5 in. 1 yd. 1 ft.

Directions: Solve the following problems.

1. 108 in. = **9** ft. 2. 68 in. = **5** ft. **8** in.

3. 8 ft. = **2** yd. **2** ft. 4. 3,520 yd. = **2** mi.

5. What form of measurement (inches, feet, yards, or miles) would you use for each item below?

a. pencil **inches** b. vacation trip **miles**

c. playground **yards or feet** d. wall **feet or yards**

6. One side of a square box is 2 ft. 4 in. What is the perimeter of the box? **9 ft. 4 in.**

7. Jason is 59 in. tall. Kent is 5 ft. 1 in. tall. Who is taller and by how much? **Kent, 2 in.**

8. Kyrto bought a doll 2 ft. 8 in. tall for her little sister. She found a box that is 29 in. long. Will the doll fit in that box? **No**

9. Dan's dog likes to go out in the backyard, which is 85 ft. wide. The dog's chain is 17 ft. 6 in. long. If Dan attaches one end of the chain to a pole in the middle of the yard, will his dog be able to leave the yard? **No**

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ANSWER KEY

Length in Metric Units

The **metric system** measures length in meters, centimeters, millimeters, and kilometers.

Examples:

- A **meter (m)** is about 40 inches or 3.3 feet.
- A **centimeter (cm)** is $\frac{1}{100}$ of a meter or 0.4 inches.
- A **millimeter (mm)** is $\frac{1}{10}$ of a centimeter or 0.04 inches.
- A **kilometer (km)** is 1,000 meters or 0.6 miles.

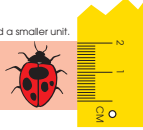
As before, divide to find a larger unit, and multiply to find a smaller unit.

Examples:

- To change cm to mm, multiply by 10.
- To change cm to meters, divide by 100.
- To change mm to meters, divide by 1,000.
- To change km to meters, multiply by 1,000.

Directions: Solve the following problems.

- 600 cm = 6 m 2. 12 cm = 120 mm 3. 47 m = 4,700 cm 4. 3 km = 3,000 m
- In the sentences below, write the missing unit: m, cm, mm, or km.
 - A fingernail is about 1 mm thick.
 - An average car is about 5 m long.
 - Someone could walk 1 km in 10 minutes.
 - A finger is about 7 cm long.
 - A street could be 3 km long.
 - The Earth is about 40,000 km around at the equator.
 - A pencil is about 17 cm long.
 - A noodle is about 4 mm wide.
 - A teacher's desk is about 1 m wide.
- A nickel is about 1 mm thick. How many nickels would be in a stack 1 cm high? 10
- Is something 25 cm long closer to 10 inches or 10 feet? 10 inches
- Is something 18 mm wide closer to 0.7 inch or 7 inches? 0.7 inch
- Would you get more exercise running 4 km or 500 m? 4 km
- Which is taller, something 40 m or 350 cm? 40 m



Weight in Customary Units

Here are the main ways to measure weight in customary units:

- 16 ounces (oz.) = 1 pound (lb.)
- 2,000 lb. = 1 ton (tn.)
- To change ounces to pounds, divide by 16.
- To change pounds to ounces, multiply by 16.

As with measurements of length, you may have to borrow units in subtraction.

Example:
$$\begin{array}{r} 4 \text{ lb. } 5 \text{ oz.} \\ - 2 \text{ lb. } 10 \text{ oz.} \\ \hline 3 \text{ lb. } 21 \text{ oz.} \end{array}$$

Directions: Solve the following problems.

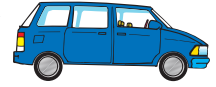
- 48 oz. = 3 lb. 2. 39 oz. = 2 lb. 4 oz. 3. 4 lb. = 64 oz. 4. 1.25 tn. = 2,500 lb.
- What form of measurement would you use for each of these: ounces, pounds, or tons?
 - pen ounces
 - elephant tons
 - person pounds
- Which is heavier: 0.25 ton or 750 pounds? 750 pounds
- Twenty-two people, each weighing an average of 150 lb., want to get on an elevator that can carry up to 1.5 tons. How many of them should wait for the next elevator? 2 people
- A one-ton truck is carrying 14 boxes that weigh 125 lb. each. It comes to a small bridge with a sign that says, "Bridge unsafe for trucks over 2 tons." Is it safe for the truck and the boxes to cross the bridge? Yes
- A large box of oat boats contains 2 lb. 3 oz. of cereal, while a box of Honey Hunks contains 1 lb. 14 oz. How many more ounces are in the box of Oat Boats? 5 ounces
- A can of Peter's Powdered Drink Mix weighs 2 lb. 5 oz. A can of Petunia's Powdered Drink Mix weighs 40 oz. Which one is heavier? Petunia's
- A can of Peter's Drink Mix is 12 cents an ounce. How much does it cost? \$4.44
- How many 5-oz. servings could you get from a fish that weighs 3 lb. 12 oz.? 12



Weight in Metric Units

- A **gram (g)** is about 0.035 oz.
- A **milligram (mg)** is $\frac{1}{1,000}$ of a gram or about 0.000035 oz.
- A **kilogram (kg)** is 1,000 g or about 2.2 lb.
- A **metric ton (t)** is 1,000 kg or about 1.1 tn.

- To change g to mg, multiply by 1,000.
- To change g to kg, divide by 1,000.
- To change kg to g, multiply by 1,000.
- To change t to kg, multiply by 1,000.



Directions: Solve the following problems.

- 3 kg = 3,000 g 2. 2 g = 2,000 mg 3. 1.45 g = 0.145 kg
- 3,000 kg = 3 t 5. 0.45 g = 450 mg 6. 3.5 t = 3,500 kg
- Write the missing units below: g, mg, kg, or t.
 - A sunflower seed weighs less than 1 g.
 - A serving of cereal contains 14 g of sugar.
 - The same serving of cereal has 250 mg of salt.
 - A bowling ball weighs about 7 kg.
 - A whole weighs about 90 t.
 - A math textbook weighs about 1 kg.
 - A safety pin weighs about 1 g.
 - An average car weighs about 1 t.
 - Is 200 g closer to 7 oz. or 70 oz.? 7 oz.
 - Is 3 kg closer to 7 lb. or 70 lb.? 7 lbs.
- Does a metric ton weigh more or less than a ton measured by the customary system? more
- How is a kilogram different from a kilometer? A kilogram measure weight; a kilometer measures distance.
- Which is heavier, 300 g or 1 kg? 1 kg

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Capacity in Customary Units

Here are the main ways to measure capacity (how much something will hold) in customary units:

- 8 fluid ounces (fl. oz.) = 1 cup (c.)
- 2 c. = 1 pint (pt.)
- 2 pt. = 1 quart (qt.)
- 4 qt. = 1 gallon (gal.)

- To change ounces to cups, divide by 8.
- To change cups to ounces, multiply by 8.
- To change cups to pints or pints to quarts, divide by 2.
- To change pints to cups or quarts to pints, multiply by 2.

As with measurements of length and weight, you may have to borrow units in subtraction.

Example:
$$\begin{array}{r} 3 \text{ gal. } 2 \text{ qt.} \\ - 1 \text{ gal. } 3 \text{ qt.} \\ \hline 2 \text{ gal. } 3 \text{ qt.} \end{array}$$

Directions: Solve the following problems.

- 32 fl. oz. = 2 pt. 2. 4 gal. = 32 qt. 3. 3 c. = 24 fl. oz.
- 5 pt. = 2.5 qt. 5. 16 pt. = 2 gal. 6. 3 pt. = 48 fl. oz.
- A large can of soup contains 19 fl. oz. A serving is about 8 oz. How many cans should you buy if you want to serve 7 people? 3 cans
- A container of strawberry ice cream holds 36 fl. oz. A container of chocolate ice cream holds 2 pt. Which one has more ice cream? How much more? strawberry; 4 fl. oz.
- A day-care worker wants to give 15 children each 6 fl. oz. of milk. How many quarts of milk does she need? 3 qt.
- This morning, the day-care supervisor bought 3 gal. of milk. The kids drank 2 gal. 3 c. How much milk is left for tomorrow? 13 cups
- Harriet bought 3 gal. 2 qt. of paint for her living room. She used 2 gal. 3 qt. How much paint is left over? 3 qt.
- Yusef's favorite punch takes a pint of raspberry sherbet. If he wants to make $1\frac{1}{2}$ times the recipe, how many fl. oz. of sherbet does he need? 24 fl. oz.



