MASTER SKILLS SERIES
AMERICAN EDUCATION PUBLISHING

Math

GRADE 4

STANDARDS BASED

SKILLS

- Skip Counting
- Place Value
- Addition & Subtraction
- Regrouping
- Mental Math
- Rounding
- Estimating
- Averaging
- Multiples
- Multiplication
- Division
- Fractions
- Decimals
- Measurement
- Graphing
- Geometry

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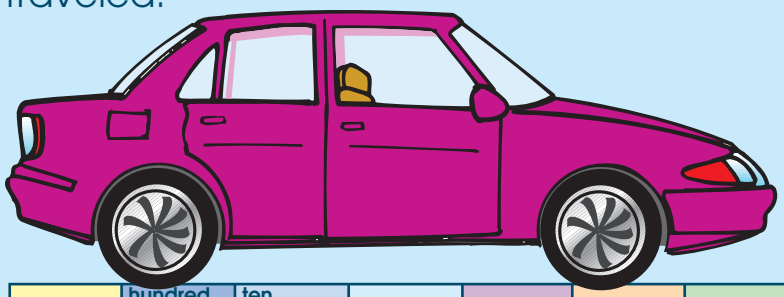
Place Value

Place value is the value of a digit, or numeral, shown by where it is in the number. For example, in 1,234, 1 has the place value of thousands, 2 is hundreds, 3 is tens, and 4 is ones.

Directions: Write the numbers in the correct boxes to find how far the car has traveled.



one thousand

six hundreds

eight ones

nine ten thousands

four tens

two millions

five hundred thousands

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones

How many miles has the car traveled? _____

Directions: In the number . . .

2,386 _____ is in the ones place.

4,957 _____ is in the hundreds place.

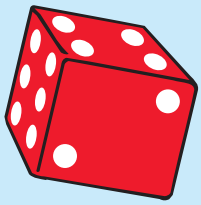
102,432 _____ is in the ten thousands place.

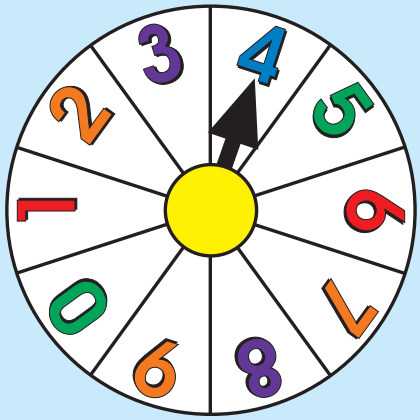
489,753 _____ is in the thousands place.

1,743,998 _____ is in the millions place.

Place Value: Standard Form

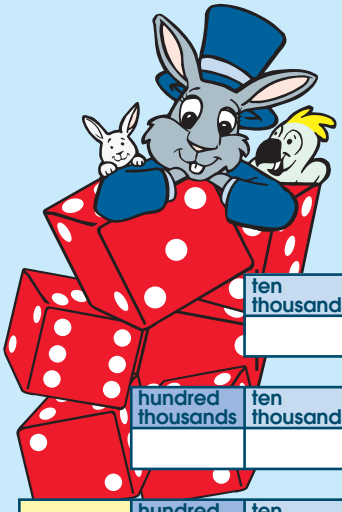
For this activity, you will need a number spinner or number cube.





Directions: Roll the cube or spin the spinner the same number of times as there are spaces in each place value box. The first number rolled or spun goes in the ones place, the second number in the tens place, and so on.

Example:



thousands	hundreds	tens	ones	Standard Form
4	5	6	7	4,567

Directions: Write the number words for the numerals above.

_____

_____

_____

_____

_____

Place Value: Expanded Notation and Standard Form

Directions: Use the number cube or spinner to create numbers for the place value boxes below. Then, write the number in expanded notation and standard form.

Example:

thousands	hundreds	tens	ones
8	6	2	4

Standard Form 8,624

Expanded Notation 8,000 + 600 + 20 + 4

ten thousands	thousands	hundreds	tens	ones

Standard Form _____

Expanded Notation _____

ten thousands	thousands	hundreds	tens	ones

Standard Form _____

Expanded Notation _____

hundred thousands	ten thousands	thousands	hundreds	tens	ones

Standard Form _____

Expanded Notation _____

Directions: Write the value of the 4 in each number below.

742,521 _____

456 _____

65,504 _____

Add 'Em Up!

Addition is "putting together" or adding two or more numbers to find the sum.

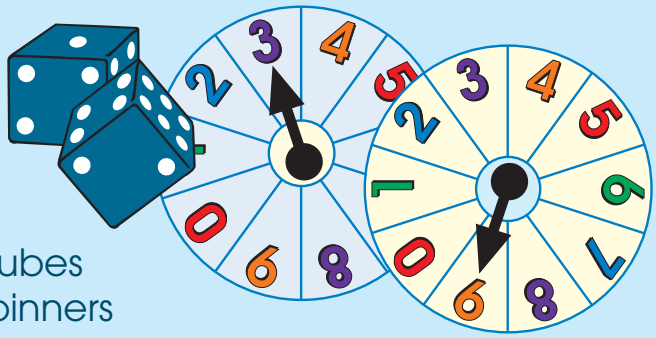
Directions: Add the following problems as quickly as you can.

3 + 2	6 + 4	5 + 4	2 + 9		
6 + 2	4 + 1	9 + 6	7 + 6	8 + 7	8 + 9
9 + 4	1 + 8	4 + 7	7 + 9	5 + 6	5 + 3
		6 + 6	8 + 8	7 + 7	4 + 4
		2 + 8	5 + 2	5 + 6	5 + 8

How quickly did you complete this page? _____

Addition Games

Directions: Play the following addition games to practice your math facts.



1. ROLL 'EM!

For one or more players.

Materials: two number cubes or dice or two number spinners per player

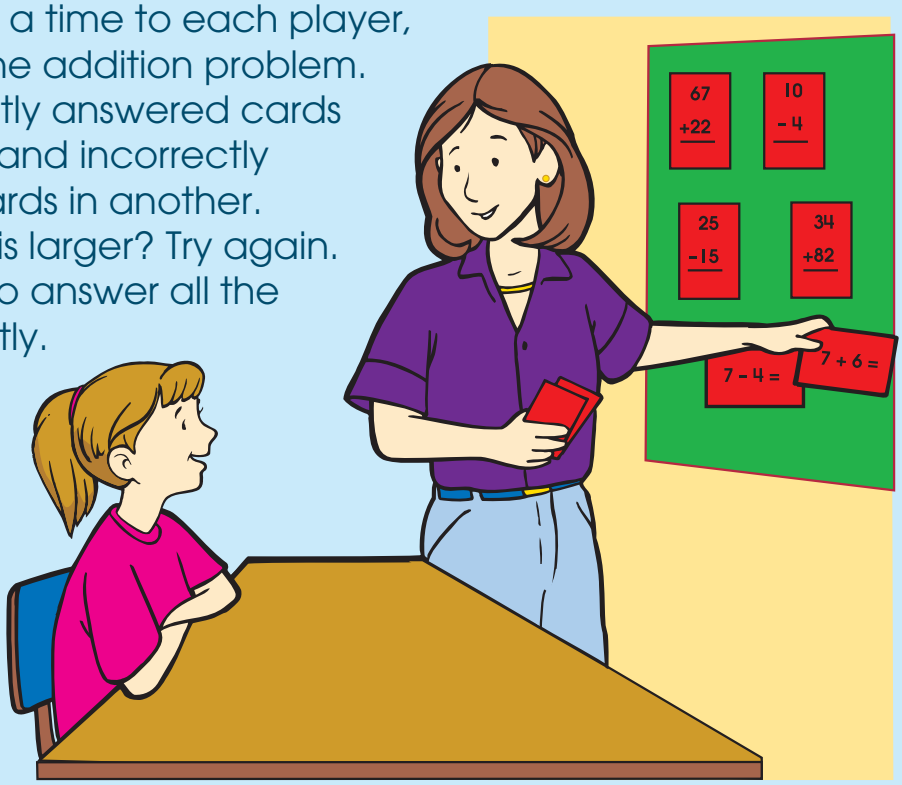
How to play: Each player rolls his or her number cubes (dice) or spins his or her spinners simultaneously. As quickly as possible, he or she adds the two numbers rolled or spun. Whoever is first to add the numbers correctly wins the round.

2. ADD 'EM!

For one or more players.

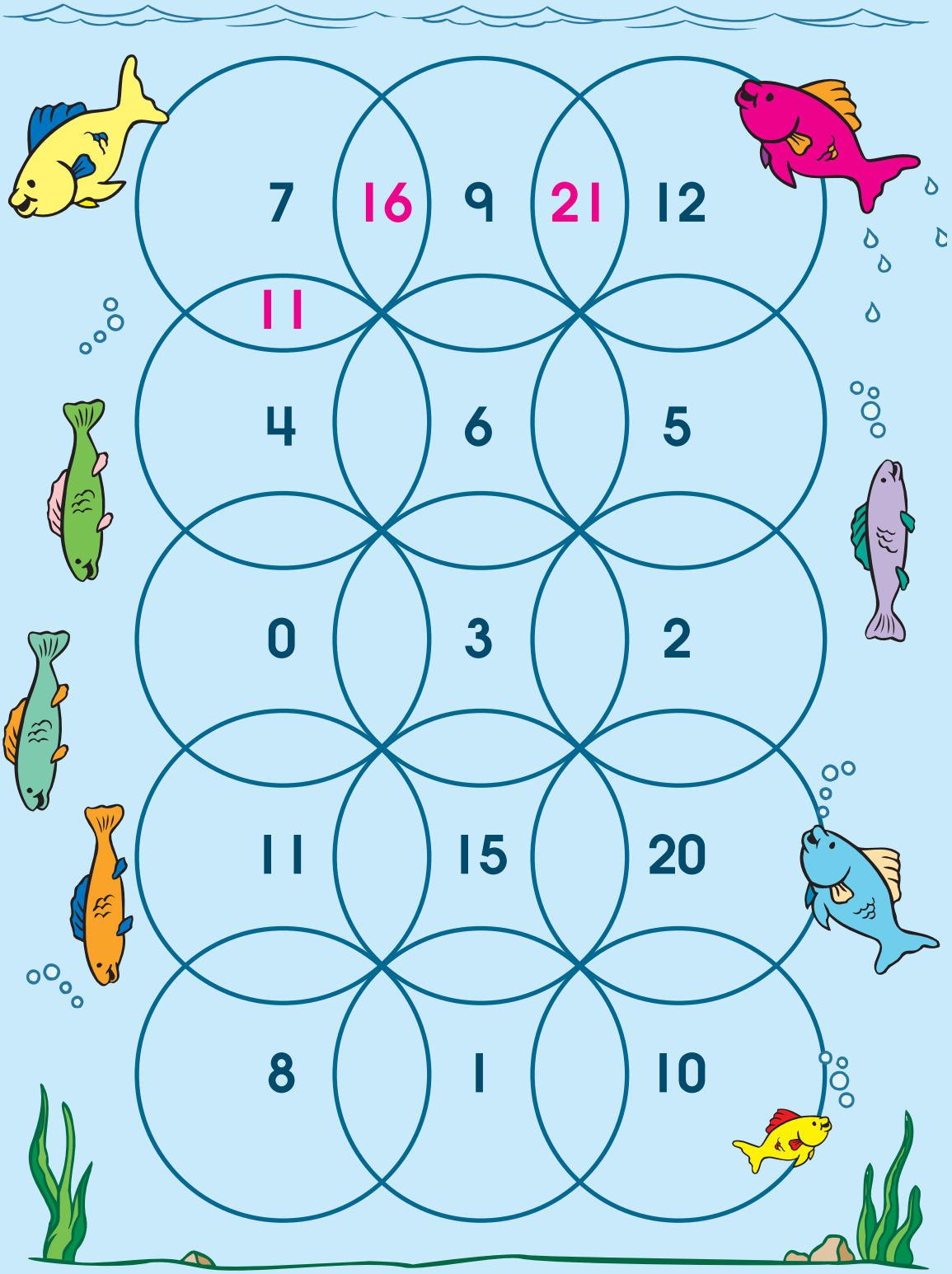
Materials: addition flash cards

How to play: An adult shows the flash cards one at a time to each player, who solves the addition problem. Place correctly answered cards in one stack and incorrectly answered cards in another. Which stack is larger? Try again. This time try to answer all the cards correctly.



Going in Circles

Directions: Where the circles meet, write the sum of the numbers from the circles on the right and left and above and below. The first one shows you what to do.



Leafy Addition

Directions: Add, then color according to the code.

Code:

green — 79 orange — 35 red — 78

yellow — 87 purple — 56 brown — 94

57 + 21

34 + 22

23 + 12

35 + 52

15 + 41

62 + 32

20 + 74

34 + 44

56 + 23

47 + 40

27 + 8

63 + 16

Magic Squares

Directions: Some of the number squares below are "magic" and some are not. Squares that add up to the same number horizontally, vertically, and diagonally are "magic." Add the numbers horizontally and vertically in each square to discover which ones are "magic."

Example:

1.

4	9	2	15
3	5	7	15
8	1	6	15
15	15	15	15

Magic? yes

1.

7	2	1	___
3	4	8	___
5	9	6	___
___	___	___	___

Magic? _____

2.

6	11	4	___
5	7	9	___
10	3	8	___
___	___	___	___

Magic? _____

3.

3	8	1	___
2	4	6	___
7	0	5	___
___	___	___	___

Magic? _____

4.

2	7	0	___
1	3	5	___
6	9	4	___
___	___	___	___

Magic? _____

5.

5	10	3	___
4	6	8	___
9	2	7	___
___	___	___	___

Magic? _____

6.

7	12	5	___
6	8	10	___
11	4	9	___
___	___	___	___

Magic? _____

7.

1	2	3	___
4	5	6	___
7	8	9	___
___	___	___	___

Magic? _____

8.

6	7	4	___
1	5	9	___
8	3	2	___
___	___	___	___

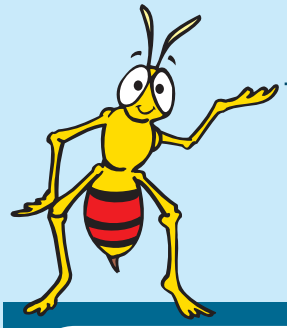
Magic? _____

Challenge: Can you discover a pattern for number placement in the magic squares? Try to make a magic square of your own.

Adding Larger Numbers

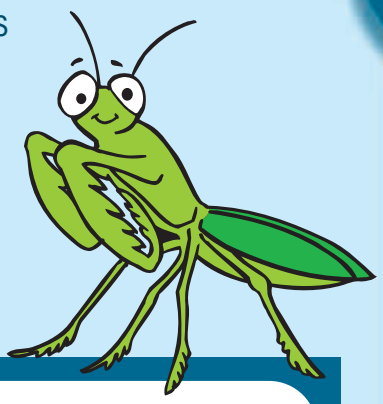
When adding two-, three-, and four-digit numbers, add the ones first, then tens, hundreds, thousands, and so on.

Example:

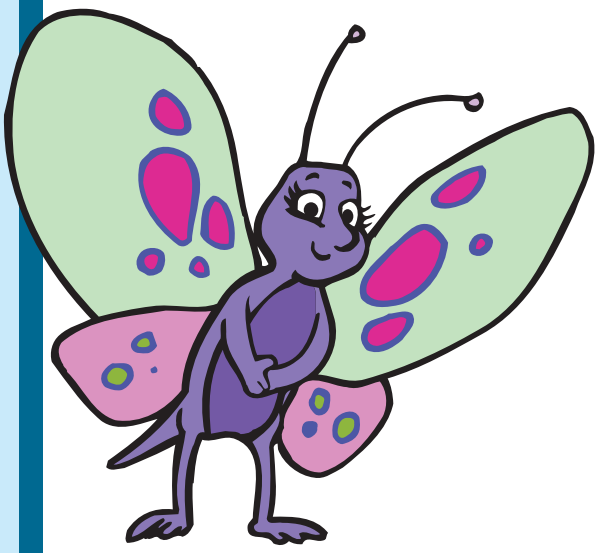


Tens	Ones
5	4
+ 2	5
	9

Tens	Ones
5	4
+ 2	5
7	9



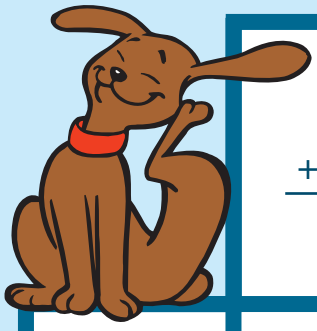
81 + 23	67 + 22	34 + 82	730 + 265
76 + 73	1,803 + 1,104	523 + 476	267 + 12
		4,254 + 545	111 + 82
		164 + 425	727 + 51



Addition: Regrouping

Regrouping uses 10 ones to form one 10, 10 tens to form one hundred, one 10 and 5 ones to form 15, and so on.

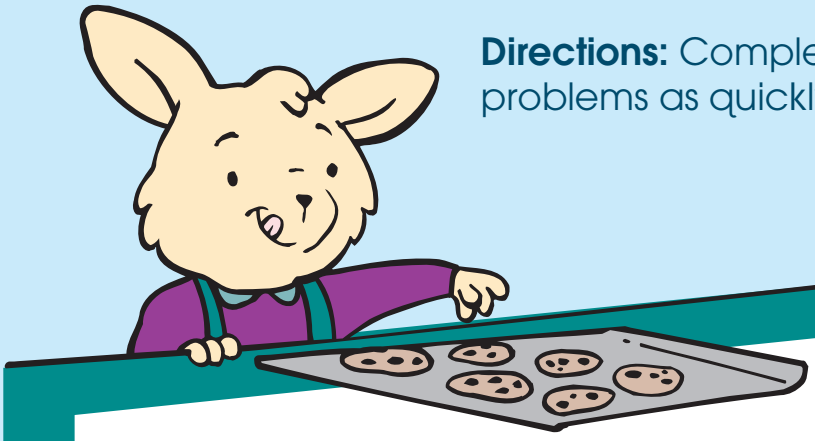
Directions: Add using regrouping. Color in all the boxes with a 5 in the answer to help the dog find its way home.



63 + 22	5,268 4,910 + 1,683	248 + 463	291 + 543	
1,736 + 5,367	2,946 + 7,384	3,245 1,239 + 981	738 + 692	896 + 728
2,603 + 5,004	4,507 + 289	1,483 + 6,753	1,258 + 6,301	27 469 + 6,002
782 + 65	485 + 276	3,421 + 8,064		
48 93 + 26	90 263 + 864	362 453 + 800		

Subtraction

Subtraction is "taking away" or subtracting one number from another.



Directions: Complete the following problems as quickly as you can.

18 − 9	13 − 6	12 − 5	17 − 8	16 − 8
12 − 5	10 − 4	5 − 3	14 − 6	15 − 9
9 − 5	8 − 3	6 − 2	5 − 4	10 − 7
11 − 4	12 − 8	16 − 9	11 − 8	10 − 10

How quickly did you complete this page? _____

Subtracting Larger Numbers

When you subtract larger numbers, subtract the ones first, then the tens, hundreds, thousands, and so on.

Example:

Tens	Ones
9	4
– 2	1
	3

Tens	Ones
9	4
– 2	1
7	3

Directions: Solve these subtraction problems.

29 – 26	99 – 58	359 – 55
735 – 734	849 – 726	7,678 – 4,321
865 – 731	55 – 25	9,876 – 1,234

Subtraction: Regrouping

Directions: Subtract using regrouping.

Examples:

23 − 18	2 13 − 18 5
243 − 96	2 13 − 96 5

76 − 49	94 − 38	156 − 77	341 − 83	726 − 29
806 − 738	743 − 550	903 − 336	647 − 289	254 − 69
961 − 846	573 − 76	604 − 55	265 − 19	372 − 59
358 − 99	147 − 49			

Addition and Subtraction

Directions: Add or subtract, using regrouping when needed.

32 68 + 43	183 246 + 89	456 398 + 597
643 – 377	1,563 – 941	3,586 + 4,218
8,711 – 4,937	9,361 – 7,452	5,734 + 6,298
293 431 + 93	743 – 529	849 250 + 82

68 + 93 + 146 = _____

43 + 745 – 29 = _____

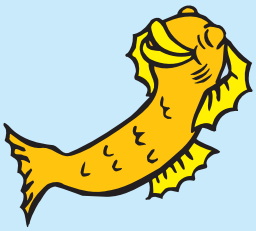
156 + 627 + 541 = _____

Tom walks 389 steps from his house to the store. It is 149 steps to Elm Street. It is 52 steps from Maple Street to the store. How many steps is it from Elm Street to Maple Street?

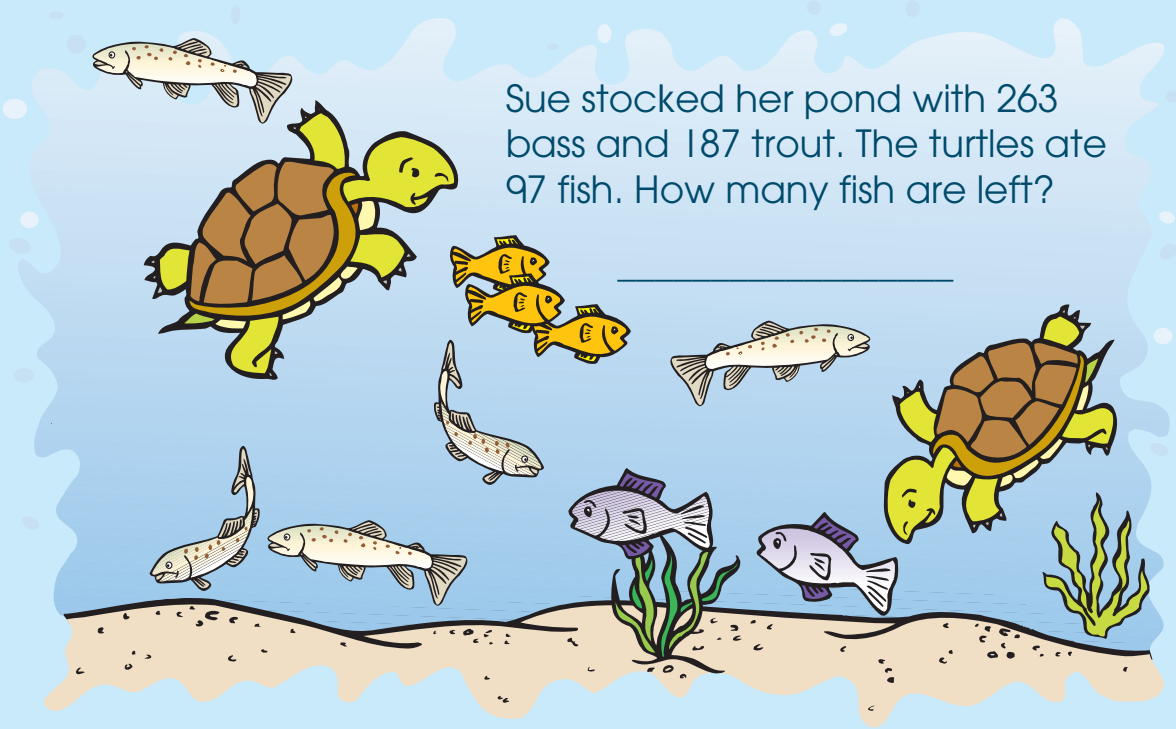
_____

Addition and Subtraction

Directions: Add or subtract, using regrouping when needed.



38 43 + 21	1,269 2,453 + 8,219	5,792 − 4,814	629 491 + 308	4,697 − 2,988
5,280 − 3,147	68 27 + 42	197 436 + 213	7,321 − 2,789	456 + 974
3,932 + 4,681	492 863 + 57	9,873 + 5,483	4,978 + 2,131	6,235 + 2,986



Sue stocked her pond with 263 bass and 187 trout. The turtles ate 97 fish. How many fish are left?

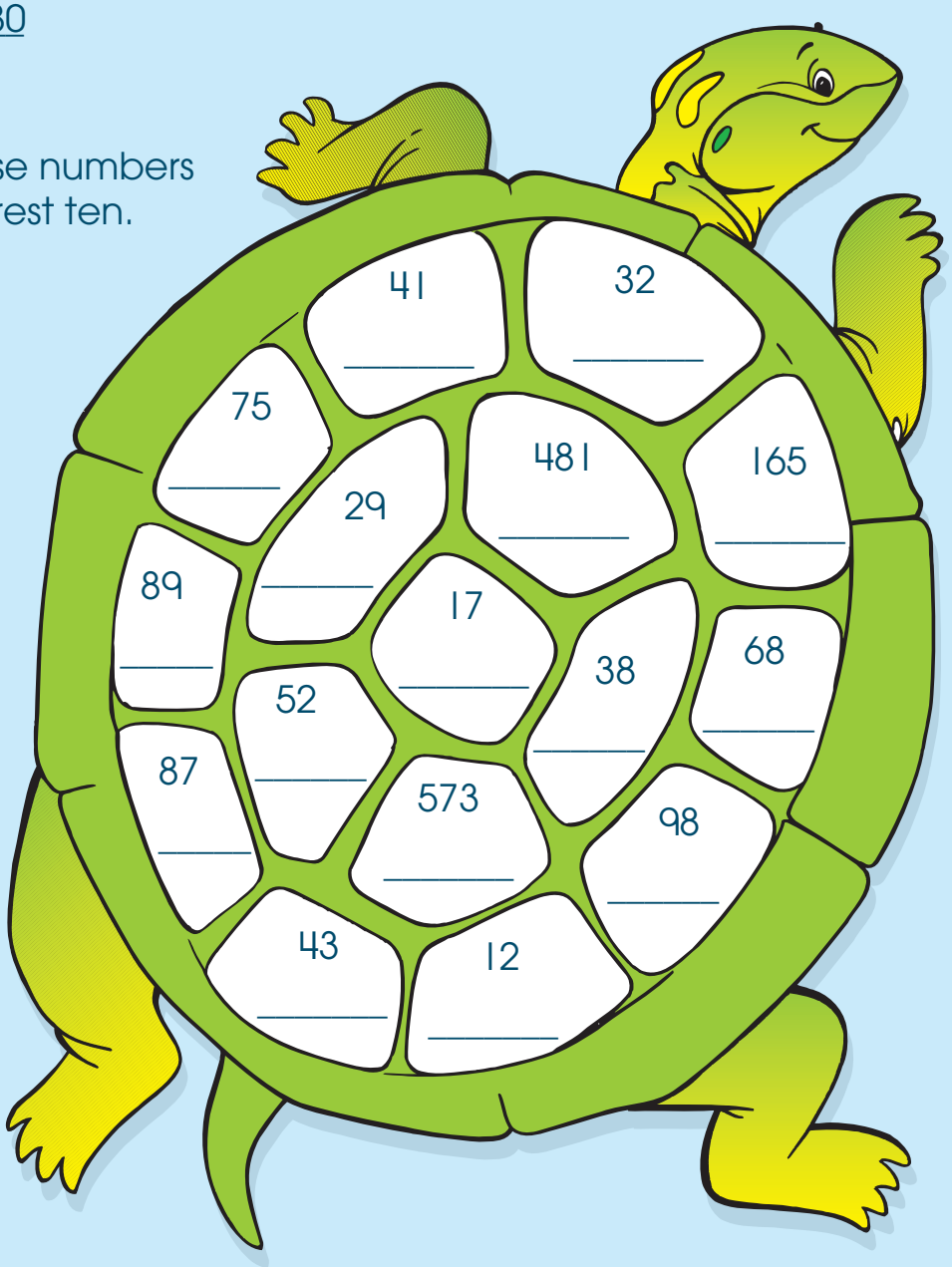
_____

Rounding: Tens

Rounding a number means expressing it to the nearest ten, hundred, thousand, and so on. Rounding makes estimating sums, differences, and products easier. When rounding to the nearest ten, the key number is in the ones place. If the ones digit is 5 or larger, round up to the nearest ten. If the ones digit is 4 or less, round down to the nearest ten.

Example:
Round 81 to the nearest ten.
- 1 is the key digit.
- If it is less than 5, round down.
- Answer: 80

Directions:
Round these numbers to the nearest ten.



Rounding: Hundreds and Thousands

When rounding to the nearest hundred, the key number is in the tens place. If the tens digit is 5 or larger, round up to the nearest hundred. If the tens digit is 4 or less, round down to the nearest hundred.

Examples:

Round 871 to the nearest hundred.
- 7 is the key digit.
- If it is 5 or more, round up.
- Answer: 900

Round 421 to the nearest hundred.
- 2 is the key digit.
- If it is 4 or less, round down.
- Answer: 400

Directions: Round these numbers to the nearest hundred.

255	_____	368	_____
578	_____	562	_____
99	_____	775	_____

When rounding to the nearest thousand, the key number is in the hundreds place. If the hundreds digit is 5 or larger, round up to the nearest thousand. If the hundreds digit is 4 or less, round down to the nearest thousand.

Examples:

Round 7,932 to the nearest thousand.
- 9 is the key digit.
- If it is 5 or more, round up.
- Answer: 8,000

Round 1,368 to the nearest thousand.
- 3 is the key digit.
- If it is 4 or less, round down.
- Answer: 1,000

Directions: Round these numbers to the nearest thousand.

8,631	_____	1,248	_____	798	_____
999	_____	6,229	_____	8,461	_____

Rounding

Directions: Round these numbers to the nearest ten.

18	_____	33	_____	82	_____	56	_____
24	_____	49	_____	91	_____	67	_____

Directions: Round these numbers to the nearest hundred.

243	_____	689	_____	263	_____
162	_____	389	_____	720	_____
351	_____	490	_____	463	_____
846	_____	928	_____	733	_____

Directions: Round these numbers to the nearest thousand.

2,638	_____	3,940	_____	8,653	_____
6,238	_____	1,429	_____	5,061	_____
7,289	_____	2,742	_____	9,460	_____
3,109	_____	4,697	_____	8,302	_____

Directions: Round these numbers to the nearest ten thousand.

11,368	_____	38,421	_____
75,302	_____	67,932	_____
14,569	_____	49,926	_____
93,694	_____	81,648	_____
26,784	_____	87,065	_____

Estimating

To **estimate** means to give an approximate rather than an exact answer. To find an estimated sum or difference, round the numbers of the problem, then add or subtract. If the number has 5 ones or more, round up to the nearest ten. If the number has 4 ones or less, round down to the nearest ten.

Directions: Round the numbers to the nearest ten, hundred, or thousand. Then, add or subtract.

Examples:

Ten

74 →	70
+ 39 →	+ 40
	110

Hundred

352 →	400
− 164 →	− 200
	200

Thousand

7,681 →	8,000
+ 4,321 →	+ 4,000
	12,000

Round these numbers to the nearest ten.

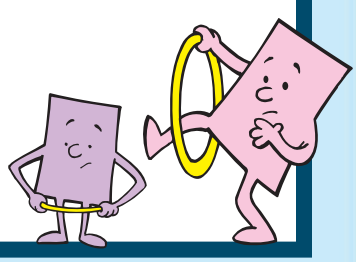
18 →	49 →	67 →
+ 24 →	− 33 →	− 56 →

Round these numbers to the nearest hundred.

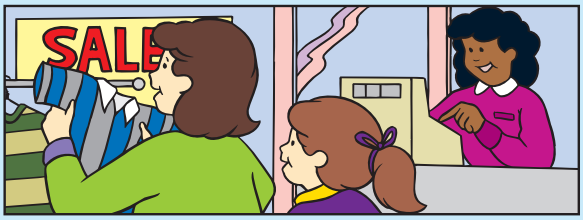
255 →	526 →	102 →
− 99 →	+ 145 →	− 75 →

Round these numbers to the nearest thousand.

8,361 →	9,926 →
+ 889 →	+ 3,645 →



Estimating



Estimating is used for certain mathematical calculations. For example, to figure the cost of several items, round their prices to the nearest dollar, then add up the approximate cost. A store clerk, on the other hand, needs to know the exact prices in order to charge the correct amount.

Directions: In the following situations, write whether an exact or estimated answer should be used.

Example:
You make a deposit in your bank account. Do you want an estimated total or an exact total? Exact

1. Your family just ate dinner at a restaurant. Your parents are trying to calculate the tip for your server. Should they estimate by rounding or use exact numbers? _____

2. You are at the store buying a book, and you want to know if you have enough money to pay for it. Should you estimate or use exact numbers? _____

3. Some friends are planning a trip from New York City to Washington, D.C. They need to know about how far they will travel in miles. Should they estimate or use exact numbers? _____

4. You plan a trip to the zoo. Beforehand, you call the zoo for the price of admission. Should the person at the zoo tell you an estimated or exact price? _____

Estimating

Directions: Round the numbers to the nearest hundred. Then, solve the problems.