Capacity in Metric Units

- A **liter (l)** is a little over 1 quart.
- A **milliliter (ml)** is $\frac{1}{1,000}$ of a liter, or about 0.03 oz.
- A **kiloliter (kl)** is 1,000 liters or about 250 gallons.

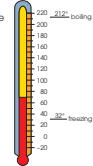
Directions: Solve the following problems.

- 5,000 mL = 5 L
- 2,000 L = 2 kl
- 3 L = 3,000 mL
- Write the missing unit: L, mL, or kL.
 - A swimming pool holds about 100 kL of water.
 - An eyedropper is marked for 1 and 2 ml.
 - A pitcher could hold 1 or 2 L of juice.
 - A teaspoon holds about 5 mL of medicine.
 - A bathtub might hold 5 L of water.
 - A tablespoon holds about 15 mL of salt.
 - A bowl holds about 250 mL of soup.
 - We drank about 4 L of punch at the party.
- Which is more, 3 L or a gallon? gallon
- Which is more, 400 mL or 40 oz.? 40 oz.
- Which is more, 1 kl, or 500 L? 1 kl
- Is 4 L closer to a quart or a gallon? gallon
- Is 480 mL closer to 2 cups or 2 pints? 2 cups
- Is a mL closer to 4 drops or 4 teaspoonsful? 4 drops
- How many glasses of juice containing 250 mL each could you pour from a 1-L jug? 4 glasses
- How much water would you need to water an average-sized lawn, 1 kl, or 1 L? 1 kl

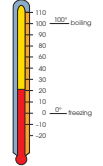


Temperature in Customary and Metric Units

The customary system measures temperature in Fahrenheit (F°) degrees.



The metric system uses Celsius (C°) degrees.



Directions: Study the thermometers, and answer these questions.

- Write in the temperature from both systems:

	Fahrenheit	Celsius
a. freezing	<u>32°</u>	<u>0°</u>
b. boiling	<u>212°</u>	<u>100°</u>
c. comfortable room temperature	<u>Answers will vary.</u>	
- Underline the most appropriate temperature for both systems.
 - a reasonably hot day 34° 54° 84° 10° 20° 38°
 - a cup of hot chocolate 95° 120° 190° 60° 90° 120°
 - comfortable water to swim in 55° 75° 95° 10° 25° 40°
- If the temperature is 35°C, is it summer or winter? summer
- Would ice cream stay frozen at 35°F? No
- Which is colder, -10°C or -10°F? -10° F
- Which is warmer, 60°C or 60°F? 60° C

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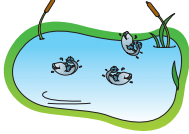
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Review

Directions: Complete the following exercises.

- 372 in. = 10 yd. 1 ft.
- 4 km = 4,000 m
- 1.25 lb. = 20 oz.
- 2,000 mg = 2 g
- 1 qt. = 32 oz.
- 10,000 mL = 10 L
- Todd has a board that is 6 ft. 3 in. long. He needs to cut it to 4 ft. 9 in. How much should he cut off?
18 in. (1 ft. 6 in.)
- In a contest, Lauren threw a ball 12 yd. Jiao threw the ball 500 in. Who threw the farthest?
Jiao
cm
- Would you measure this workbook in mm or cm?
cm
- Which is heavier, a box of books that weighs 4 lb. 6 oz. or a box of dishes that weighs 80 oz?
box of dishes
- A 1-lb. package has 10 hot dogs. How many ounces does each hot dog weigh?
1.6 oz.
- Would the amount of salt (sodium) in 1 oz. of pretzels be 170 g or 170 mg?
170 mg
- If a family ate half a gallon of frozen yogurt, how many fluid ounces would be left?
64 fl. oz.
- You want to serve 6 fl. oz. of fruit juice to each of 16 friends at your party. How many quarts of juice should you buy?
3 qt.
- Would you measure water in a fish pond with L or kL?
kL
- Would popsicles melt at 5°C?
Yes
- Would soup be steaming hot at 150°F?
Yes



Ratios

A **ratio** is a comparison of two quantities. For example, a wall is 96 in. high; a pencil is 8 in. long. By dividing 8 into 96, you find it would take 12 pencils to equal the height of the wall. The ratio, or comparison, of the wall to the pencil can be written three ways: 1 to 12; 1:12; $\frac{1}{12}$. In this example, the ratio of triangles to circles is 4:6. The ratio of triangles to squares is 4:9. The ratio of circles to squares is 6:9. These ratios will stay the same if we divide both numbers in the ratio by the same number.

Examples: $\frac{4}{6} = \frac{2}{3}$ $\frac{6}{9} = \frac{2}{3}$ (There is no number that will divide into both 4 and 9.)

By reducing 4:6 and 6:9 to their lowest terms, they are the same— $\frac{2}{3}$. This means that 2:3, 4:6, and 6:9 are all equal ratios. You can also find equal ratios for all three by multiplying both numbers of the ratio by the same number.

Examples: $\frac{4 \times 3}{6 \times 3} = \frac{12}{18}$ $\frac{6 \times 5}{9 \times 5} = \frac{30}{45}$ $\frac{4 \times 4}{9 \times 4} = \frac{16}{36}$

Directions: Solve the following problems.

- Write two more equal ratios for each of the following by multiplying or dividing both numbers in the ratio by the same number.
 - $\frac{1}{2} : \frac{2}{4}$ $\frac{4}{8} : \frac{5}{10}$
 - $\frac{1}{8} : \frac{2}{16}$ $\frac{5}{40} : \frac{3}{12}$
 - $\frac{8}{24} : \frac{1}{3}$ $\frac{2}{6} : \frac{4}{12}$
- Circle the ratios that are equal.
 - $\frac{1}{6} : \frac{3}{6}$ $\frac{15}{25} : \frac{3}{5}$
 - $\frac{2}{7} : \frac{10}{35}$
 - $\frac{2}{3} : \frac{6}{10}$
- Write each ratio three ways.
 - stars to faces 3 to 7; 3:7; $\frac{3}{7}$
 - faces to trees 7 to 5; 7:5; $\frac{7}{5}$
 - stars to all other shapes 3 to 12; $\frac{3}{12}$
- Write two equal ratios (multiplying or dividing) for:
 - stars to faces $\frac{2}{7} : \frac{4}{14}$
 - faces to trees $\frac{7}{14} : \frac{5}{10}$
 - stars to all other shapes $\frac{3}{12} : \frac{1}{4}$



Missing Numbers in Ratios

You can find a missing number (n) in an equal ratio. First, figure out which number has already been multiplied to get the number you know. (In the first example, 3 is multiplied by 3 to get 9; in the second example, 2 is multiplied by 6 to get 12.) Then, multiply the other number in the ratio by the same number (3 and 6 in the examples).

Examples: $\frac{3}{4} = \frac{9}{n}$ $\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$ $n = 12$ $\frac{1}{2} = \frac{n}{12}$ $\frac{1}{2} \times \frac{6}{6} = \frac{6}{12}$ $n = 6$

Directions: Solve the following problems.

1. Find each missing number.

- $\frac{1}{2} = \frac{n}{12}$ $n =$ 6
- $\frac{1}{5} = \frac{n}{15}$ $n =$ 3
- $\frac{3}{2} = \frac{18}{n}$ $n =$ 12
- $\frac{5}{8} = \frac{n}{32}$ $n =$ 20
- $\frac{8}{3} = \frac{16}{n}$ $n =$ 6
- $\frac{n}{14} = \frac{5}{7}$ $n =$ 10



- If a basketball player makes 9 baskets in 12 tries, what is her ratio of baskets to tries, in lowest terms?
3:4
- At the next game, the player has the same ratio of baskets to tries. If she tries 20 times, how many baskets should she make?
15 baskets
- At the third game, she still has the same ratio of baskets to tries. This time she makes 12 baskets. How many times did she probably try?
16 times
- If a driver travels 40 miles in an hour, what is his ratio of miles to minutes, in lowest terms?
2:3
- At the same speed, how far would the driver travel in 30 minutes?
20 miles
- At the same speed, how long would it take him to travel 60 miles?
1 hr. 30 min.