Example:
Jack and Alex were playing a computer game. Jack scored 428 points. Alex scored 132. About how many more points did Jack score than Alex?

Round Jack's 428 points down to the nearest hundred, 400.

Round Alex's 132 points down to 100.

Subtract.

estimate

$$\begin{array}{r} 400 \\ -\ 100 \\ \hline 300 \end{array}$$

$\begin{array}{r} 258 \\ +\ 117 \\ \hline 375 \end{array} \rightarrow \begin{array}{r} 300 \\ +\ 100 \\ \hline 400 \end{array}$	$\begin{array}{r} 493 \\ +\ 114 \\ \hline \end{array} \rightarrow$	$\begin{array}{r} 837 \\ -\ 252 \\ \hline \end{array} \rightarrow$
$\begin{array}{r} 928 \\ -\ 437 \\ \hline \end{array} \rightarrow$	$\begin{array}{r} 700 \\ -\ 491 \\ \hline \end{array} \rightarrow$	$\begin{array}{r} 319 \\ +\ 630 \\ \hline \end{array} \rightarrow$
$\begin{array}{r} 332 \\ +\ 567 \\ \hline \end{array} \rightarrow$	$\begin{array}{r} 493 \\ -\ 162 \\ \hline \end{array} \rightarrow$	$\begin{array}{r} 1{,}356 \\ +\ 2{,}941 \\ \hline \end{array} \rightarrow$

Estimating

Directions: Follow the steps to estimate the time it will take to read a book.

Step 1: 

Write down the number of pages in the book you want to read. _____

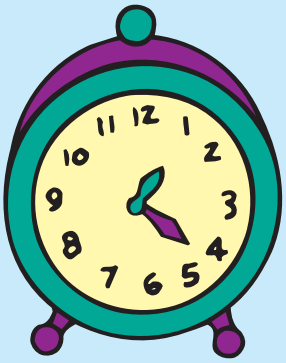
Step 2: Pick a page that is of average length. Time yourself to see how long it takes you to read the page.

_____

Step 3: Suppose it took you 4 minutes to read the page. How many minutes will it take to read the book?

_____

Step 4: Estimate the number of minutes it will take to read the book by rounding up to the nearest hundred.

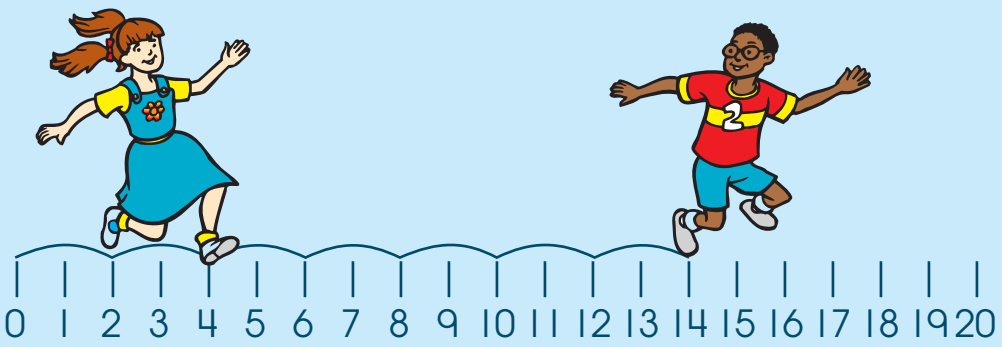


_____

Skip Counting

Skip counting is a quick way to count by skipping numbers. For example, when you skip count by twos, you count 2, 4, 6, 8, and so on. You can skip count by many different numbers such as twos, fours, fives, tens, and hundreds.

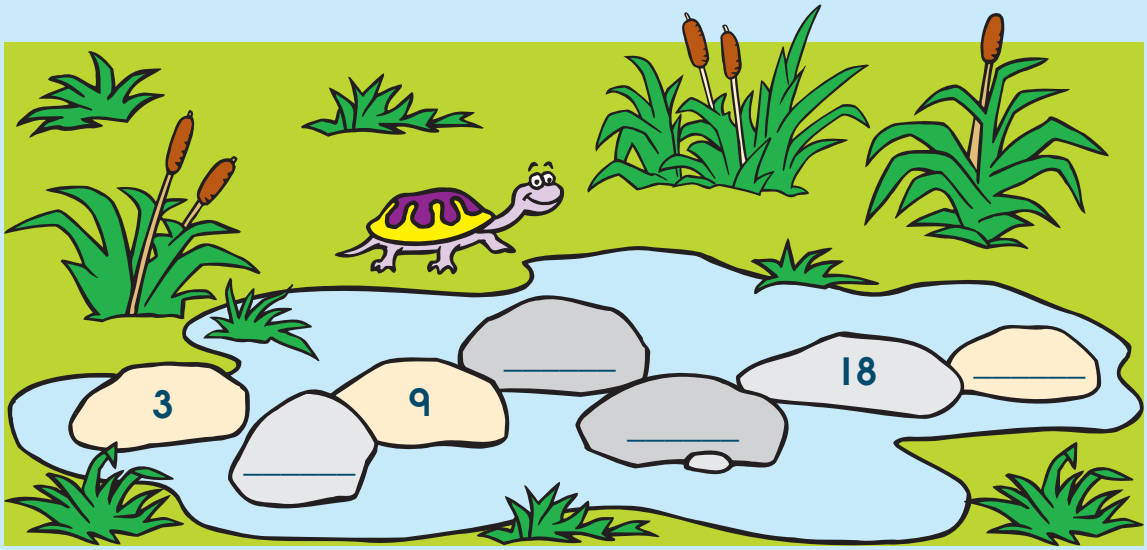
The illustration below shows skip counting to 14.



Directions: Use the number line to help you skip count by twos from 0 to 20.

0, ____, ____, ____, 8, _____, _____, 14, _____, _____, _____

Directions: Skip count by threes by filling in the rocks across the pond.

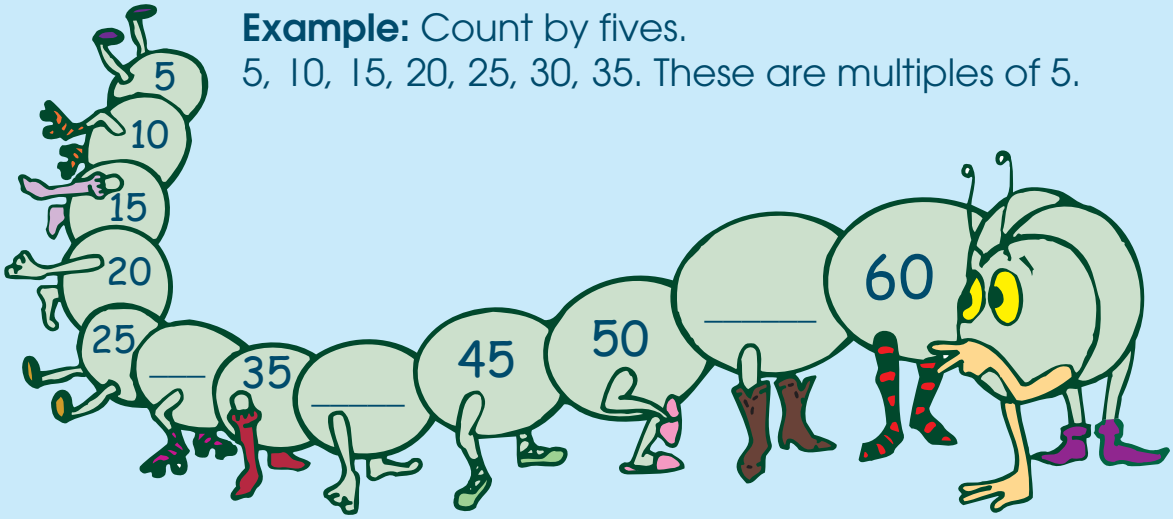


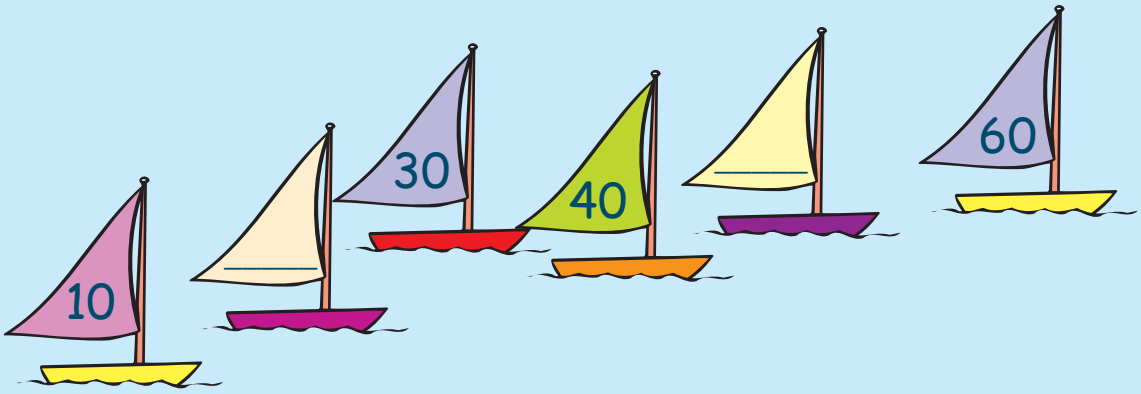
Multiples

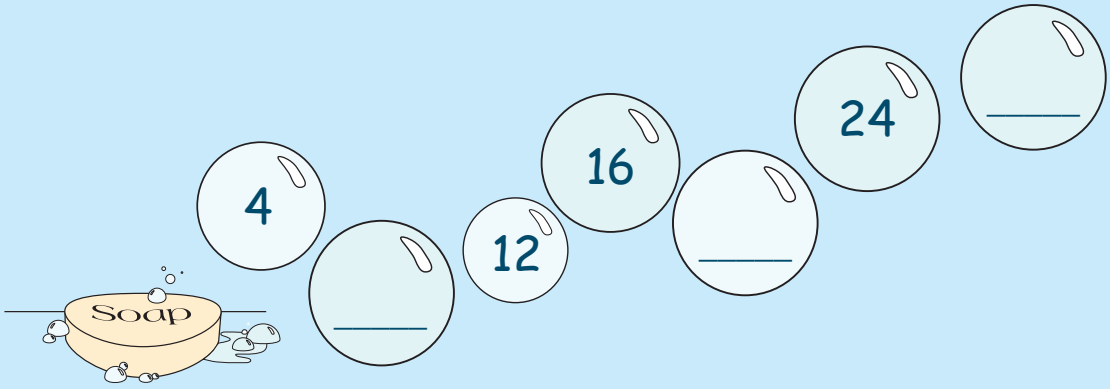
A multiple is the product of a specific number and any other number. For example, the multiples of 2 are 2 (2 x 1), 4 (2 x 2), 6, 8, 10, 12, and so on.

Directions: Write the missing multiples.

Example: Count by fives.
5, 10, 15, 20, 25, 30, 35. These are multiples of 5.







Review

Directions: Add or subtract using regrouping.

67 93 + 48	5,029 – 3,068	732 801 + 18	2,467 + 3,184	8,453 – 6,087

Directions: Write the numbers in the boxes. In the blanks, write the numbers in standard form.

eight millions, four hundred thousands, zero ten thousands, zero thousands, nine hundreds, five tens, two ones

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones

_____

five hundred thousands, three ten thousands, five thousands, zero hundreds, four tens, one one

hundred thousands	ten thousands	thousands	hundreds	tens	ones

_____

Directions: Write the missing multiples in the blanks.

6, 12, 18, _____, 30, _____

3, _____, _____, 12, 15

4, _____, 12, 16, _____, 24

_____, 10, 15, _____, _____

Multiplication

Multiplication is a short way to find the sum of adding the same number a certain amount of times, such as 7 x 4 = 28 instead of 7 + 7 + 7 + 7 = 28.

Directions: Multiply as quickly as you can.

4 x 7	7 x 6	0 x 8	7 x 2	9 x 5	1 x 5
8 x 3	7 x 1	4 x 2	9 x 6	8 x 5	6 x 7
3 x 5	7 x 8	3 x 9	5 x 6	9 x 9	7 x 5
			3 x 6	2 x 8	8 x 6
				0 x 7	3 x 3

How quickly did you complete this page? _____

Fact Factory

Factors are the numbers multiplied together in a multiplication problem. The **product** is the answer.

Directions: Write the missing factors or products.

x	5
1	5
5	
4	20
6	
3	
2	10
7	
9	45

x	9
8	72
3	
4	
9	
6	54
7	
2	
1	9

x	7
2	14
5	
	42
8	
7	
4	
	21
0	

x	3
7	
4	
6	
1	
3	
2	
5	
8	

x	1
1	
12	
10	
3	3
5	
7	
6	
4	

x	8
9	
8	
4	
5	
6	
7	
3	
2	

x	2
	24
	2
	22
	4
	20
	6
	18
	8

x	4
2	
4	
6	
8	
	4
	12
	20
	28

x	6
7	
6	
5	
4	
3	
2	
1	
0	

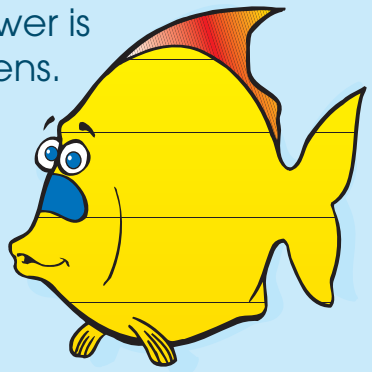
x	10
	20
3	
	40
5	
	60
7	
	80
9	

x	11
4	
7	
9	
10	
3	
5	
6	
8	

x	12
1	
2	24
3	
4	48
5	
6	
7	
8	

Multiplication: Tens, Hundreds, Thousands

When multiplying a number by 10, the answer is the number with a 0. It is like counting by tens.



Examples:

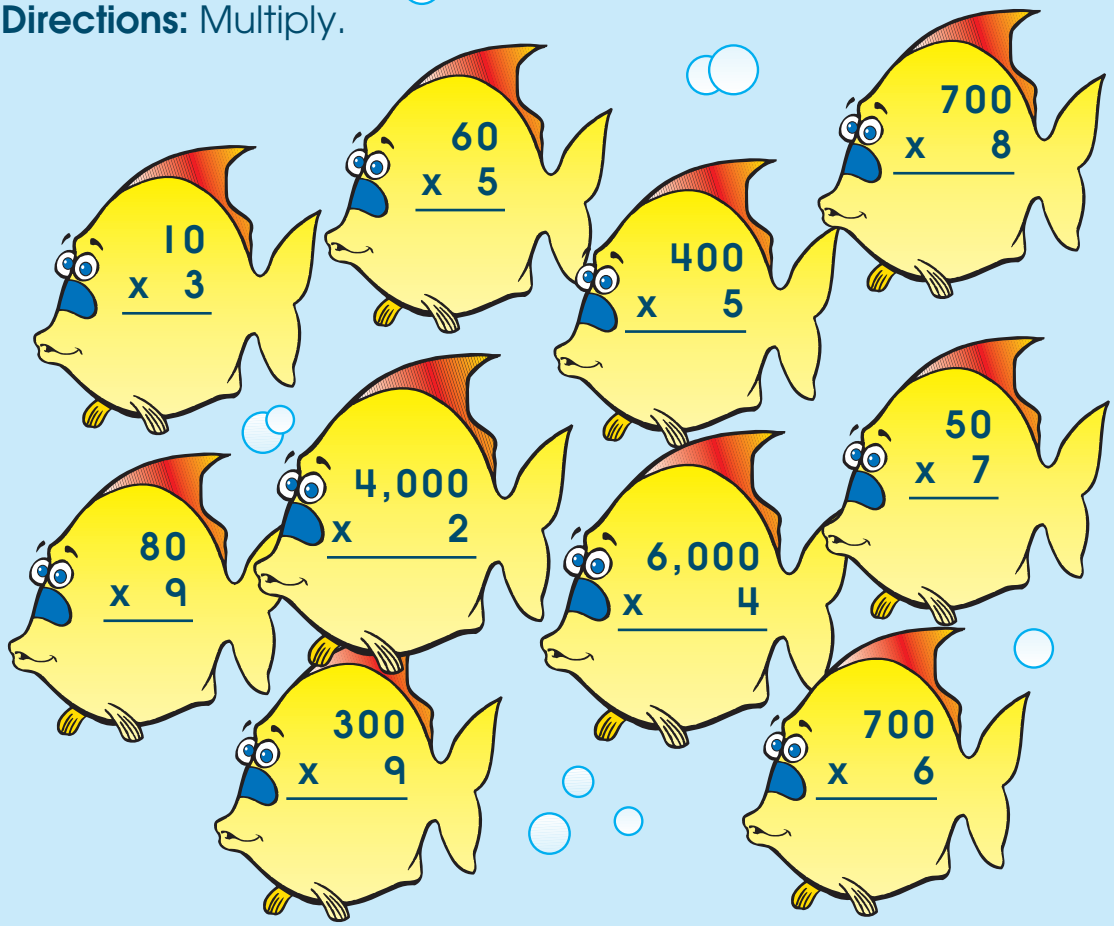
10	10	10	10	10	10
x 1	x 2	x 3	x 4	x 5	x 6
10	20	30	40	50	60

When multiplying a number by 100, the answer is the number with two 0's. When multiplying by 1,000, the answer is the number with three 0's.

Examples:

100	100	100	1,000	1,000	1,000
x 1	x 2	x 3	x 1	x 2	x 3
100	200	300	1,000	2,000	3,000

Directions: Multiply.



Multiplication: One-Digit Numbers Times Two-Digit Numbers

Follow the steps for multiplying a one-digit number by a two-digit number using regrouping.

Example: **Step 1:** Multiply the ones. Regroup.

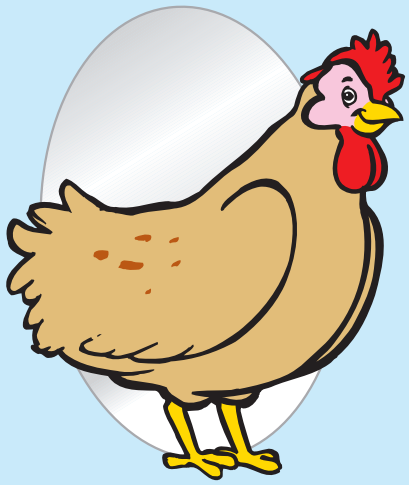
$$\begin{array}{r} {\scriptstyle 2}\,54 \\ \times\ 7 \\ \hline 8 \end{array}$$

Step 2: Multiply the tens. Add two tens.

$$\begin{array}{r} {\scriptstyle 2}\,54 \\ \times\ 7 \\ \hline 378 \end{array}$$

Directions: Multiply.

$\begin{array}{r} 27 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 91 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ \times\ 7 \\ \hline \end{array}$
$\begin{array}{r} 64 \\ \times\ 5 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ \times\ 6 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ \times\ 7 \\ \hline \end{array}$



$\begin{array}{r} 47 \\ \times\ 8 \\ \hline \end{array}$	$\begin{array}{r} 64 \\ \times\ 9 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ \times\ 8 \\ \hline \end{array}$
$\begin{array}{r} 13 \\ \times\ 7 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times\ 4 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ \times\ 8 \\ \hline \end{array}$

The chickens on the Smith farm produce 48 dozen eggs each day. How many dozen eggs do they produce in 7 days? _____

Multiplication: Two-Digit Numbers Times Two-Digit Numbers

Follow the steps for multiplying a two-digit number by a two-digit number using regrouping.

Example: **Step 1:** Multiply the ones. Regroup.

$$\begin{array}{r} 63 \\ \times\ 68 \\ \hline \end{array} \qquad \begin{array}{r} {\scriptstyle 2}\,63 \\ \times\ 68 \\ \hline 504 \end{array}$$

Step 2: Multiply the tens. Regroup. Add.

$$\begin{array}{r} {\scriptstyle 1}\,63 \\ \times\ 68 \\ \hline 3{,}780 \end{array} \qquad \begin{array}{r} 63 \\ \times\ 68 \\ \hline 504 \\ +\ 3{,}780 \\ \hline 4{,}284 \end{array}$$

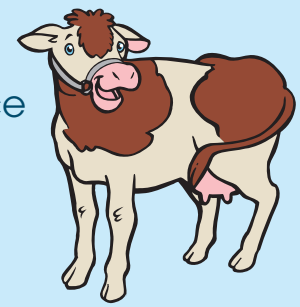
Hint: When multiplying by the tens, start writing the number in the tens place. Use a zero as a placeholder in the ones place.

Directions: Multiply.

$\begin{array}{r} 12 \\ \times\ 55 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ \times\ 15 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ \times\ 27 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ \times\ 39 \\ \hline \end{array}$	$\begin{array}{r} 99 \\ \times\ 13 \\ \hline \end{array}$
$\begin{array}{r} 43 \\ \times\ 26 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ \times\ 17 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ \times\ 86 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ \times\ 72 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ \times\ 62 \\ \hline \end{array}$

The Jones farm has 24 cows that each produce 52 quarts of milk a day. How many quarts are produced each day altogether?

_____



Multiplication: Two-Digit Numbers Times Three-Digit Numbers

Follow the steps for multiplying a two-digit number by a three-digit number using regrouping.

Example: **Step 1:** Multiply the ones. Regroup.

$$\begin{array}{r} 287 \\ \times\ 43 \\ \hline \end{array} \qquad \begin{array}{r} {\scriptstyle 2\ 2}\\ 287 \\ \times\ 43 \\ \hline 861 \end{array}$$

Step 2: Multiply the tens. Regroup. Add.

$$\begin{array}{r} {\scriptstyle 3\ 2}\\ 287 \\ \times\ 43 \\ \hline 11{,}480 \end{array} \qquad \begin{array}{r} 287 \\ \times\ 43 \\ \hline 861 \\ +\ 11{,}480 \\ \hline 12{,}341 \end{array}$$

Directions: Multiply.

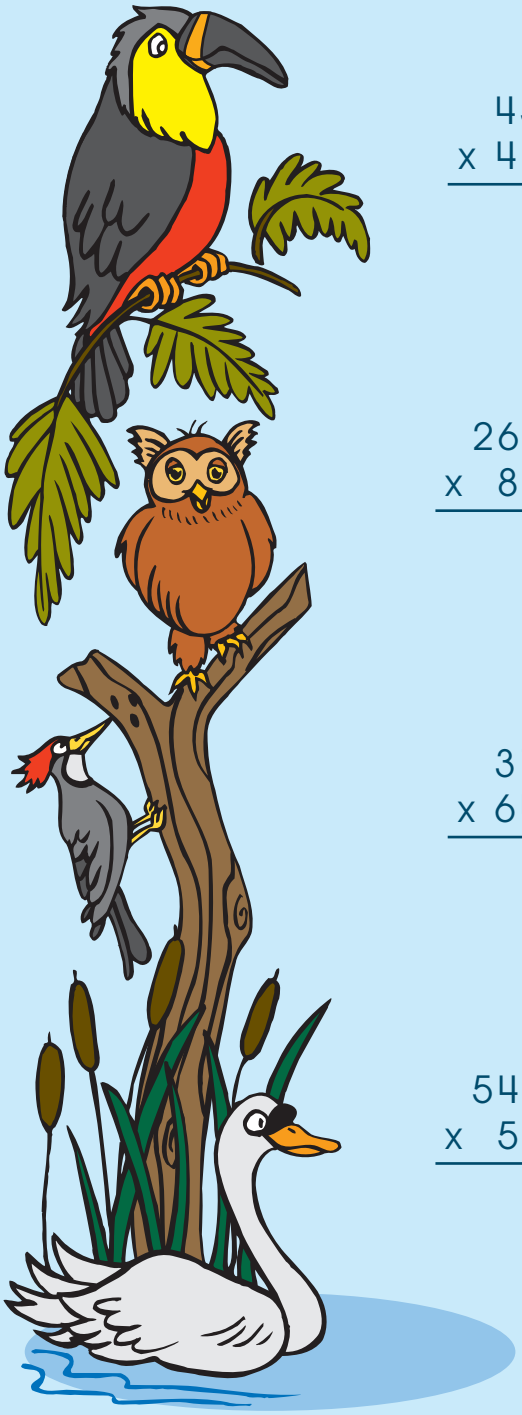
At the Douglas berry farm, workers pick 378 baskets of peaches each day. Each basket holds 65 peaches. How many peaches are picked each day?

_____

Multiplication: Two-Digit Numbers Times Two- and Three-Digit Numbers

Directions: Multiply.

25 x 72	70 x 66	844 x 24	124 x 15
45 x 41	76 x 78	74 x 69
261 x 88	48 x 36	263 x 57
37 x 64	52 x 43	321 x 78
544 x 58	797 x 24	998 x 37



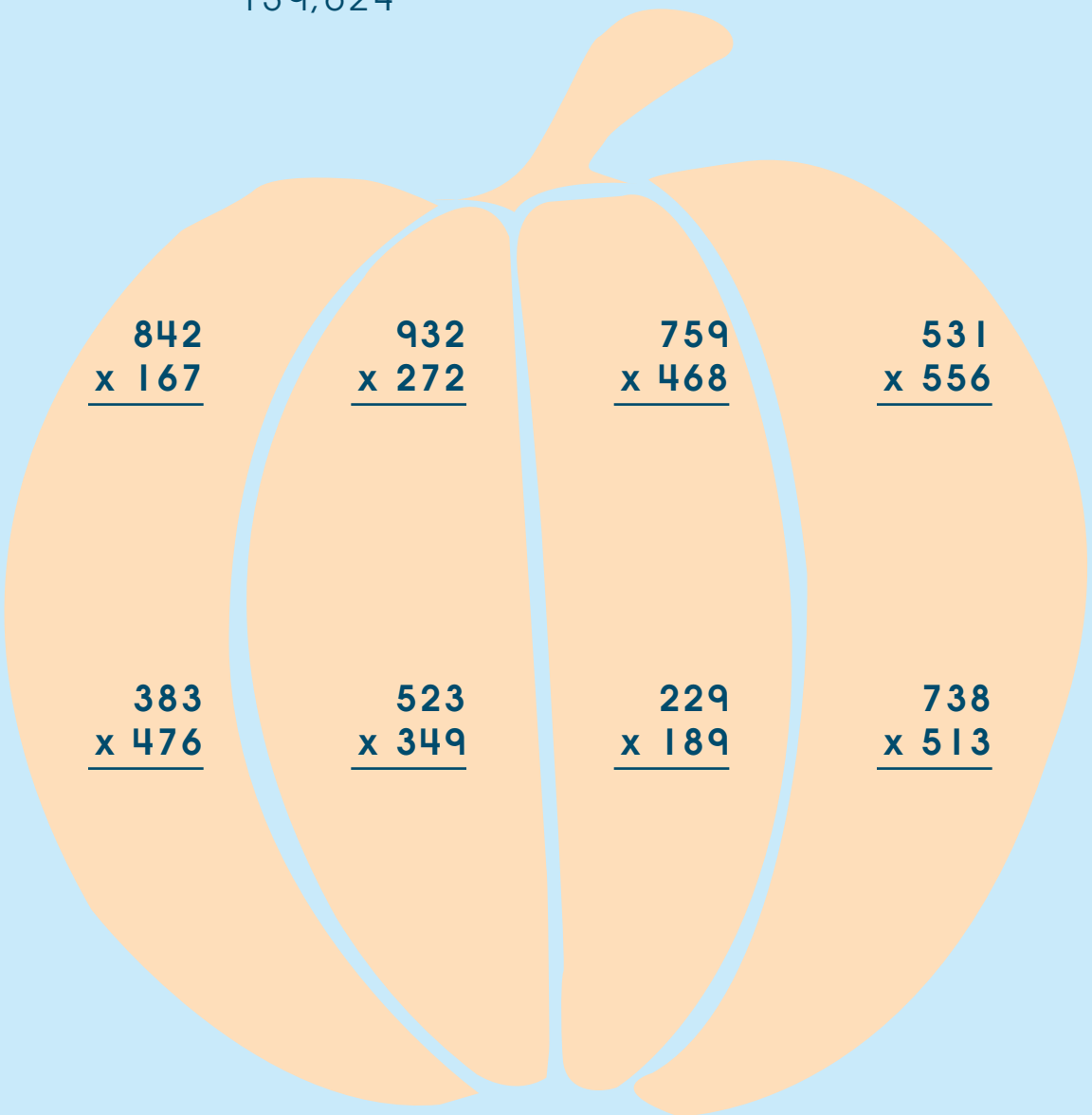
Multiplication: Two-Digit Numbers Times Three-Digit Numbers

Directions: Multiply. Regroup when needed.

Example:

$$\begin{array}{r} 563 \\ \times\ 248 \\ \hline 4{,}504 \\ 22{,}520 \\ +\ 112{,}600 \\ \hline 139{,}624 \end{array}$$

Hint: When multiplying by the tens, start writing the number in the tens place. When multiplying by the hundreds, start in the hundreds place.



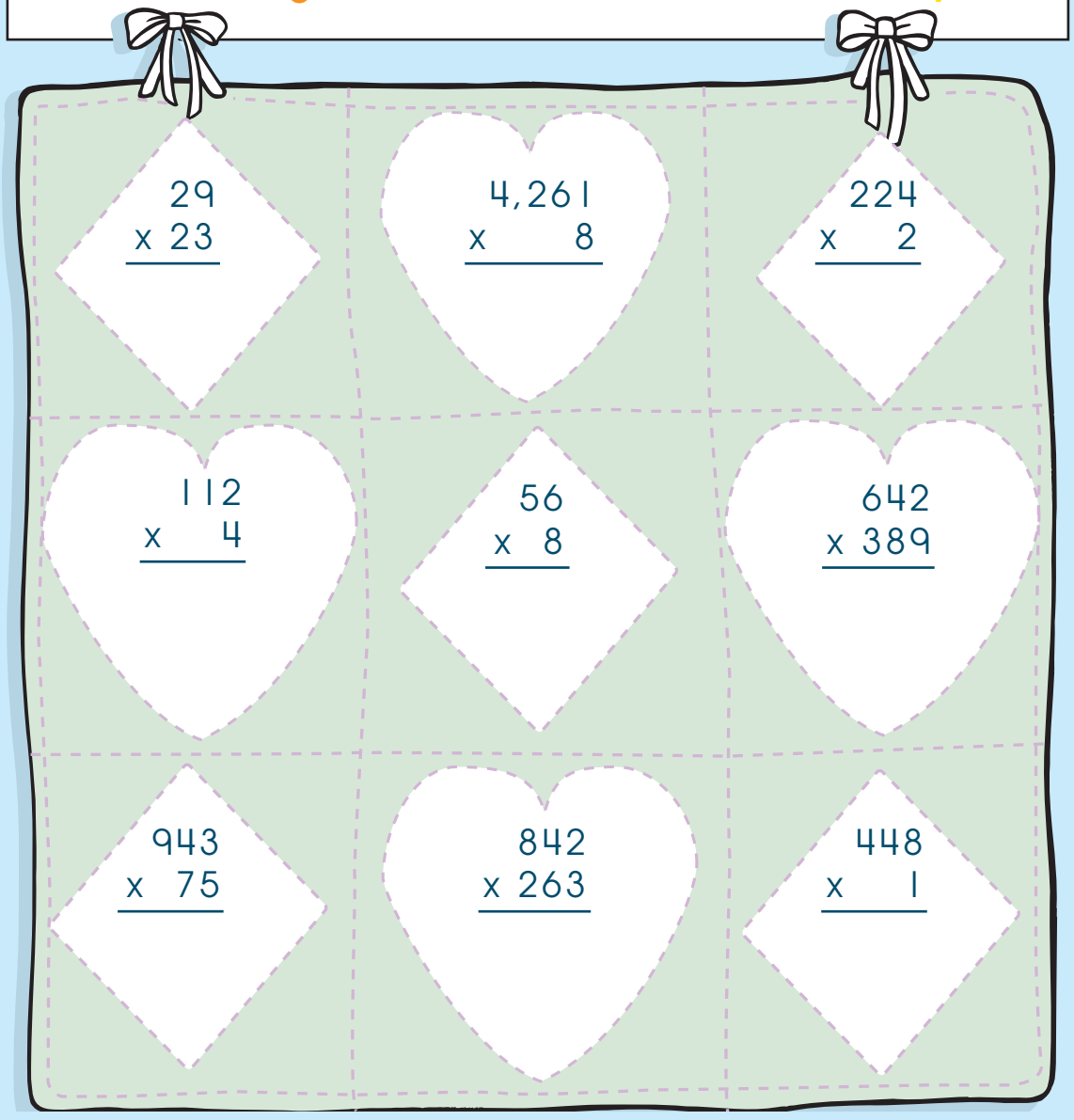
842 x 167	932 x 272	759 x 468	531 x 556
383 x 476	523 x 349	229 x 189	738 x 513