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Proportions

A **proportion** is a statement that two ratios are equal. To make sure ratios are equal, called a proportion, we multiply the cross products.

Examples of proportions: $\frac{1}{5} = \frac{2}{10}$ $\frac{1}{2} = \frac{10}{20}$ $\frac{3}{7} = \frac{15}{35}$ $\frac{3}{5} = \frac{35}{105}$

These two ratios are not a proportion: $\frac{4}{3} = \frac{5}{3}$ $\frac{4}{3} \times \frac{6}{6} = \frac{24}{18}$

To find a missing number (n) in a proportion, multiply the cross products and divide.

Examples: $\frac{n}{30} = \frac{1}{6}$ $n \times 6 = 1 \times 30$ $n \times 6 = 30$ $n = \frac{30}{6}$ $n = 5$



Directions: Solve the following problems.

- Write = between the ratios if they are a proportion. Write \neq if they are not a proportion. The first one has been done for you.
 - $\frac{1}{2} = \frac{6}{12}$
 - $\frac{13}{18} \neq \frac{20}{22}$
 - $\frac{2}{6} = \frac{5}{15}$
 - $\frac{5}{6} = \frac{20}{24}$
- Find the missing numbers in these proportions.
 - $\frac{2}{5} = \frac{n}{15}$ $n =$ 6
 - $\frac{3}{6} = \frac{9}{n}$ $n =$ 24
 - $\frac{n}{18} = \frac{4}{12}$ $n =$ 6
- One issue of a magazine costs \$2.99, but if you buy a subscription, 12 issues cost \$35.88. Is the price at the same proportion?
Yes
- A muffin recipe calls for 3 cups of flour to make 24 muffins. How much flour is needed for 36 muffins?
4.5 cups
- The same recipe requires 4 teaspoons of cinnamon for 36 muffins. How many teaspoons is needed to make 48 muffins? (Answer will include a fraction.)
 $5\frac{1}{3}$ teaspoons
- The recipe also calls for 2 cups of sugar for 36 muffins. How much sugar should you use for 48 muffins? (Answer will include a fraction.)
 $5\frac{2}{3}$ cups

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Percents

Percent means "per 100." A percent is a ratio that compares a number with 100. The same number can be written as a decimal and a percent. To change a decimal to a percent, move the decimal point two places to the right and add the % sign. To change a percent to a decimal, drop the % sign and place a decimal point two places to the left.

Examples: 0.25 = 25% 0.1 = 10% 1.456 = 145.6%
32% = 0.32 99% = 0.99 203% = 2.03

A percent or decimal can also be written as a ratio or fraction.

Example: 0.25 = 25% = $\frac{25}{100} = \frac{1}{4} = 1:4$

To change a fraction or ratio to a percent, first change it to a decimal. Divide the numerator by the denominator.

Examples: $\frac{1}{3} = 3\overline{33} = 33\frac{1}{3}\%$ $\frac{2}{5} = 5\overline{20} = 40\%$



Directions: Solve the following problems.

- Change the percents to decimals.
 - 3% = 0.03
 - 75% = 0.75
 - 14% = 0.14
 - 115% = 1.15
- Change the decimals and fractions to percents.
 - 0.56 = 56%
 - 0.03 = 3%
 - $\frac{3}{4} =$ 75%
 - $\frac{1}{5} =$ 20%
- Change the percents to ratios in their lowest terms. The first one has been done for you.
 - 75% = $\frac{75}{100} = \frac{3}{4} =$ 3:4
 - 40% = $\frac{40}{100} = \frac{2}{5} =$ 2:5
 - 35% = $\frac{35}{100} = \frac{7}{20} =$ 7:20
 - 70% = $\frac{70}{100} = \frac{7}{10} =$ 7:10
- The class was 45% girls. What percent was boys?
55%
- Half the shoes in one store were on sale. What percent of the shoes were their ordinary price?
50%
- Terra read 84 pages of a 100-page book. What percent of the book did she read?
84%

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Percents

To find the percent of a number, change the percent to a decimal and multiply.

Examples: 45% of \$20 = 0.45 x \$20 = \$9.00
125% of 30 = 1.25 x 30 = 37.50



Directions: Solve the following problems. Round the answers to the nearest hundredth where necessary.

- Find the percent of each number.
 - 26% of 40 = 10.4
 - 12% of 329 = 39.48
 - 73% of 19 = 13.87
 - 2% of 24 = 0.48
- One family spends 35% of its weekly budget of \$375 on food. How much do they spend?
\$131.25
- A shirt in a store usually costs \$15.99, but today it's on sale for 25% off. The clerk says you will save \$4.50. Is that true?
No
- A book that usually costs \$12 is on sale for 25% off. How much will it cost?
\$9.00
- After you answer 60% of 150 math problems, how many do you have left to do?
60
- A pet store's shipment of tropical fish was delayed. Nearly 40% of the 1,350 fish died. About how many lived?
810
- The shipment had 230 angelfish, which died in the same proportion as the other kinds of fish. About how many angelfish died?
92
- A church youth group was collecting cans of food. Their goal was 1,200 cans, but they exceeded their goal by 25%. How many cans did they collect?
1,500

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ANSWER KEY

Probability

Probability is the ratio of favorable outcomes to possible outcomes in an experiment. You can use probability (P) to figure out how likely something is to happen. For example, six picture cards are turned facedown—3 cards have stars, 2 have triangles, and 1 has a circle. What is the probability of picking the circle? Using the formula below, you have a 1 in 6 probability of picking the circle, a 2 in 6 probability of picking a triangle, and a 3 in 6 probability of picking a star.

Example: $P = \frac{\text{number of favorable outcomes}}{\text{number of trials}}$ $P = \frac{1}{6} = 1:6$



Directions: Solve the following problems.

- A class has 14 girls and 15 boys. If all of their names are put on separate slips in a hat, what is the probability of each person's name being chosen? 1:29
- In the same class, what is the probability that a girl's name will be chosen? 14:29
- In this class, 3 boys are named Jack. What is the probability that a slip with "Jack" written on it will be chosen? 3:29
- A spinner on a board game has the numbers 1–8. What is the probability of spinning and getting a 4? 1:8
- A paper bag holds these colors of wooden beads: 4 blue, 5 red, and 6 yellow. If you select a bead without looking, do you have an equal probability of getting each color? No
- Using the same bag of beads, what is the probability of reaching in and drawing out a red bead (in lowest terms)? 1:3
- In the same bag, what is the probability of not getting a blue bead? 11:15
- In a carnival game, plastic ducks have spots. The probability of picking a duck with a yellow spot is 2:15. There is twice as much probability of picking a duck with a red spot. What is the probability of picking a duck with a red spot? 4:15
- In this game, all the other ducks have green spots. What is the probability of picking a duck with a green spot (in lowest terms)? 3:5

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Possible Combinations

Today the cafeteria is offering 4 kinds of sandwiches, 3 kinds of drinks, and 2 kinds of fruits. How many possible combinations could you make? To find out, multiply the number of choices together.

Example: $4 \times 3 \times 2 = 24$ possible combinations



Directions: Solve the following problems.

- If Juan has 3 shirts and 4 pairs of shorts, how many combinations can he make? 12
- Jamilla can borrow 1 book and 1 magazine at a time from her classroom library. The library has 45 books and 16 magazines. How many combinations are possible? 720
- Kerry's mother is redecorating the living room. She has narrowed her choices to 6 kinds of wallpaper, 3 shades of paint, and 4 colors of carpeting that all match. How many possible combinations are there? 72
- Maya has 6 sweaters that she can combine with pants to make 24 outfits. How many pairs of pants does she have? 4
- Cooper can get to school by walking, taking a bus, riding his bike, or asking his parents for a ride. He can get home the same ways, except his parents aren't available then. How many combinations can he make of ways to get to school and get home? 12
- Gabby's middle school offers 3 different language classes, 3 art classes, and 2 music classes. If she takes one class in each area, how many possible combinations are there? 18
- Vikram's school offers 4 language classes, 3 art classes, and some music classes. If Vikram can make 36 possible combinations, how many music classes are there? 3
- AAA Airlines schedules 12 flights a day from Chicago to Disneyland if you make part of your trip on AAA Airlines? 12

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Review

Directions: Solve the following problems. Round answers to the nearest hundredth where necessary.