James grows pumpkins on his farm. He has 362 rows of pumpkins. There are 593 pumpkins in each row. How many pumpkins does James grow? _____

Multiplication Practice

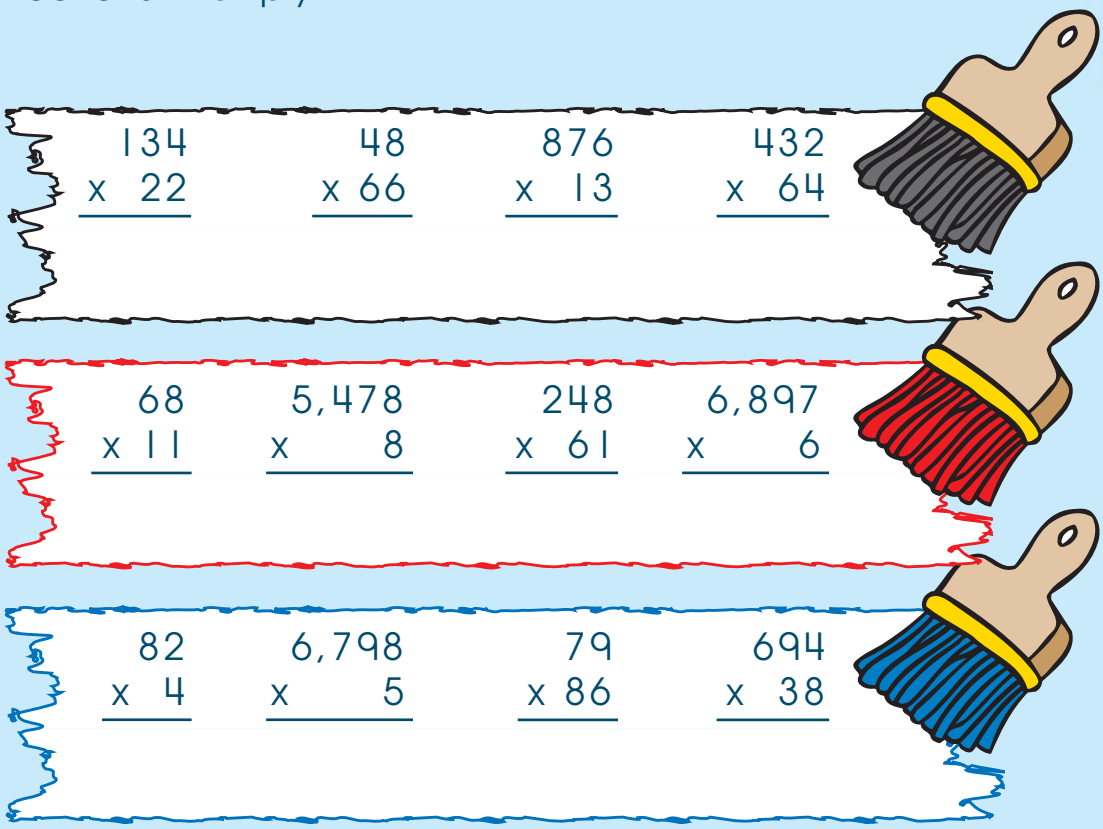
Directions: Multiply. Use the code to color the quilt.

70,725 — **red**	667 — **green**	448 — **white**
249,738 — **orange**	34,088 — **blue**	221,446 — **yellow**



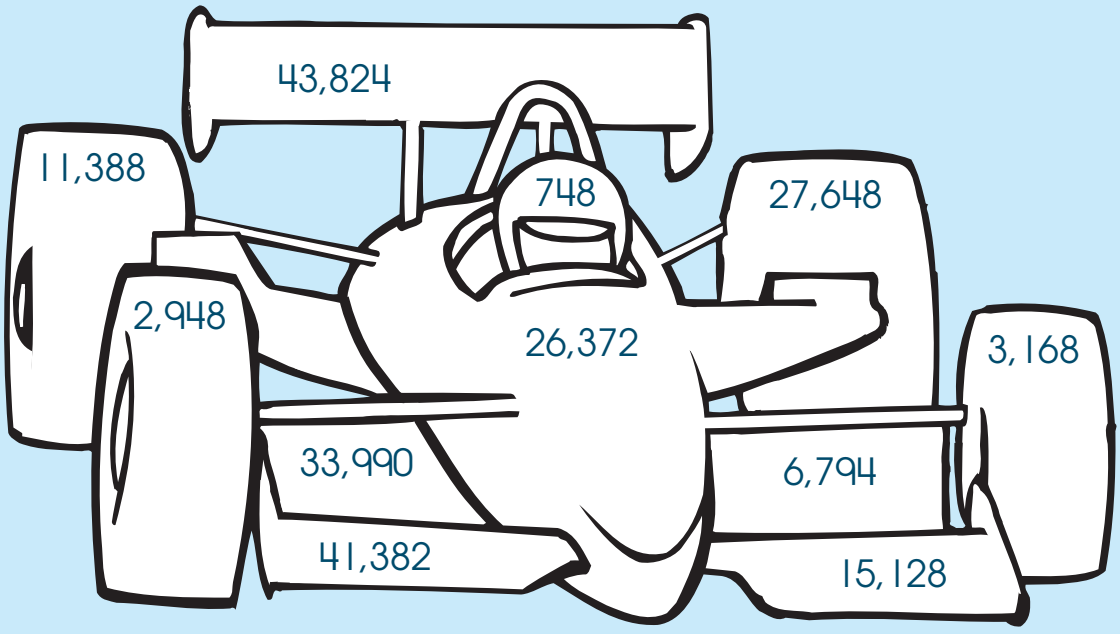
Multiplication Drill

Directions: Multiply.



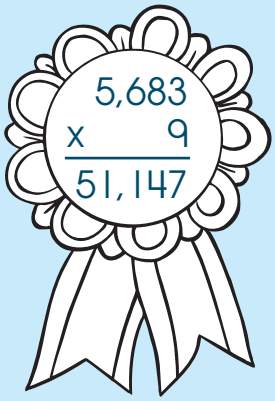
134 x 22	48 x 66	876 x 13	432 x 64
68 x 11	5,478 x 8	248 x 61	6,897 x 6
82 x 4	6,798 x 5	79 x 86	694 x 38

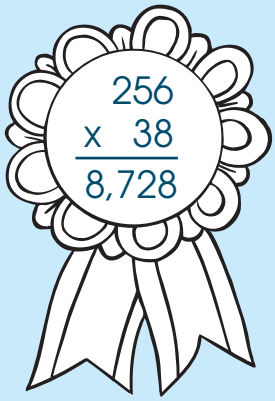
Directions: Color the picture by matching each number with its paintbrush.

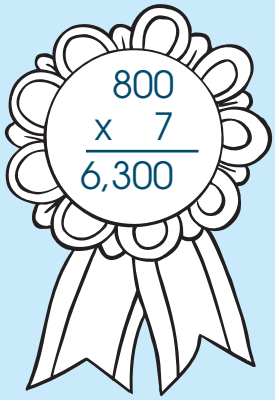


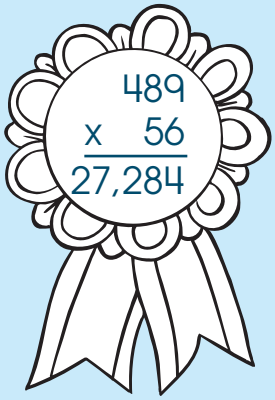
Review

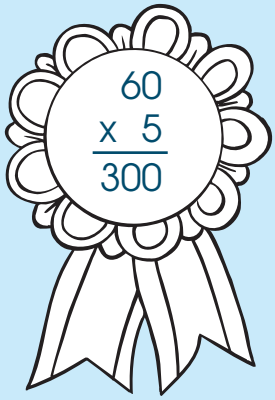
Directions: Multiply. Use the box to solve the problem. Color the ribbons blue if the answer is correct.











Division

Division is a way to find out how many times one number is contained in another number. For example, 28 ÷ 7 = 4 means that there are 4 groups of 7 in 28.

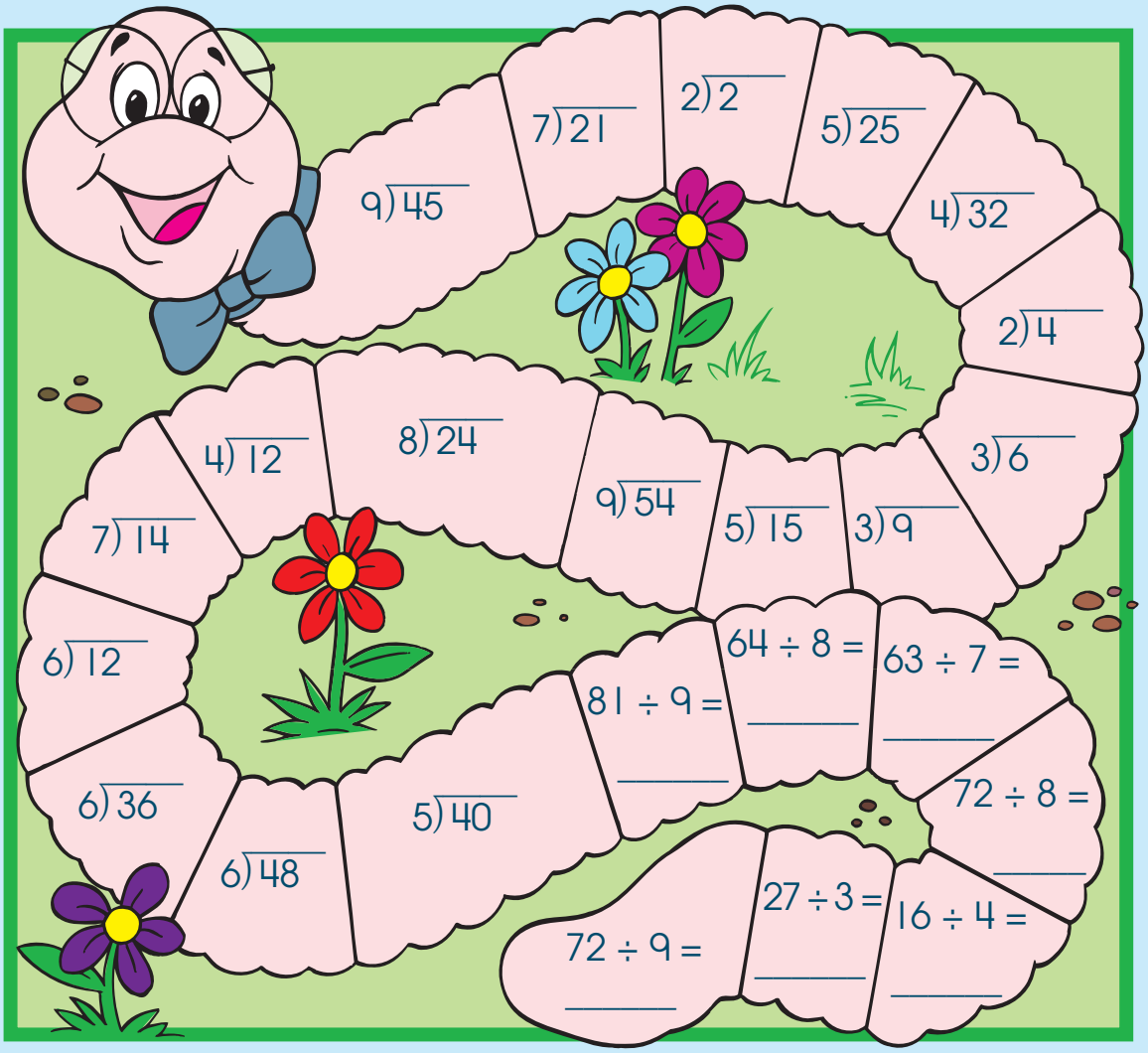
Division problems can be written two ways: 36 ÷ 6 or $6\overline{)36}$

These are the parts of a division problem:

dividend → **36 ÷ 6 = 6**
divisor **quotient**

6 ← quotient
6)36 ← dividend
divisor

Directions: Divide.

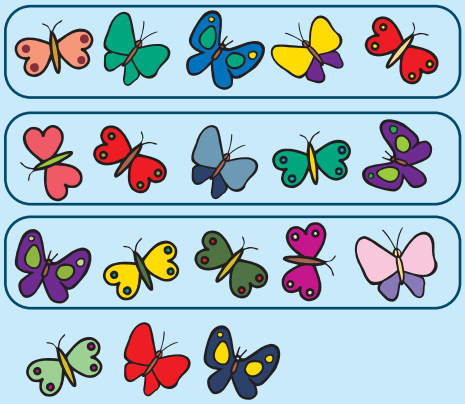


Division With Remainders

Sometimes groups of objects or numbers cannot be divided into equal groups. The **remainder** is the number left over in the quotient of a division problem. The remainder must be smaller than the divisor.

Example:

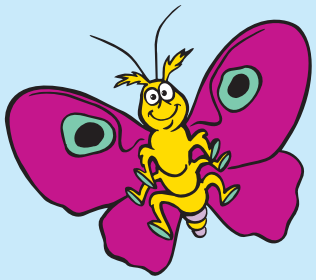
Divide 18 butterflies into groups of 5.
You have 3 equal groups,
with 3 butterflies left over.



$$18 \div 5 = 3 \text{ R}3$$

or

$$5\overline{)18} \quad 3 \text{ R}3$$
$$\underline{-15}$$
$$3$$



Directions: Divide. Some problems may have remainders.

$9\overline{)84}$ $7\overline{)65}$ $8\overline{)25}$ $5\overline{)35}$ $5\overline{)34}$

$4\overline{)25}$ $6\overline{)56}$ $4\overline{)7}$ $4\overline{)16}$ $8\overline{)37}$

$7\overline{)27}$ $2\overline{)5}$ $2\overline{)4}$ $8\overline{)73}$ $4\overline{)9}$

Division: Larger Numbers

Follow the steps for dividing larger numbers.

Example: $3\overline{)66}$

Step 1: Divide the tens first.

$$\begin{array}{r} 2 \\ 3\overline{)66} \\ -\,6 \\ \hline 06 \end{array}$$

Step 2: Divide the ones next.

$$\begin{array}{r} 22 \\ 3\overline{)66} \\ -\,6 \\ \hline 06 \\ -\,\,6 \\ \hline 0 \end{array}$$

Directions: Divide.

$4\overline{)84}$ $2\overline{)90}$ $2\overline{)64}$ $2\overline{)50}$ $3\overline{)45}$

In some larger numbers, the divisor goes into the first two digits of the dividend.

Example: $9\overline{)729}$

$$\begin{array}{r} 8 \\ 9\overline{)729} \\ -\,72 \\ \hline 09 \end{array}$$

$$\begin{array}{r} 81 \\ 9\overline{)729} \\ -\,72 \\ \hline 09 \\ -\,\,9 \\ \hline 0 \end{array}$$

Directions: Divide.

$7\overline{)630}$ $5\overline{)125}$ $6\overline{)486}$ $5\overline{)100}$ $6\overline{)540}$

Division

Directions: Divide.