- Write an equal ratio for each of these:
 - $\frac{1}{7} = \frac{2}{14}$
 - $\frac{5}{8} = \frac{10}{16}$
 - $\frac{15}{3} = \frac{30}{6}$
 - $\frac{6}{24} = \frac{12}{48}$
- State the ratios below in lowest terms.
 - cats to bugs = 2:3
 - cats to dogs = 4:5
 - dogs to all other objects = 1:2
- If Shawn drives 45 miles an hour, how far could he go in 40 minutes? 30 miles
- At the same speed, how many minutes would it take Shawn to drive 120 miles? 2 hours and 40 minutes
- Mr. Herman is building a doghouse in proportion to his family's house. The family's house is 30 ft. high and the doghouse is 5 ft. high. If the family house is 42 ft. wide, how wide should the doghouse be? 7 ft.
- The family house is 24 ft. from front to back. How big should Mr. Herman make the doghouse? 4 ft.
- Change these numbers to percents:
 - $0.56 = 56\%$
 - $\frac{4}{5} = 80\%$
 - $0.04 = 4\%$
 - $\frac{3}{8} = 37.5\%$
- Which is a better deal, a blue bike for \$125 at 25% off or a red bike for \$130 at 30% off? red bike
- If sales tax is 6%, what would be the total price of the blue bike? \$96.46
- Richard bought 6 raffle tickets for a tree bike. If 462 tickets were sold, what is Richard's probability of winning? 6:462 = 1:77
- Lily bought 48 tickets in the same raffle. What are her chances of winning? 48:462 = 8:77

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Comparing Data

Data is gathered information. The **range** is the difference between the highest and lowest number in a group of numbers. The **median** is the number in the middle when numbers are listed in order. The **mean** is the average of the numbers. We can compare numbers or data by finding the range, median, or mean.

Example: 16, 43, 34, 78, 8, 91, 26

To compare these numbers, we first need to put them in order: 8 16 26 34 43 78 91. By subtracting the lowest number (8) from the highest one (91), we find the range: 83. By finding the number that falls in the middle, we have the median: 34 (if no number fell exactly in the middle, we would average the two middle numbers.) By adding them and dividing by the number of numbers (7), we get the mean: 42.29 (rounded to the nearest hundredth).

Directions: Solve the following problems. Round answers to the nearest hundredth where necessary.

- Find the range, median, and mean of these numbers: 19, 5, 84, 27, 106, 38, 75.
Range: 101 Median: 38 Mean: 50.57
- Find the range, median, and mean finishing times for 6 runners in a race. Here are their times in seconds: 14.2, 12.9, 13.5, 10.3, 14.8, 14.7.
Range: 4.5 Median: 13.85 Mean: 13.4
- If the runner who won the race in 10.3 seconds had run even faster and finished in 7 seconds, would the mean time be higher or lower? Lower
- If that runner had finished in 7 seconds, what would be the median time? 13.85
- Here are the high temperatures in one city for a week: 65, 72, 68, 74, 81, 68, 85. Find the range, median, and mean temperatures.
Range: 20 Median: 72 Mean: 73.29
- Find the range, median, and mean test scores for this group of students: 41, 32, 45, 36, 48, 38, 37, 42, 39, 36.
Range: 16 Median: 38.5 Mean: 39.4



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Tables

Organizing data into tables makes it easier to compare numbers. As evident in the example, putting many numbers in a paragraph is confusing. When the same numbers are organized in a table, you can compare numbers in a glance. Tables can be arranged several ways and still be easy to read and understand.

Example: Money spent on groceries:
Family A: week 1—\$98.50; week 2—\$134.25; week 3—\$142.00; week 4—\$103.50.
Family B: week 1—\$160.25; week 2—\$192.50; week 3—\$171.25; week 4—\$173.50.

	Week 1	Week 2	Week 3	Week 4
Family A	\$98.50	\$134.25	\$142.00	\$103.50
Family B	\$160.25	\$192.50	\$171.25	\$173.50

Directions: Complete the following exercises.

- Finish the table below, and then answer the questions.
Data: Steve weighs 185 lb. and is 6 ft. 2 in. tall. George weighs 218 lb. and is 6 ft. 3 in. tall. Chuck weighs 178 lb. and is 6 ft. 1 in. tall. Henry weighs 166 lb. and is 6 ft. tall.

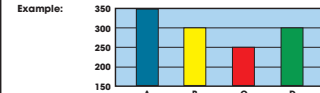
	Henry	George	Chuck	Steve
Weight	<u>166 lb.</u>	<u>218 lb.</u>	<u>178 lb.</u>	<u>185 lb.</u>
Height	<u>6 ft.</u>	<u>6 ft. 3 in.</u>	<u>6 ft. 1 in.</u>	<u>6 ft. 2 in.</u>

 - Who is tallest? George
 - Who weighs the least? Henry
- On another sheet of paper, prepare 2 tables comparing the amount of money made by 3 booths at the school carnival this year and last year. In the first table, write the names of the games in the left-hand column (like **Family A** and **Family B** in the example). In the second table (using the same data), write the years in the left-hand column. Here is the data: fish pond—this year \$15.60, last year \$13.50; bean-bag toss—this year \$13.45, last year \$10.25; ring toss—this year \$23.80, last year \$18.80. After you complete both tables, answer the following questions.
 - Which booth made the most money this year? ring toss
 - Which booth made the biggest improvement from last year to this year? ring toss

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Bar Graphs

Another way to organize information is a **bar graph**. The bar graph in the example compares the number of students in 4 elementary schools. Each bar stands for 1 school. You can easily see that School A has the most students and School C has the least. The numbers along the left show how many students attend each school.



Directions: Complete the following exercises.

- This bar graph will show how many calories are in 1 serving of 4 kinds of cereal. Draw the bars the correct height, and label each with the name of the cereal. After completing the bar graph, answer the questions. Data: Korn Kernels—150 calories; Oat Flats—160 calories; Rice Puffs—110 calories; Nut Crunch—200 calories.
 - Which cereal is the best to eat if you're trying to lose weight? Rice Puffs
 - Which cereal has nearly the same number of calories as Oat Flats? Korn Kernels
- On another sheet of paper, draw your own graph, showing the number of TV commercials in 1 week for each of the 4 cereals in the graph above. After completing the graph, answer the questions. Data: Oat Flats—27 commercials; Rice Puffs—15; Nut Crunch—35; Korn Kernels—28.
 - Which cereal is most heavily advertised? Nut Crunch
 - What similarities do you notice between the graph of calories and the graph of TV commercials? Nut Crunch is the highest in sugar and advertising.

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Picture Graphs

Newspapers and textbooks often use pictures in graphs instead of bars. Each picture stands for a certain number of objects. The number of pictures means half the number. The picture graph in the example indicates the number of games each team won. The Astros won 7 games, so they have $3\frac{1}{2}$ balls.

Example:

	Games Won
Astros	
Orioles	
Bluebirds	
Sluggers	

(1 ball = 2 games)

Directions: Complete the following exercises.

Finish this picture graph, showing the number of students who have dogs in 4 sixth-grade classes. Draw simple dogs in the graph, letting each drawing stand for 2 dogs. Data: Class 1—12 dogs; Class 2—16 dogs; Class 3—22 dogs; Class 4—12 dogs. After completing the graph, answer the questions.

	Dogs Owned by Students
Class 1	
Class 2	
Class 3	
Class 4	

(One dog drawing = 2 students' dogs)

- Why do you think newspapers use picture graphs? **Answers will vary. It simplifies information and is easier to read.**
- Would picture graphs be appropriate to show the exact number of dogs living in America? Why or why not? **No. There are too many dogs.**

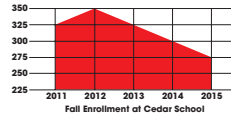
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Line Graphs

Still another way to display information is a line graph. The same data can often be shown in both a bar graph and a line graph. Line graphs are especially useful in showing changes over a period of time.