7) 860

6) 611

8) 279

4) 338

6) 979

3) 792

5) 463

6) 940

4) 647

3) 814

7) 758

5) 356

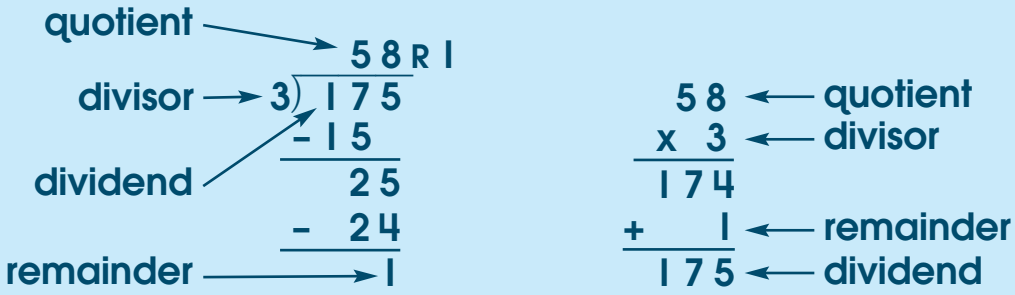
The music store has 491 CDs. The store sells 8 CDs a day. How many days will it take to sell all of the CDs?

_____

Division: Checking the Answers

To check a division problem, multiply the quotient by the divisor. Add the remainder. The answer will be the dividend.

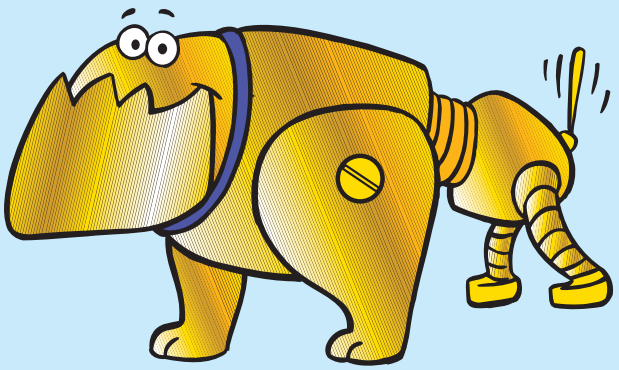
Example:



Directions: Divide each problem, then draw a line from the division problem to the correct checking problem.

33 x 7	53 x 7 + 2	97 x 7 + 3	113 x 7 + 1
7) 682	7) 231	7) 373	7) 792

The toy factory puts 7 robot dogs in each box. The factory has 256 robot dogs. How many boxes will they need?



_____

Division: Checking the Answers

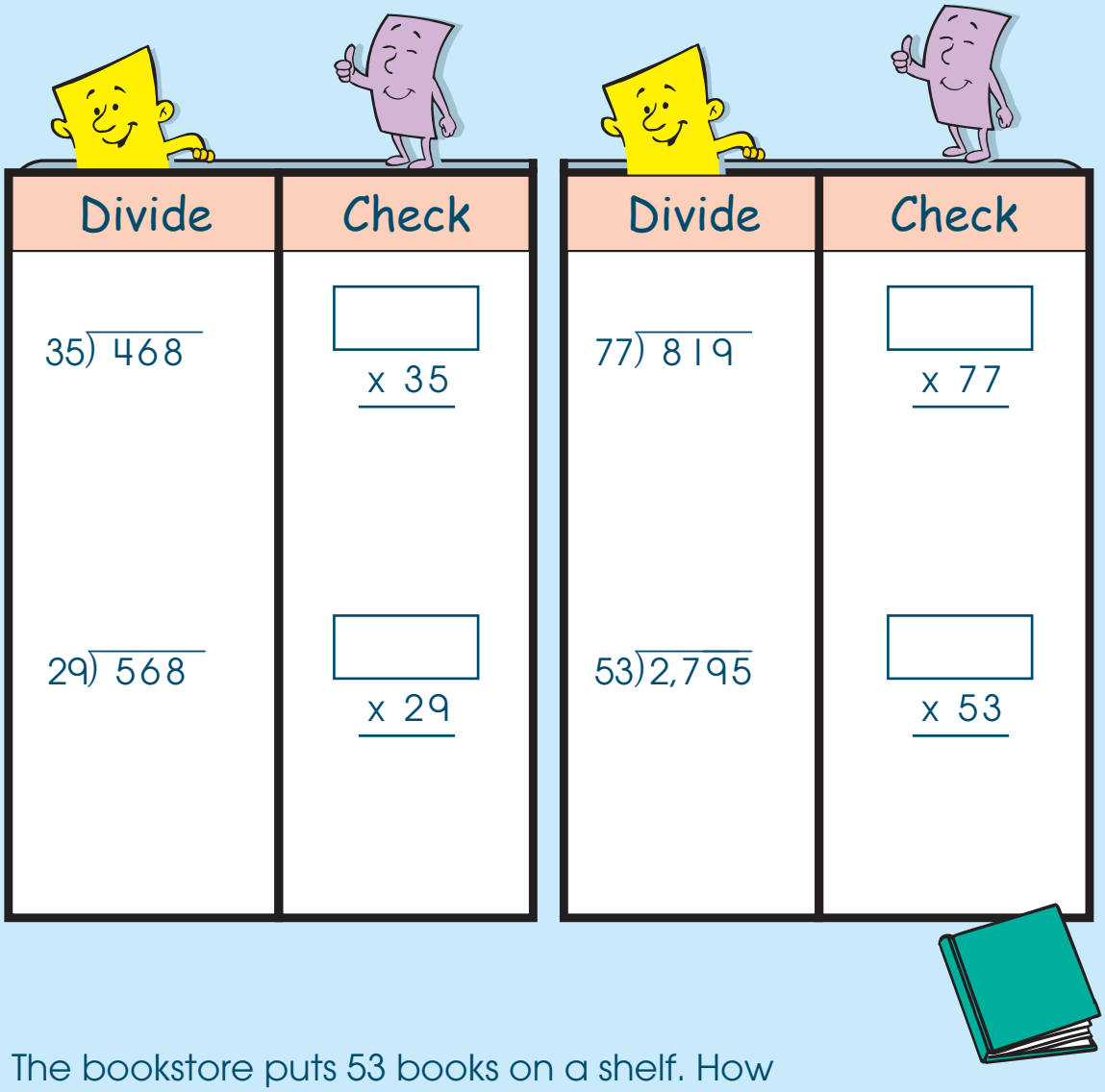
Directions: Divide, then check your answers.

Example:

```
   182 R 1
4) 729
 - 4
   32
 - 32
    9
  - 8
    1
```

Check:

```
  182
x   4
  728
+   1
  729
```



Divide	Check
35) 468	☐ x 35
29) 568	☐ x 29

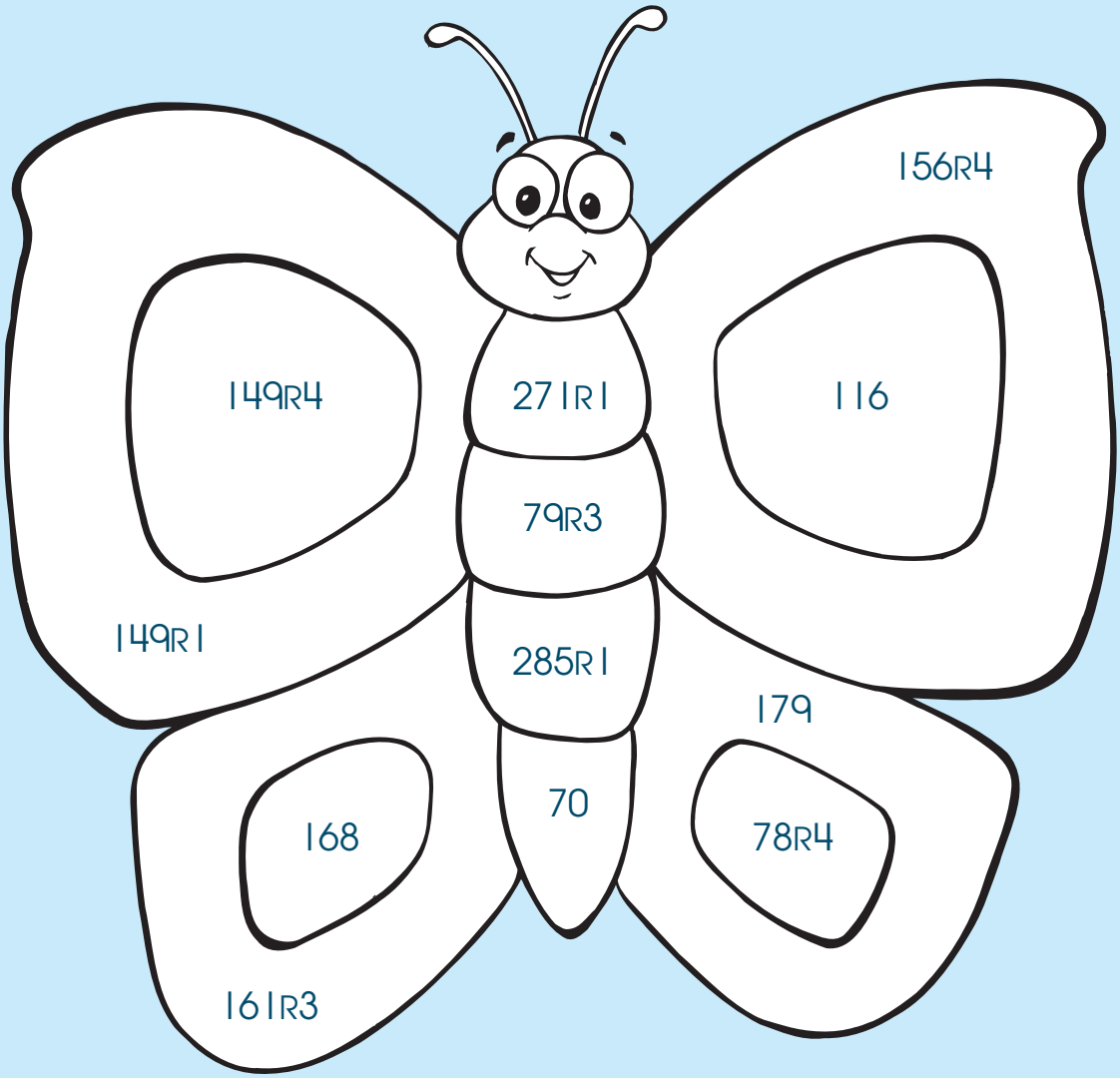
Divide	Check
77) 819	☐ x 77
53) 2,795	☐ x 53

The bookstore puts 53 books on a shelf. How many shelves will it need for 1,590 books? _____

Division: One-Digit Divisors

Directions: Solve the problems on another sheet of paper. Use the code to color the picture.

Color	$5\overline{)895}$	$6\overline{)895}$	$6\overline{)940}$	$4\overline{)647}$	**orange**
these	$4\overline{)672}$	$6\overline{)696}$	$5\overline{)749}$	$8\overline{)628}$	**blue**
answers:	$3\overline{)814}$	$7\overline{)490}$	$5\overline{)398}$	$2\overline{)571}$	**black**



Division: Two-Digit Divisors

Directions: Divide. Then, check each answer on another sheet of paper by multiplying it by the divisor and adding the remainder.

Example:

```
   2
12)256
 -24
   1
```

```
   21 R4
12)256
 -24
  16
 -12
   4
```

Check:

```
  21
 x12
  42
 210
 252
+  4
 256
```

27)880 81)913 65)790 42)674 67)823

72)977 54)743 45)863 24)432 18)372

28)175 49)538 77)936 37)603 63)835

The Allen farm has 882 chickens. The chickens are kept in 21 coops. How many chickens are there in each coop? _____

Averaging

An **average** is found by adding two or more quantities and dividing by the number of quantities.

Example:
Step 1: Find the sum of the numbers. 24 + 36 + 30 = 90
Step 2: Divide by the number of quantities. 90 ÷ 3 = 30
The average is 30.

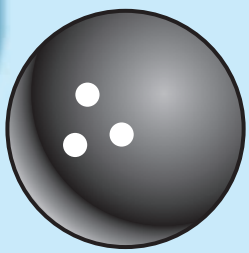
Directions: Find the average of each group of numbers. Draw a line from each problem to the correct average.

12 + 14 + 29 + 1 =	410
33 + 17 + 14 + 20 + 16 =	83
782 + 276 + 172 =	15
81 + 82 + 91 + 78 =	14
14 + 24 + 10 + 31 + 5 + 6 =	20

A baseball player had 3 hits in game one, 2 hits in game two, and 4 hits in game three. How many hits did she average over the three games? _____

Averaging

Directions: Find the averages.



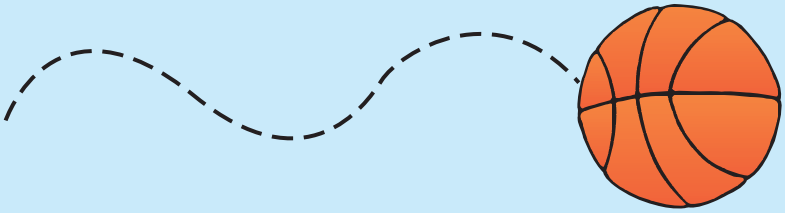
Ted went bowling. He had scores of 112, 124, and 100. What was his average? _____

The baseball team played 6 games. They had 12 hits, 6 hits, 18 hits, 36 hits, 11 hits, and 7 hits. What is the average number of hits in a game?

_____

In 3 games of football, Chris gained 156, 268, and 176 yards running. How many yards did he average in a game? _____

Jane scored 18, 15, 26, and 21 points in 4 basketball games. How many points did she average? _____



Averaging

Averaging can be used to keep track of your grades.

Example: Average the grades for each subject.

Sally has the following grades:
English — 75, 84, 95;
Spelling — 98, 92, 80;
Math — 80, 88, 95.

Her averages are:
English — 75 + 84 + 95 = 254 ÷ 3 = 84.7
Spelling — 98 + 92 + 80 = 270 ÷ 3 = 90.0
Math — 80 + 88 + 95 = 263 ÷ 3 = 87.7

Directions: Find the averages.

1. Write the number of minutes you do homework each night for a week. What is the average of those times?

   _____

2. Keep track of the following for 1 week and find the average:

   a. Time spent watching TV _____

   b. Time spent playing video games _____

   c. Time spent on the computer _____

   d. Time spent doing chores _____

Review

Directions: Divide.

$3\overline{)268}$ $15\overline{)165}$

$27\overline{)489}$ $48\overline{)695}$ $79\overline{)937}$ $49\overline{)683}$

$91\overline{)848}$ $73\overline{)592}$ $59\overline{)473}$ $23\overline{)1,268}$

$67\overline{)2,543}$ $81\overline{)3,608}$ $37\overline{)8,432}$ $97\overline{)4,528}$

Directions: Find the averages.

22, 38 _____ 105, 263, 331 _____

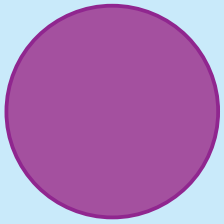
248, 325, 250, 69 _____ 17, 18, 36, 28, 6 _____

Fractions

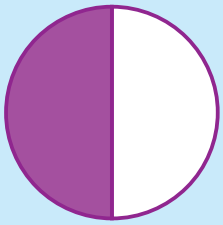
A **fraction** is a number that names part of a whole, such as $\frac{1}{2}$ or $\frac{1}{3}$.

A fraction is made up of two numbers—the **numerator** (top number) and the **denominator** (bottom number). The larger the denominator, the smaller each of the equal parts. $\frac{1}{16}$ is smaller than $\frac{1}{2}$.

Directions: Study the fractions below.

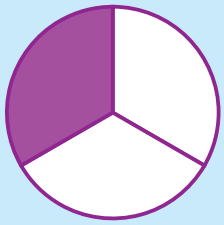


1 whole.



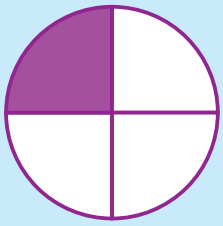
2 equal parts or halves

One-half of the circle is shaded. $\frac{1}{2}$



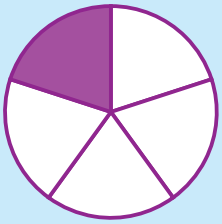
3 equal parts or thirds

One-third of the circle is shaded. $\frac{1}{3}$



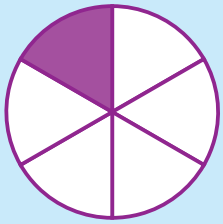
4 equal parts or halves

One-fourth of the circle is shaded. $\frac{1}{4}$



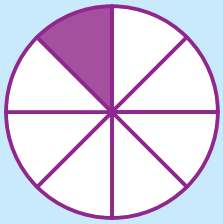
5 equal parts or fifths

One-fifth of the circle is shaded. $\frac{1}{5}$



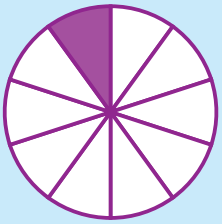
6 equal parts or sixths

One-sixth of the circle is shaded. $\frac{1}{6}$



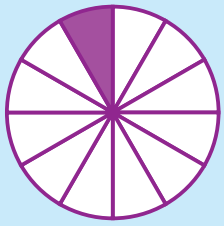
8 equal parts or eighths

One-eighth of the circle is shaded. $\frac{1}{8}$



10 equal parts or tenths

One-tenth of the circle is shaded. $\frac{1}{10}$



12 equal parts or twelfths

One-twelfth of the circle is shaded. $\frac{1}{12}$

Fractions

Directions: Name the fraction that is shaded.