The line graph in the example shows changes in the number of students enrolled in a school over a 5-year period. Enrollment was highest in 2012 and has decreased gradually each year since then. Notice how labeling the years and enrollment numbers make the graph easy to understand.

Example:



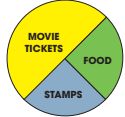
Directions: Complete the following exercises.

- On another sheet of paper, draw a line graph that displays the growth of a corn plant over a 6-week period. Mark the correct points, using the data below, and connect them with a line. After completing the graph, answer the questions. Data: week 1—3.5 in.; week 2—4.5 in.; week 3—5 in.; week 4—5.5 in.; week 5—5.75 in.; week 6—6 in.
 - Between which weeks was the growth fastest? **Weeks 1 and 2**
 - Between which weeks was the growth slowest? **Weeks 4 and 5; Weeks 5 and 6**
- On another sheet of paper, draw a line graph to show how the high temperature varied during one week. Then answer the questions. Data: Sunday—high of 53 degrees; Monday—51; Tuesday—56; Wednesday—60; Thursday—58; Friday—67; Saturday—73. Don't forget to label the numbers.
 - In general, did the days get warmer or cooler? **Warmer**
 - Do you think this data would have been as clear in a bar graph? **No**
Explain your answer. **Line graphs show a trend up and down across the graph.**

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Circle Graphs

Circle graphs are useful in showing how something is divided into parts. The circle graph in the example shows how Cathy spent her \$10 allowance. Each section is a fraction of her whole allowance. For example, the movie tickets section is $\frac{3}{4}$ of the circle, showing that she spent $\frac{3}{4}$ of her allowance, \$ $7\frac{50}{100}$, on movie tickets.



Directions: Complete the following exercises.

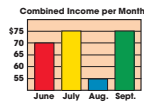
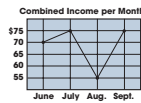
- When the middle school opened last fall, $\frac{1}{3}$ of the students came from East Elementary, $\frac{1}{4}$ came from West Elementary, and the remaining students moved into the town from other cities. Make a circle graph showing these proportions. Label each section. Then, answer the questions.
 - What fraction of students at the new school moved into the area from other cities? **$\frac{1}{8}$**
 - If the new middle school has 450 students enrolled, how many used to go to East Elementary? **225 students**
- This circle graph will show the hair color of 24 students in one class. Divide the circle into 4 sections to show this data: black hair—8 students; brown hair—10 students; blonde hair—4 students; red hair—2 students. (Hint: 8 students are $\frac{1}{3}$ or $\frac{1}{4}$ of the class.) Be sure to label each section by hair color. Then, answer the questions.
 - Looking at your graph, what fraction of the class is the combined group of blonde- and red-haired students? **$\frac{6}{24}$ $\frac{1}{4}$**
 - What two fractions of hair color combine to total half the class? **red and brown or black and blonde**

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Comparing Presentation Methods

Tables and different kinds of graphs have different purposes. Some are more helpful for certain kinds of information. The table and three graphs below all show basically the same information—the amount of money Owen and Leyla made in their lawn-mowing business over a 4-month period.

Combined Income per Month		
	Owen	Leyla
June	\$34	\$36
July	41	35
August	27	28
Sept.	36	40
Totals	\$138	\$139



Directions: Study the graphs and table. Then, circle the one that answers each question below.

- Which one shows the fraction of the total income that Owen and Leyla made in August?
table line graph bar graph **circle graph**
- Which one compares Owen's earnings with Leyla's?
table line graph bar graph circle graph
- Which one has the most exact numbers?
table line graph bar graph circle graph
- Which one has no numbers?
table line graph bar graph **circle graph**
- Which two best show how Owen and Leyla's income changed from month to month?
table **line graph** **bar graph** circle graph

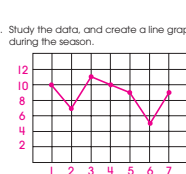
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Graphing Data

Directions: Complete the following exercises.

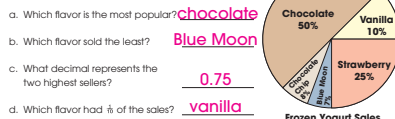
- Use the following information to create a bar graph.

Cities	Population (in 1,000s)
Dover	20
Newton Falls	12
Springdale	25
Hampton	17
Riverside	5



- | | |
|-------------|---|
| Game 1 — 10 | Fill in the blanks. |
| Game 2 — 7 | a. High game: 3 |
| Game 3 — 11 | b. Low game: 6 |
| Game 4 — 10 | c. Average baskets per game: 8.7 |
| Game 5 — 9 | |
| Game 6 — 5 | |
| Game 7 — 9 | |

- Study the graph, then answer the questions.



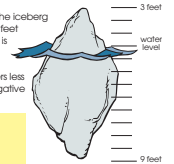
- Which flavor is the most popular? **Chocolate**
- Which flavor sold the least? **Vanilla**
- What decimal represents the two highest sellers? **0.75**
- Which flavor had $\frac{1}{4}$ of the sales? **vanilla**

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Integers

An **integer** is a whole number above or below 0: -2, -1, 0, +1, +2, and so on. **Opposite integers** are two integers the same distance from 0, but in different directions, such as -2 and +2.

Think of the water level in the picture as 0. The part of the iceberg sticking out of the water is positive. The iceberg has 3 feet above water. The part of the iceberg below the water is negative. The iceberg extends -9 feet under water.



Numbers greater than 0 are **positive** numbers. Numbers less than 0 are **negative** numbers. Pairs of positive and negative numbers are called **opposite integers**.

Examples of opposite integers:

- 5 and +5
- losing 3 pounds and gaining 3 pounds
- earning \$12 and spending \$12

Directions: Complete the following exercises.

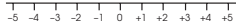
- Write each of these as an integer. The first one is done for you.
 - positive 6 = **+6**
 - losing \$5 = **-\$5**
 - 5 degrees below 0 = **-5**
 - receiving \$12 = **+\$12**
- Write the **opposite** integer of each of these. The first one is done for you.
 - negative 4 = **+4**
 - positive 10 = **-10**
 - 2 floors below ground level = **+2**
 - winning a card game by 6 points = **-6**
- Write integers to show each idea.
 - A train that arrives 2 hours after it was scheduled: **+2**
 - A package that has 3 fewer cups than it should: **-3**
 - A board that's 3 inches too short: **-3**
 - A golf score 5 over par: **+5**
 - A paycheck that doesn't cover \$35 of a family's expenses: **-\$35**
 - 30 seconds before a missile launch: **-30**
 - A team that won 6 games and lost 2: **+4**

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ANSWER KEY

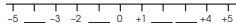
Comparing Integers

Comparing two integers can be confusing unless you think of them as being on a number line, as shown below. Remember that the integer farther to the right is greater. Thus, +2 is greater than -3, 0 is greater than -4, and -2 is greater than -5.



Directions: Study the number line. Then, complete the following exercises.

1. Write in integers to complete the number line.



2. Write < for "less than" or > for "greater than" to compare the integers. The first one is done for you.

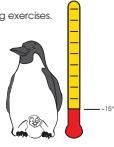
- a. $-5 < +5$ b. $+3 > -3$ c. $+2 > -4$
 d. $-4 < -3$ e. $-1 < +3$ f. $-1 > -5$

3. Write T for true or F for false. (All degrees are in Fahrenheit.)

- a. +7 degrees is colder than -3 degrees. F
 b. -14 degrees is colder than -7 degrees. T
 c. +23 degrees is colder than -44 degrees. F
 d. -5 degrees is colder than +4 degrees. T

4. Draw an X by the series of integers that are in order from least to greatest.

- +2, +3, -4
X -3, 0, +1
X -7, -4, -1
 -3, -4, -5



Adding Integers

The sum of two positive integers is a positive integer.

Thus, $-4 + +1 = -5$.

The sum of two negative integers is a negative integer.

Thus, $-5 + -2 = -7$.

The sum of a positive and a negative integer has the sign of the integer that is farther from 0.

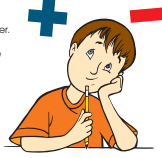
Thus, $-6 + +3 = -3$.

The sum of opposite integers is 0.

Thus, $+2 + -2 = 0$.

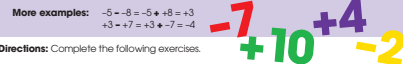
Directions: Complete the following exercises.

1. Add these integers.
 a. $+2 + +7 = +9$ b. $-4 + -2 = -6$ c. $+5 + -3 = +2$ d. $+4 + -4 = 0$
 e. $-10 + -2 = -12$ f. $+6 + -1 = +5$ g. $+45 + -30 = +15$ h. $-39 + +26 = -13$
2. Write the problems as integers. The first one has been done for you.
 a. One cold morning, the temperature was -14 degrees. The afternoon high was 20 degrees warmer. What was the high temperature that day? $-14 + +20 = +6$
 b. Another day, the high temperature was 26 degrees, but the temperature dropped 35 degrees during the night. What was the low that night? $+26 + -35 = -9$
 c. Valentina's allowance was \$10. She paid \$7 for a movie ticket. How much money did she have left? $+$10 + -$7 = +$3$
 d. The temperature in a meat freezer was -10 degrees, but the power went off and the temperature rose 6 degrees. How cold was the freezer then? $-10 + +6 = -4$
 e. The school carnival took in \$235, but it had expenses of \$185. How much money did the carnival make after paying its expenses? $+$235 + -$185 = +$50$



Subtracting Integers

To subtract an integer, change its sign to the opposite and add it. If you are subtracting a negative integer, make it positive and add it: $+4 - -6 = +4 + +6 = +10$. If you are subtracting a positive integer, make it negative and add it: $+8 - +2 = +8 + -2 = +6$.

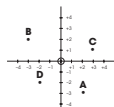


Directions: Complete the following exercises.

1. Before subtracting these integers, rewrite each problem. The first one has been done for you.
 $-6 - -8 = -6 + +8 = +2$ $+3 - -4 = +3 + +4 = +7$
 $+9 - +3 = +9 + -3 = +6$ $-1 - -7 = -1 + +7 = +6$
 $+7 - -5 = +7 + +5 = +12$ $-4 - +3 = -4 + -3 = -7$
2. Write these problems as integers. The first one is done for you.
 a. The high temperature in the Arctic Circle one day was -42 degrees. The low was -67 degrees. What was the difference between the two? $-42 - -67 = -42 + +67 = +25$
 b. At the equator one day, the high temperature was +106 degrees. The low was +85 degrees. What was the difference between the two? $+106 - +85 = +106 + -85 = +21$
 c. At George's house one morning, the thermometer showed it was +7 degrees. The radio announcer said it was -2 degrees. What is the difference between the two temperatures? $+7 - -2 = +7 + +2 = +9$
 d. What is the difference between a temperature of +11 degrees and a wind-chill factor of -15 degrees? $+11 - -15 = +11 + +15 = +26$
 e. During a dry spell, the level of a river dropped from 3 feet above normal to 13 feet below normal. How much more water did it drop? $+3 - -13 = +3 + +13 = +16$
 f. Here are the average temperatures in a meat freezer for four days: -12, -11, -14, and -9 degrees. What is the difference between the highest and lowest temperature? $-11 - -9 = -11 + +9 = -5$

Plotting Graphs

A graph with horizontal and vertical number lines can show the location of certain points. The horizontal number line is called the **x-axis**, and the vertical number line is called the **y-axis**. Two numbers, called the **x coordinate** and the **y coordinate**, show where a point is on the graph.



The first coordinate, x, tells how many units to the right or left of 0 the point is located. On the example graph, point A is +2, two units to the right of 0.

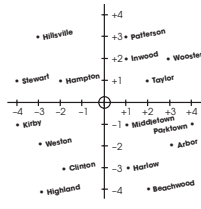
The second coordinate, y, tells how many units above or below 0 the point is located. On the example, point A is -3, three units below 0.

Thus, the coordinates of A are +2, -3. The coordinates of B are -3, +2. (Notice the order of the coordinates.) The coordinates of C are +3, +1; and D, -2, -2.

Directions: Study the example. Then, answer these questions about the graph below.

1. What towns are at these coordinates?

- +1, +3 Patterson
 +1, -3 Harlow
 -4, +1 Stewart
 -2, -3 Clinton
 -3, -2 Weston
 -3, -3 Hillsville



2. What are the coordinates of these towns?

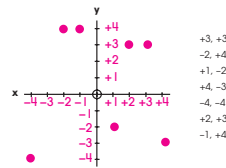
- Hampton -2, +1
 Wooster +3, +2
 Beachwood +2, -4
 Middletown +1, -1
 Kirby -4, -1
 Arbor +3, -2

Ordered Pairs

Ordered pairs is another term used to describe pairs of integers used to locate points on a graph.

Directions: Complete the following exercises.

1. Place the following points on the graph, using the ordered pairs as data.



2. Create your own set of ordered pairs. Use your home as the center of your coordinates—zero. Let the x-axis serve as East and West. The y-axis will be North and South. Now, select things to plot on your graph—the school, playground, grocery store, a friend's house, and so on.

Answers will vary.

Place	Ordered pair of coordinates
School	_____
Grocery store	_____
Playground	_____
Friend's house	_____

Review

Directions: Complete the following exercises.

1. Write the **opposite** integers of the following:
 a. 14 degrees above 0 -14
 b. Spending \$21 +\$21
2. Write integers to show these ideas:
 a. 4 seconds after the launch of the space shuttle +4
 b. A lake 3 feet below its usual level -3
 c. 2 days before your birthday -2
3. Write < for "less than" or > for "greater than" to compare these integers.
 $-2 > -4$ $+2 > -3$ $-1 < +1$
4. Add the integers.
 $-14 + -11 = -25$ $-6 + +5 = -1$ $-7 + +7 = 0$
5. Subtract the integers.
 $-4 - -5 = +1$ $+3 - -6 = +9$ $+7 - +2 = +5$
6. Write T for true or F for false.
 a. The x coordinate is on the horizontal number line. T
 b. Add the x and y coordinates to find the location of a point. F
 c. Always state the x coordinate first. T
 d. A y coordinate of +2 would be above the horizontal number line. T
 e. An x coordinate of +2 would be to the right of the vertical number line. T

Author's Purpose

Books, magazines, and websites all have specific purposes for their existence. While your child is reading or watching television, ask her to tell the purpose of the story, show, news segment, or commercial. Discriminating among authors' purposes makes for a more informed citizen and consumer.

Cause and Effect

Invite your child to read the newspaper front page, circling the causes of an event and underlining the effects. You can also have your child read an article on an online news site and tell you the causes and effects she reads about. Have your child write cause-and-effect statements for her daily activities. For example: I hit the snooze button on my alarm clock, so I was late for school. I practiced fielding ground balls over the weekend, so I did much better at baseball practice.

Classifying

Give your child several category names, and invite her to provide examples. For example: Modes of Transportation—car, train, bicycle, airplane, wheelchair, horse and buggy. See how many examples she can come up with for each category. Then, provide your child with several examples, and ask her to name the category. For example: sugar, candy, honey, fruit—Sweet Things.

Comprehension

As you read with your child, encourage her to create a mental image of what is happening. This will help your child recall the story using the mind's eye as well as the ear. Discuss details of the story. Ask your child about the sequence of events. Ask her to retell the story, noting details from the beginning, middle, and end.

Invite your child to write a different ending or new chapter to a story. If your child can do this in a logical manner, she has grasped the plot or ideas presented.

Ask your child questions about the story before you begin reading. For example: What do you think the illustration on the book cover means? Will this be an adventure story? A true story? What do you think the title means? What do you think will happen to (character's name)?

Your child is now reading chapter books. These books have very few pictures. Check your child's comprehension by having her draw pictures representing the action or the problem for each chapter. Before starting each new chapter, ask your child to predict what will happen.

TEACHING SUGGESTIONS

Decimals

Have your child use money to understand the concept of decimals as part of a whole. Use dollar bills and a variety of coins. Ask your child to find various fractions, or parts, of a dollar. You and your child can write out money problems for each other to figure out. Also, use money as a cross-reference with fractions. Example: 25 cents is 0.25 of a dollar. .25 cents is also $\frac{25}{100}$ of a dollar.