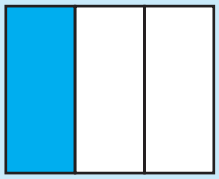
Examples:

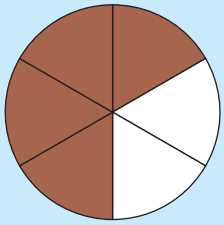
3 of 4 equal parts are shaded.

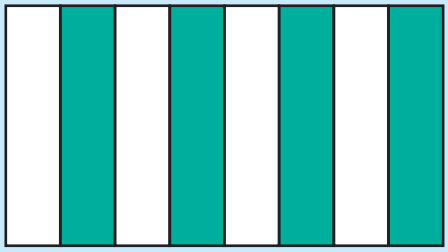
$\frac{3}{4}$

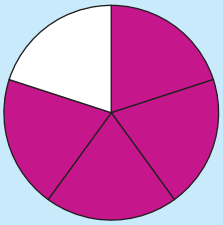
12 of 16 equal parts are shaded.

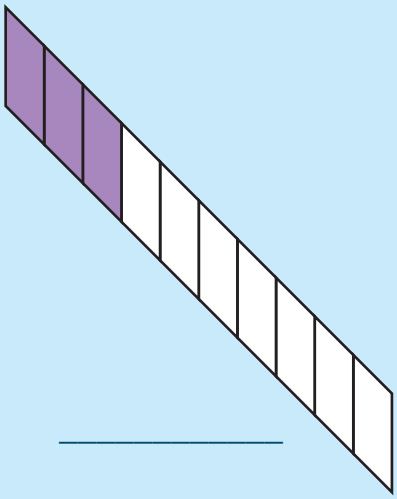
$\frac{12}{16}$





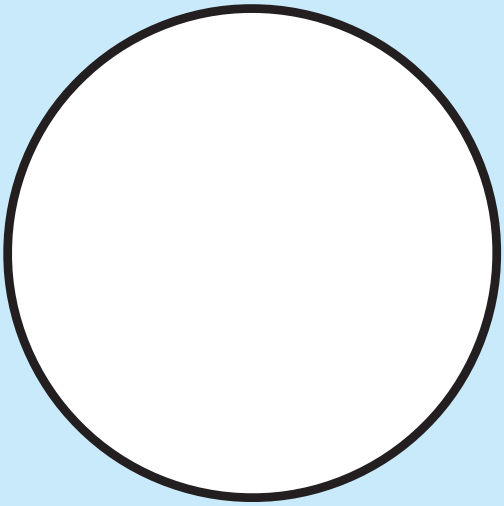




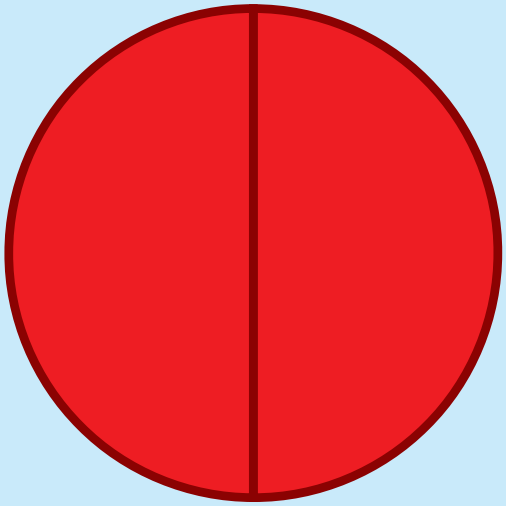


Fraction Pieces

Directions: Cut apart the fraction pieces below. Use them to help you work with fractions. Store the fraction sets in separate plastic bags.

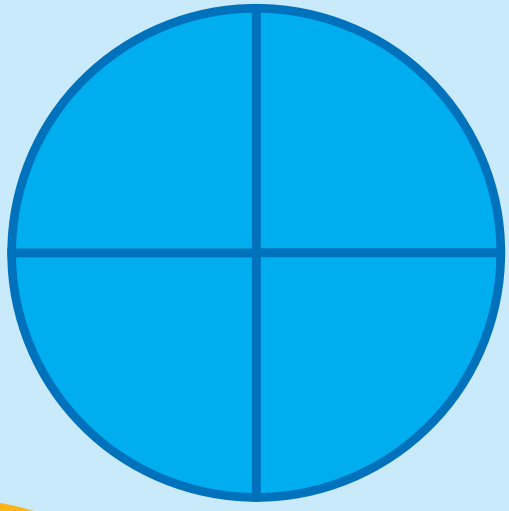


One Whole

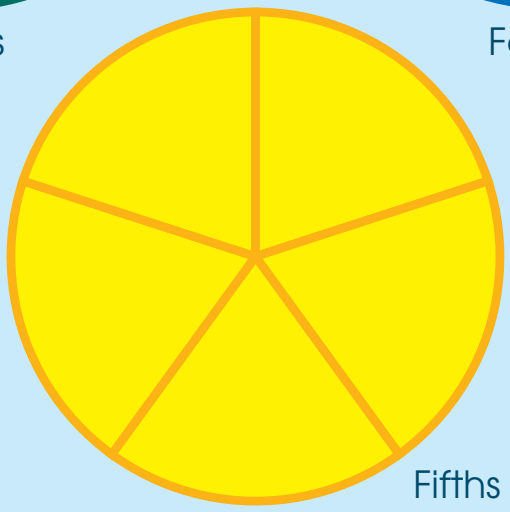


Halves

Thirds



Fourths



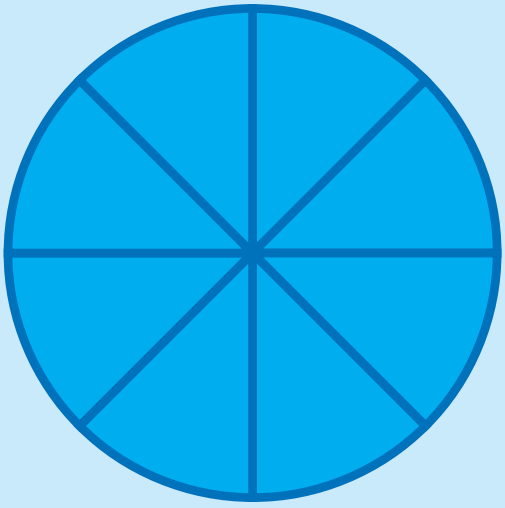
Fifths

Page is blank for cutting exercise on previous page.

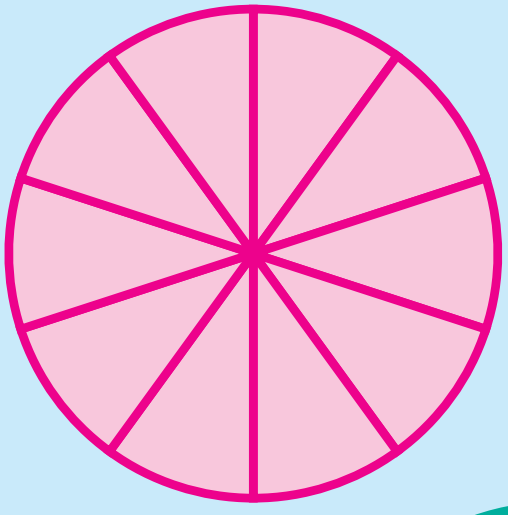
Fraction Pieces

Directions: Cut apart the fraction pieces below. Use them to help you work with fractions. Store the fraction sets in separate plastic bags.

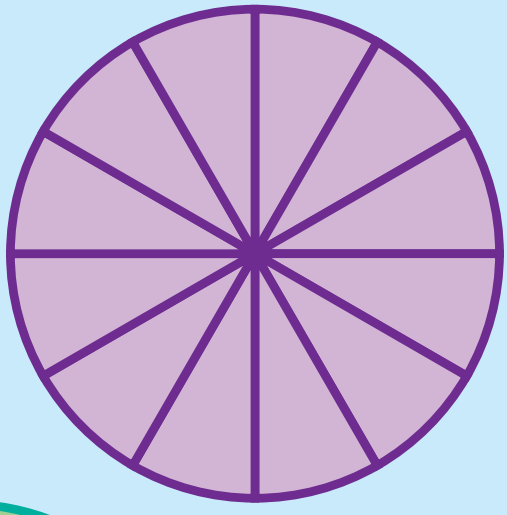
Sixths



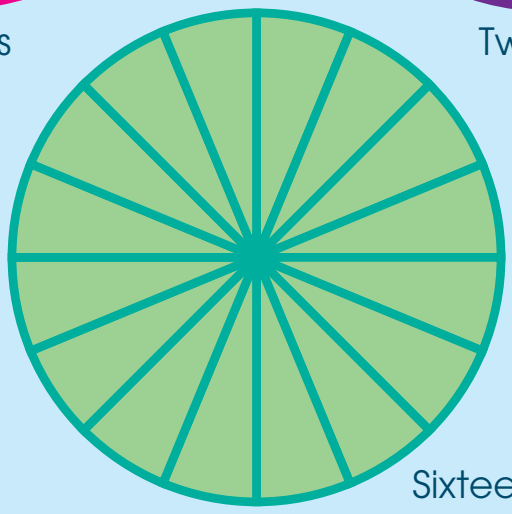
Eighths



Tenths



Twelfths



Sixteenths

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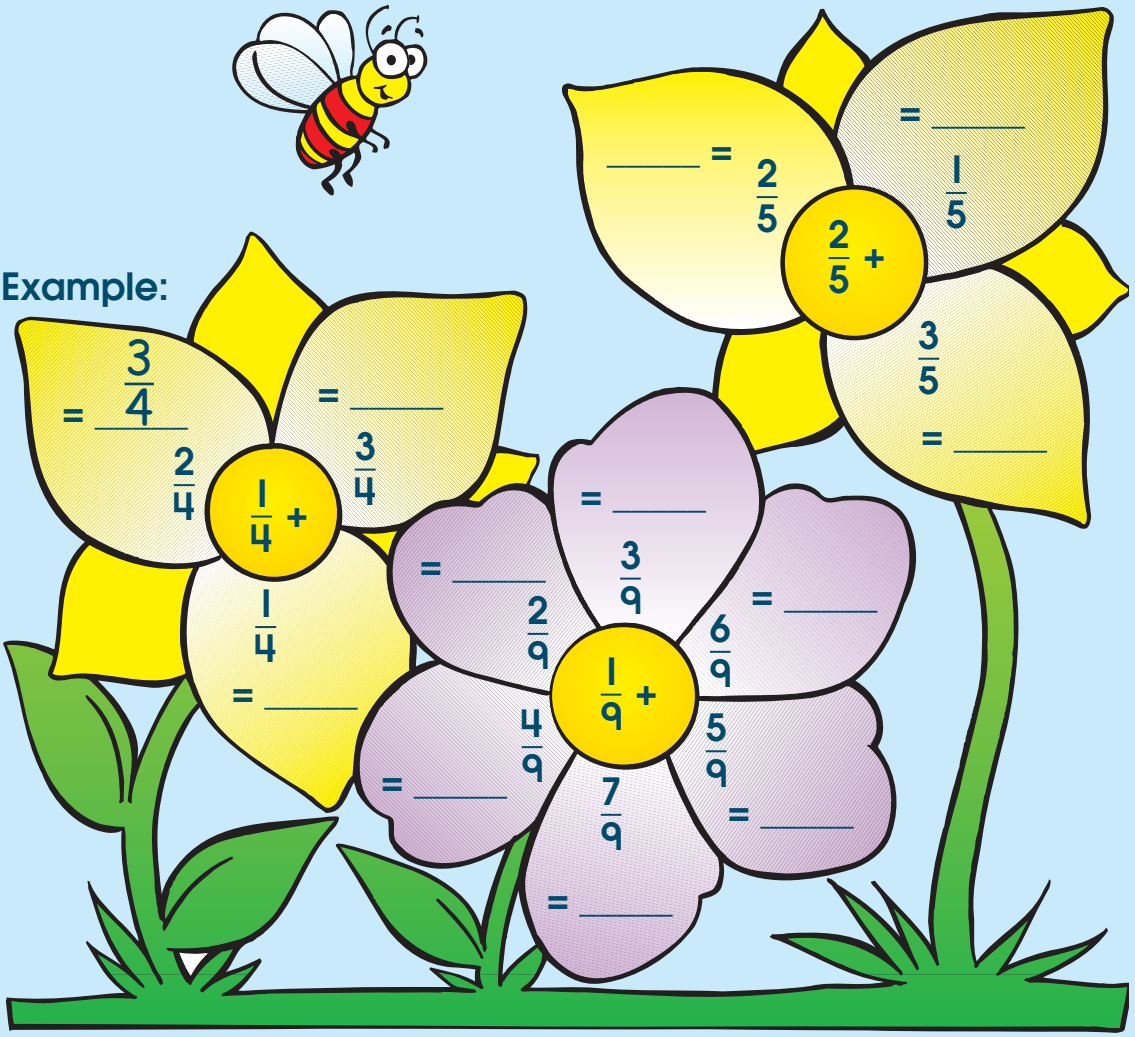
Fractions: Addition

When adding fractions with the same denominator, the denominator stays the same. Add only the numerators.

Example: **numerator** / **denominator** $\frac{1}{8} + \frac{2}{8} = \frac{3}{8}$

Directions: Add the fractions on the flowers. Begin in the center of each flower and add each petal. The first one is done for you.



Fractions: Subtraction

When subtracting fractions with the same denominator, the denominator stays the same. Subtract only the numerators.

Directions: Solve the problems, working from left to right. As you find each answer, copy the letter from the key into the numbered blanks. The answer is the name of a famous American. The first one is done for you.

T $\frac{1}{8}$	P $\frac{5}{24}$	H $\frac{1}{4}$	F $\frac{4}{12}$	E $\frac{2}{7}$
J $\frac{3}{12}$	E $\frac{3}{9}$	O $\frac{2}{9}$	F $\frac{4}{8}$	R $\frac{7}{16}$
O $\frac{2}{8}$	Y $\frac{8}{20}$	Q $\frac{1}{32}$	M $\frac{1}{3}$	S $\frac{5}{20}$
A $\frac{1}{12}$	R $\frac{12}{15}$	S $\frac{3}{5}$	N $\frac{2}{6}$	O $\frac{11}{15}$

1. $\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$
2. $\frac{2}{4} - \frac{1}{4} =$ ____
3. $\frac{5}{9} - \frac{3}{9} =$ ____
4. $\frac{2}{3} - \frac{1}{3} =$ ____
5. $\frac{8}{12} - \frac{7}{12} =$ ____
6. $\frac{4}{5} - \frac{1}{5} =$ ____
7. $\frac{6}{12} - \frac{3}{12} =$ ____
8. $\frac{4}{9} - \frac{1}{9} =$ ____
9. $\frac{11}{12} - \frac{7}{12} =$ ____
10. $\frac{7}{8} - \frac{3}{8} =$ ____
11. $\frac{4}{7} - \frac{2}{7} =$ ____
12. $\frac{14}{16} - \frac{7}{16} =$ ____
13. $\frac{18}{20} - \frac{13}{20} =$ ____
14. $\frac{13}{15} - \frac{2}{15} =$ ____
15. $\frac{5}{6} - \frac{3}{6} =$ ____

Who helped write the Declaration of Independence?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
T														

Fractions: Mixed Numbers

A **mixed number** is a number written as a whole number and a fraction, such as $6\frac{5}{8}$.

To change a fraction into a mixed number, divide the denominator (bottom number) into the numerator (top number). Write the remainder over the denominator.