Estimating

Take your child to the grocery store with you. While shopping, ask him to compare the prices of similar items of varying sizes and determine which is the better bargain. Invite your child to look at labels, pointing out that many are listed with customary and metric measurements. Ask him to estimate the total cost of the items by rounding numbers and averaging. Tell your child how much money you have to spend, and ask him to estimate the amount of change you should receive.

Take the family out to dinner, and have your child estimate the bill and calculate the appropriate amount to leave for a tip.

Take your child to a shopping mall in which several stores are having sales. Ask your child to estimate how much 40%, 25%, or 15% off an item would be, and so on. Then, calculate the sale price.

Fact/Opinion

Use the editorial section of a newspaper or magazine. Have your child read an article or letter and classify each sentence as either fact or opinion.

Many advertisements are confusing or misleading. Teach your child that everything in an ad may not be factual. Much of the appeal of ads is opinion. Cut out ads from magazines and newspapers, view or read them using online sources, and listen to them on television and radio. Help your child sort through the information. Ask him to point out the parts that are facts and those that are opinions. By realizing the difference and separating the two, your child will be able to make better judgments about which products to buy.

Fractions

Cut up fruits, vegetables, and other foods to help your child with the concept of fractions. Example: 8 sections of one whole orange, $\frac{1}{8}$, $\frac{8}{8}$; 2 halves of an apple, $\frac{1}{2}$, $\frac{2}{2}$; 6 pieces of pizza, $\frac{1}{6}$, $\frac{6}{6}$.

Your child can also use toy blocks in sets of 10, with a total of 100. Place the blocks on the floor, and explain that this represents one whole. Select different fractions for your child to find.

Geometry

Have your child cut out geometric shapes from cereal boxes, wallpaper scraps, construction paper, and so on. Invite him to create unique designs, and discuss the differences and similarities among the shapes.

Invite the whole family to join in measuring activities. See how quickly each family member can find the perimeter and area of his or her bedroom. Then, figure out the volumes. Invite your child to figure out how many square feet of living space are in your home, and how much space is used as storage areas.

Design a flower bed, or plant a vegetable garden. Ask your child to figure the dimensions needed for each plant, what percentage of the garden will be used for flowers, the ratio of edible plants to flowering plants, whether you will plant in straight lines or in geometric patterns, and so on.

Giving Directions

Ask your child if she has ever tried to assemble a game, toy, or other item and had difficulty following the directions. Invite your child to write more specific, easier-to-understand directions for any of those with which she had trouble. Once she has rewritten the directions, read them together. Do the directions make more sense?

Show your child the importance of giving clear directions by preparing a simple recipe together. Point out how the steps must be followed in order. Then, invite her to write a simple recipe for you to follow. Encourage your child to include all the necessary steps, and then see if you can create the recipe from her directions.

Graphing

With your child, collect data of birds, insects, flowers, and plants that you see in your backyard. Do this on several different occasions, and then find the ratio between the sets of data.

Invite your child to make charts of games, books, or music owned by different family members. Any topic will work! Arrange the data into charts or line graphs.

Have your child record the ages of all the family members, including grandparents, aunts, uncles, and cousins. Then, have her calculate the mean age of the family. Point out to your child how this differs from the median age, using the same set of numbers.

TEACHING SUGGESTIONS

Homophone Challenge

Homophones are words that are pronounced the same but are spelled differently and have different meanings, like **pear** and **pair**. Challenge your child to a contest to see who can write the most homophones.

Main Idea

Show your child that the chapters or units in her textbooks are grouped according to the main idea: The Human Body, Space, and so on.

Invite your child to group things into categories to see if the concept, or main idea, is understood. Examples: wild animals, sports played outside, board games, books about famous American women.

Ask your child questions while reading together, such as, “What is the most important thing the author is saying in this paragraph?” or “Can you tell what the author means in this sentence?”

Making Inferences

Guide your child to figure out what an author means, even when it is not directly stated in the writing. Practice by describing a situation to your child and having her tell you what is happening. Start out with simple situations, and then move on to more complicated situations.

Poetry

Share your favorite poems with your child. Borrow books of poetry from the library to read together. Make up poems together, taking turns with every other line. There are many different types of poetry besides haiku, diamanté, and descriptive poetry. Try different poetry styles with your child.

Metaphor and Simile Poems: Have your child use metaphors and similes to create poetry. Poems can rhyme, but it’s not necessary.

Example: Metaphor
The clouds in the sky,
Are popcorn rolling by.

Example: Simile
Elephants’ noses
Are like firemen’s hoses.
They squirt and they shower,
With plenty of power.

Let your child illustrate her poems for greater visual effect or write her best poems with glittery pens on fancy paper. Poetry can be printed in fancy type on the

computer with graphics added. Frame the best ones, and hang them for all to enjoy.

Verb Poems: Many action words can be arranged on paper so the shape represents the action. Encourage your child to create his own action verb poems.

Example: ping ping ping ping; p_o^ur_iⁿg

Limericks: Limericks are short, funny, five-line poems. The first, second, and fifth lines rhyme. The second and third lines rhyme as well. Edward Lear (1812–1888) first popularized limericks. Read the example below and other limericks out loud together.

Example: There is a fat cat in my town
Whose fur is all spotted with brown;
He spends his days,
In a variety of ways,
Strolling in the park with a clown.

Have your child use this sentence as the first line and complete the limerick. Then, have him write another one of his own.

There was an old horse from Bellaire

Tanka: Tanka is an extension of haiku. Tankas complete the poet's thoughts by adding two extra lines at the end of seven syllables each. Remember, haiku has three lines of five, seven, and five syllables, respectively.

Example: Snow is falling down.
Crystals collect on the ground.
Winter has arrived.
Snowmen will soon decorate
The yards of children in town.

Have your child begin by composing a haiku. Then, have him add two additional lines to make the poem a tanka.

Changing Prose to Poetry

Often, colorful writing in essays, narratives, speeches, and advertisements can be easily transformed into poetry. Read the example with your child. Then, look for other topics, and create your own poem together. Example: HOUSE FOR SALE: This lovely home is situated on rolling ground in the country. Horses frolic in the pasture by day and retire to a well-kept barn at night. Lush forests surround the estate and offer plentiful wildlife along the winding paths.

Poem: I would love to live in a house,
Surrounded by nature and silence.
I would ride my horse through the woods,
And enjoy the sights and sounds of the forest.
I dream of being at peace,
Relaxed and carefree.
Alone in my beautiful house,
Surrounded by nature and silence.

Point of View

Learning to look at issues from more than one point of view can help your child see both sides. Read editorials in your local newspaper together. Discuss whose point of view is stated. Ask your child to present an opposing point of view to the one read. Even if he agrees with the writer, it is good practice. If you and your child feel strongly about an issue, write an editorial together and send it to your local newspaper. Remember to add reasons, facts, and examples to your editorial.

Problem Solving/Logic Problems

As you go about your daily business, point out the problem solving to be done. Have your child help you work through the problems, whether they are while cooking, fixing something, or creating a budget. He may help you map out the order for going around town to shop, taking your children to activities, doing your banking, and so on.

There are also books, websites, and magazines with word problems, such as crossword puzzles, logic problems, and diagramming logic puzzles. If your child enjoys the logic problems in this book, he may enjoy flexing his mind with one of these during leisure time.

Proofreading

The first draft of a story, whether handwritten or typed on a computer, should be one in which the writer doesn't worry about mechanics. She needs to create the characters, the setting, and the plot. Most stories take several revisions before they are finished. When the story is completed, you can guide your child in proofreading before making a final copy.

Help your child proofread other letters and reports she writes. Proofreading consists of checking for grammatical errors, misspellings, punctuation mistakes, and capitalization errors, and substituting synonyms for overused words. Using a spell-checking program on a computer is helpful, but it will not find and correct every error.

Make the corrections together until your child is able to handle proofreading on her own. Ask your child to help you check your written work, like memos, letters, and reports. This gives your child more practice and could be quite helpful to you.

Reading Extensions

Colonial America

Have your child research famous colonial women, such as Betsy Ross, Pocahontas, and Sacajawea. Write an informational paragraph about each woman's accomplishments. Invite your child to read more about the Puritans and the Quakers, and then complete a Venn diagram comparing the two groups.

Have your child make a time line of important Colonial American events. She can include events such as the arrival at Plymouth Rock, the first Thanksgiving, the Revolutionary War, and the signing of the Declaration of Independence.

Weather

Collect the daily newspaper weather map for a week, or print out a weather report from the Internet. Have your child go on a scavenger hunt for information such as Yesterday's High, Tomorrow's Forecast, Temperature in Paris, Pollen Count, and Pollution Index.

Give your child weather math problems to solve, such as computing the average daily temperature forecast for a week, or changing the high and low temperatures for the week from Fahrenheit to Celsius.

Invite your child to research earthquakes and compare them to weather phenomena such as tornadoes, hurricanes, and thunderstorms. Which is the most devastating force of nature? Compare damage in casualties and dollar amounts

TEACHING SUGGESTIONS

for each for a 10-year period in the United States. Ask your child to record her findings.

Australia

Ask your child to find a picture of the Australian flag and compare it to the United States flag. How are the flags alike? Different? What symbols are on the flags, and what do they represent? Invite your child to write a brief paragraph comparing and contrasting the two flags.

Have your child research the number of sheep in Australia versus the number of people. Have her create bar and circle graphs showing this information.

Invite your child to do additional research on the Aborigine culture. What is their diet? What traditions do they have? What dangers do they face in the future?

Have your child create a habitat display on an Australian animal. Divide a poster board into four equal sections. In the top left section, have her write an informational report about the animal. In the top right, have her make a web of animals to whom it is related. In the bottom left, have your child write a poem about the animal. Finally, in the last section, your child can draw the animal.

Kites

Invite your child to read more about Benjamin Franklin's kite and key experiment; then, write a one-paragraph informational essay about what was discovered. How was this discovery later applied in the world of science?

Have your child research different types of kites, including box kites, stunt kites, flat kites, and sled kites. Have your child describe what makes the kites alike and what makes them different.

Many kite terms are also weather terms. Encourage your child to find the definitions for the following words: **drag**, **lift**, **turbulence**, **upwind**, **wind speed**, and **downwind**. Ask your child to explain how these terms apply to kite flying. Or better yet, take your child out to fly a kite, and ask him to use these terms in the process!

Recalling Details

Write main ideas on index cards, such as "summer vacation." Then, ask your child to write several details about the idea, such as "no school," "playing with friends," "camping," "riding bikes," and so on.

Write a simple sentence for your child. Example: *The cat ran down the street.* Show your child how adding details makes the sentence more interesting. Example: *The fluffy white cat ran quickly down the noisy street.*

Ask him to add details to several simple sentences. Point out that these details are describing words, or adjectives.

Research/Locating Information

Have your child choose a topic that interests him. Help your child brainstorm a project he could do to find and present information about that topic. The project may include a written report, a speech, a demonstration, a model, a web page, an interview, etc. Help your child map out a “plan of attack” in obtaining, organizing, and presenting the information.

If there’s not enough information about the chosen topic, help your child brainstorm again about researchable topics. Or, if there is too much information, you may need to help your child focus on a subtopic to research.

Then, allow your child to research and organize data independently. Check to make sure he is finding the needed information and is organizing it for easy use later. Make as many of the following resources available to your child as possible: newspapers, the Internet, encyclopedias, dictionaries, topical magazines, or journals. Your local public library should have all these resources available to you. Have your child talk to his teacher about sharing the information/project with the rest of the class or turning it in for extra credit.

Summarizing Plots

The plot is the action in a story. To summarize a plot, tell about the most important parts in order. After your child finishes reading a book or watching a video, ask him to summarize the plot for you and make a recommendation whether he thinks you would enjoy it too.

Tests

Have your child create his own test using any or all of the formats covered in this book. Have him look at past tests to analyze what he might do differently on the next one. There are practice tests for many of the national standardized tests. If your child’s school does not have access to them, they can give you a way to contact a company directly.

Using a Dictionary/Vocabulary Building

Encourage your child to learn the spelling and definitions of new words. Select a word of the day, and write it on a sheet of paper. Have your child look up the word and use it in a sentence. At the end of each week, review the new words for the week.

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Another way to learn new words is to ask your child to open a dictionary at random and begin reading the words on that page. Stop at the first new word. Learn how to pronounce it and use it in a sentence.

Have your child think of synonyms for words he may overuse. For example: Cold can be replaced with **frosty**, **icy**, **freezing**, **chilly**, **cool**, and so on.

Word Origins

Help your child research your family name and your family tree. When and how did your ancestors arrive in America? Have any changes been made to the spelling of your surname?

Invite your child to find words that originate from Native American words. The states of Florida, Ohio, and New Jersey have many towns and lakes with Native American origins. Ask your child to trace the names to a specific tribe.

Guide your child to see that, although Latin is not a spoken language, many of the words in the English language are derived from Latin words. For example, the words **amiable**, **fictitious**, **liquid**, **major**, **omit**, and **poet** all have Latin origins. Invite your child to trace these and other words to the Latin words from which they are derived.

Writing

Read the editorial section of your local newspaper with your child. This section includes opinion essays. Invite your child to write a sample letter to the editor describing something about which she feels strongly. If it is currently relevant in your community, help her send it to the paper.

Have your child keep a daily journal during a vacation. She can record sights, sounds, and smells; favorite destinations; and so on. Collect and read brochures about various places and activities. At the end of the vacation, have your child reread her journal and write a short essay about vacation highlights.

Writing Directions

Being able to write and give clear directions is a useful skill for everyone. Encourage your child to practice writing directions for various tasks, like painting a room or planting a garden. Remind your child to think about what steps need to be done, in what order they should be done, and what equipment or tools are needed.

Directions from one location to another also need to be very clear. Ask your child to give the exact directions from your home to the library, post office, mall, or

other location. Watch for vague words or phrases, like “turn by the yellow house” or “go past the blue car.” Travel to that destination together following the directions exactly. Did you make it?

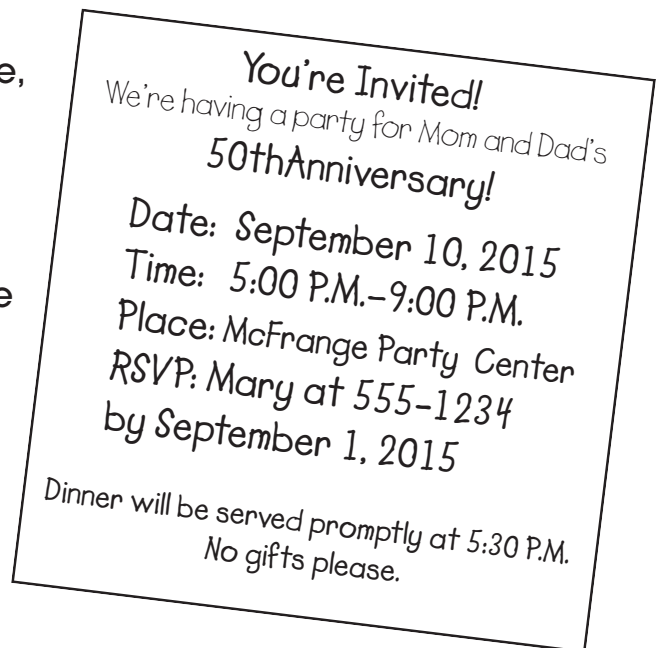
Before your child begins a task, ask her to write each step in order. Then, ask her to follow the directions exactly as written. This is the best way to determine if any steps or information have been omitted. Have her go back and add any missing information or clarify any steps that are unclear.

Writing an Invitation

An invitation needs to include the time, date, and place for an event; the reason for the invitation; and whether the receiver should indicate her ability to attend (RSVP).

Invitations may be written in paragraph form, but it is often much easier to follow the example to the right.

Let your child create an invitation for your next birthday bash or other get-together. She can decorate the cards by hand, or use a computer to create an original card. Be sure to include all relevant information.



Writing a Thank-You Note

Saying thank you in writing is a good habit for children to learn. Children should write thank-you notes, not only for gifts, but also for thoughtful actions, like an invitation from a friend's parents or dinner or an overnight visit.

Help your child use proper form when composing a thank-you note, even though it may be informal in nature or sent via email.



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