Example:

$\frac{14}{6} = \frac{2}{6}$

$$\begin{array}{r} 2\ R2 \\ 6\overline{)\,14} \\ 14 \\ \hline -12 \\ \hline 2 \end{array}$$

To change a mixed number into a fraction, multiply the denominator by the whole number, add the numerator, and write it on top of the denominator.

Example:

$3\frac{1}{7} = \frac{22}{7}$ $\quad (7 \times 3) + 1 = \frac{22}{7}$

Directions: Write each fraction as a mixed number. Write each mixed number as a fraction.

$\frac{21}{6} =$ _____ $\quad \frac{24}{5} =$ _____ $\quad \frac{10}{3} =$ _____ $\quad \frac{21}{4} =$ _____

$\frac{11}{6} =$ _____ $\quad \frac{13}{4} =$ _____ $\quad \frac{12}{5} =$ _____ $\quad \frac{10}{9} =$ _____

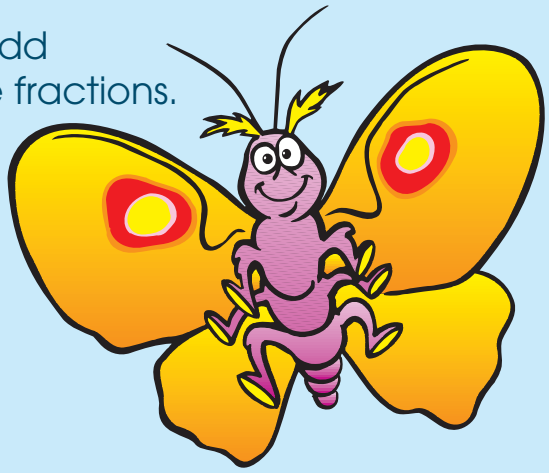
$4\frac{3}{8} = \frac{\square}{8}$ $\quad 2\frac{1}{3} = \frac{\square}{3}$ $\quad 4\frac{3}{5} = \frac{\square}{5}$ $\quad 3\frac{4}{6} = \frac{\square}{6}$

$7\frac{1}{4} = \frac{\square}{4}$ $\quad 2\frac{3}{5} = \frac{\square}{5}$ $\quad 7\frac{1}{2} = \frac{\square}{2}$ $\quad 6\frac{5}{7} = \frac{\square}{7}$

$\frac{23}{7} =$ _____ $\quad 8\frac{1}{3} =$ _____ $\quad 9\frac{3}{7} =$ _____ $\quad \frac{32}{24} =$ _____

Fractions: Adding Mixed Numbers

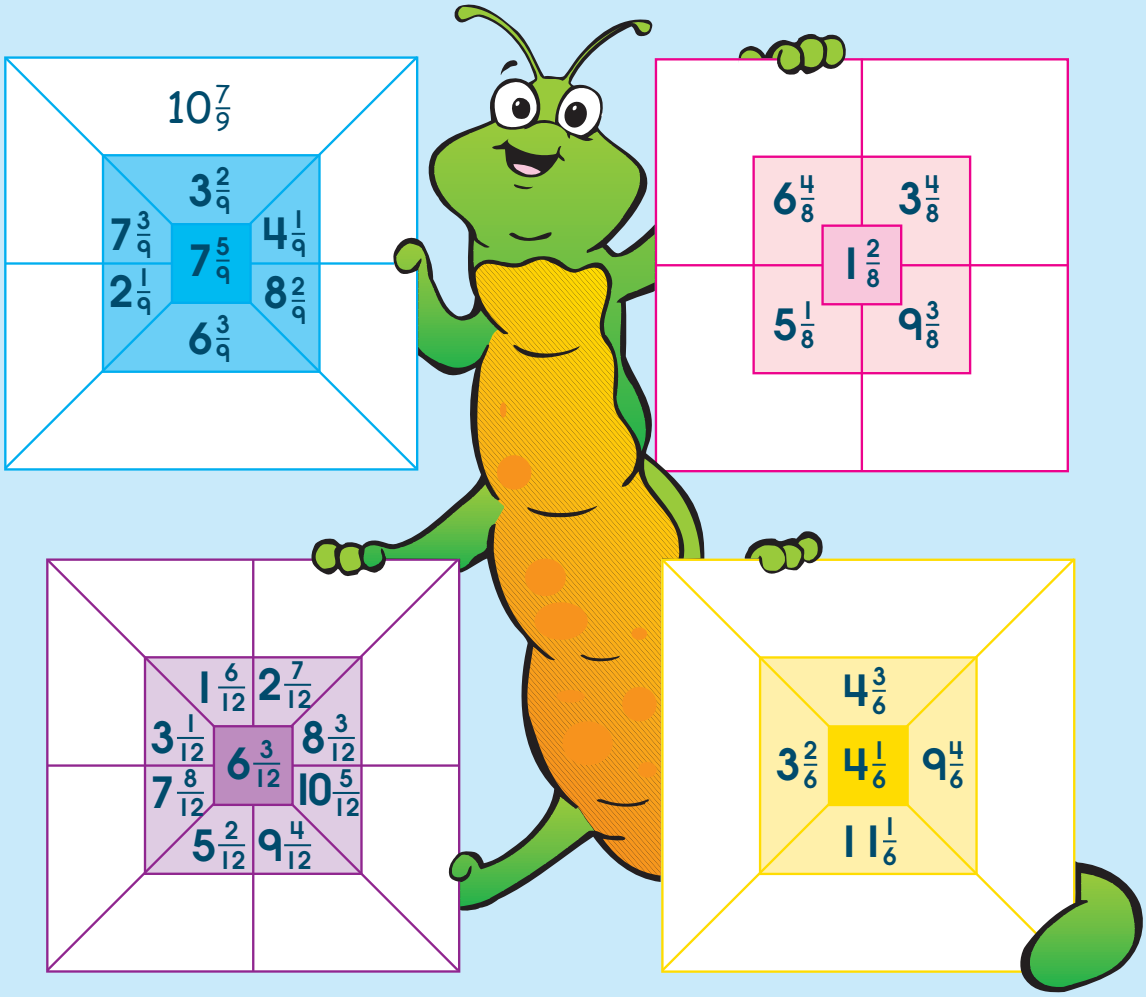
When adding mixed numbers, add the whole numbers first, then the fractions.



Examples:

$$\begin{array}{r} 9\frac{1}{3} \\ +\,3\frac{1}{3} \\ \hline 12\frac{2}{3} \end{array} \qquad \begin{array}{r} 2\frac{3}{6} \\ +\,1\frac{1}{6} \\ \hline 3\frac{4}{6} \end{array}$$

Directions: Add the number in the center to the number in each surrounding section.



Fractions: Subtracting Mixed Numbers

When subtracting mixed numbers, subtract the fractions first, then the whole numbers.

Directions: Subtract the mixed numbers. The first one is done for you.

$$\begin{array}{r} 7\frac{3}{8} \\ -\,4\frac{2}{8} \\ \hline 3\frac{1}{8} \end{array} \qquad \begin{array}{r} 4\frac{5}{6} \\ -\,3\frac{1}{6} \\ \hline \end{array} \qquad \begin{array}{r} 4\frac{1}{2} \\ -\,3 \\ \hline \end{array} \qquad \begin{array}{r} 7\frac{5}{8} \\ -\,6\frac{3}{8} \\ \hline \end{array} \qquad \begin{array}{r} 6\frac{6}{8} \\ -\,1\frac{1}{8} \\ \hline \end{array} \qquad \begin{array}{r} 5\frac{3}{4} \\ -\,1\frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 5\frac{2}{3} \\ -\,3\frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} 4\frac{8}{10} \\ -\,3\frac{3}{10} \\ \hline \end{array} \qquad \begin{array}{r} 9\frac{8}{9} \\ -\,4\frac{3}{9} \\ \hline \end{array} \qquad \begin{array}{r} 7\frac{2}{3} \\ -\,6\frac{1}{3} \\ \hline \end{array} \qquad \begin{array}{r} 7\frac{2}{3} \\ -\,5 \\ \hline \end{array} \qquad \begin{array}{r} 9\frac{8}{10} \\ -\,6\frac{3}{10} \\ \hline \end{array}$$

Sally needs $1\frac{3}{8}$ yards of cloth to make a dress. She has $4\frac{5}{8}$ yards. How much cloth will be left over?

_____

Equivalent Fractions

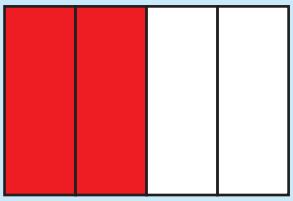
Equivalent fractions are two different fractions that represent the same number. **Example:**

$\frac{1}{2}$ =  $\frac{3}{6}$

Directions: Complete these equivalent fractions. Use your fraction pieces from pages 53 and 55.

$\frac{1}{3} = \frac{\quad}{6}$ $\frac{1}{2} = \frac{\quad}{4}$ $\frac{3}{4} = \frac{\quad}{8}$ $\frac{1}{3} = \frac{\quad}{9}$

Directions: Write the fraction for the shaded area under each figure. Circle the figure that shows a fraction equivalent to figure a.

a. 

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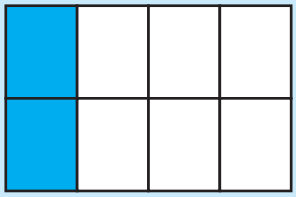
c. 

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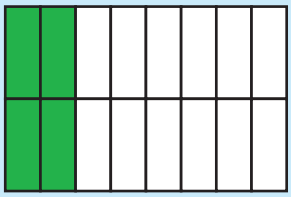
b. 

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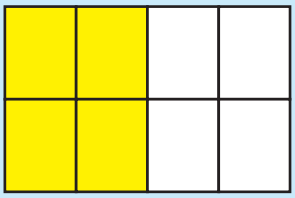
d. 

_____

To find an equivalent fraction, multiply both parts of the fraction by the same number.

Example: $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$

Directions: Find an equivalent fraction.

$\frac{1}{4} = \frac{\quad}{8}$ $\frac{3}{4} = \frac{\quad}{16}$ $\frac{4}{5} = \frac{8}{\quad}$ $\frac{3}{8} = \frac{\quad}{24}$

Reducing Fractions

Reducing a fraction means finding the greatest common factor and divide.

Example: $\frac{5}{15}$ factors of 5: 1, 5
factors of 15: 1, 3, 5, 15

$5 \div 5 = 1$
$15 \div 5 = 3$

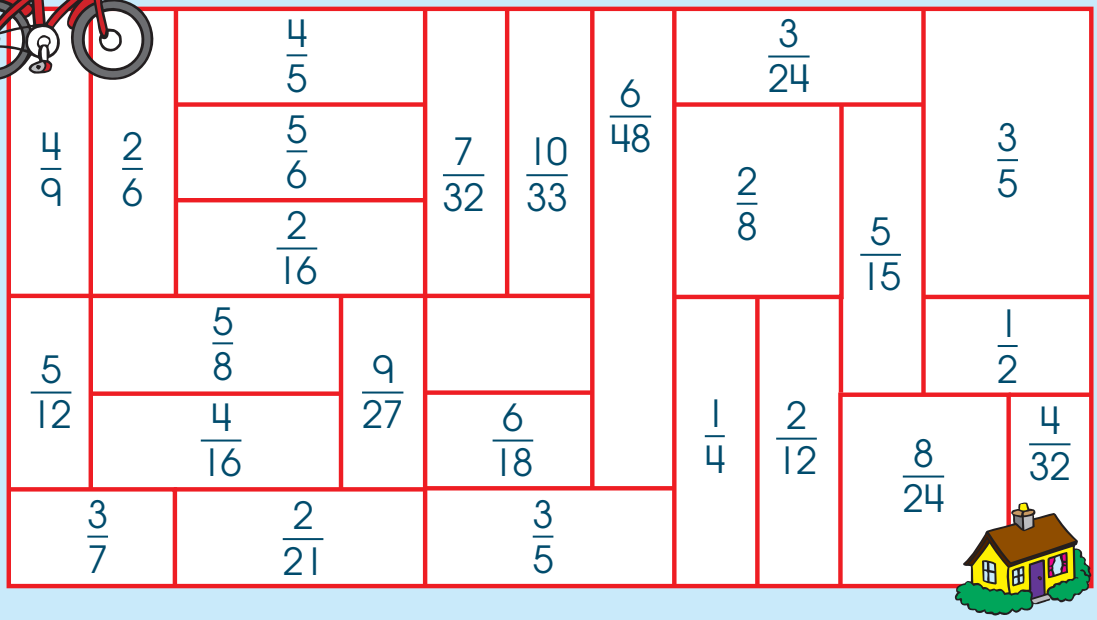
5 is the greatest common factor. Divide both the numerator and denominator by 5.

Directions: Reduce each fraction. Circle the correct answer.

$\frac{2}{4} = \frac{1}{2}, \frac{1}{6}, \frac{1}{8}$ $\quad \frac{3}{9} = \frac{1}{6}, \frac{1}{3}, \frac{3}{6}$ $\quad \frac{5}{10} = \frac{1}{5}, \frac{1}{2}, \frac{5}{6}$

$\frac{4}{12} = \frac{1}{4}, \frac{1}{3}, \frac{2}{3}$ $\quad \frac{10}{15} = \frac{2}{3}, \frac{2}{5}, \frac{2}{7}$

Directions: Find the way home. Color the boxes with fractions equivalent to $\frac{1}{8}$ or $\frac{1}{3}$.



Review

Directions: Add or subtract the fractions and mixed numbers.

$4\frac{7}{8} - 2\frac{5}{8}$ $\quad 8\frac{3}{9} + 2\frac{5}{9}$ $\quad 3\frac{1}{8} + 1\frac{3}{8}$ $\quad 4\frac{5}{6} - 3\frac{1}{6}$ $\quad 7\frac{5}{11} + 3\frac{3}{11}$

$\frac{4}{12} + \frac{3}{12} =$ _____ $\quad \frac{3}{5} + \frac{1}{5} =$ _____

$\frac{3}{8} - \frac{1}{8} =$ _____ $\quad \frac{3}{4} - \frac{2}{4} =$ _____

Directions:
Reduce the fractions.

$\frac{4}{6} =$ _____ $\quad \frac{7}{21} =$ _____

$\frac{9}{12} =$ _____ $\quad \frac{2}{4} =$ _____

$\frac{6}{24} =$ _____ $\quad \frac{8}{32} =$ _____

Directions: Change the mixed numbers to fractions and the fractions to mixed numbers.

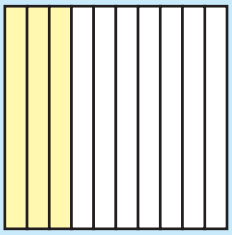
$3\frac{1}{3} = \frac{\square}{3}$ $\quad \frac{14}{4} =$ _____

$\frac{26}{6} =$ _____ $\quad 3\frac{7}{12} = \frac{\square}{12}$

Fractions to Decimals

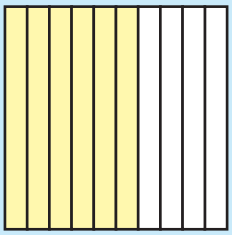
When a figure is divided into 10 equal parts, the parts are called tenths. Tenths can be written two ways—as a fraction or a decimal. A **decimal** is a number with one or more places to the right of a decimal point, such as 6.5 or 2.25. A **decimal point** is the dot between the ones place and the tenths place.

Examples:



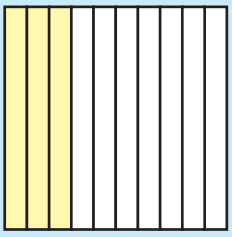
ones	tenths
0 .	3

$\frac{3}{10}$ or 0.3 of the square is shaded.

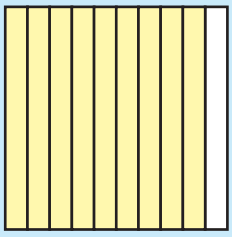


$\frac{6}{10}$ 0.6

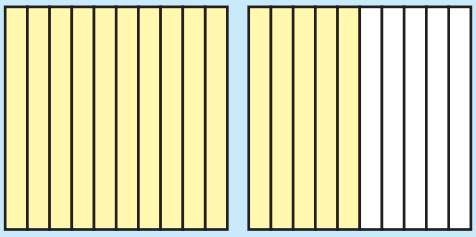
Directions: Write the decimal and fraction for the shaded parts of the following figures. The first one is done for you.



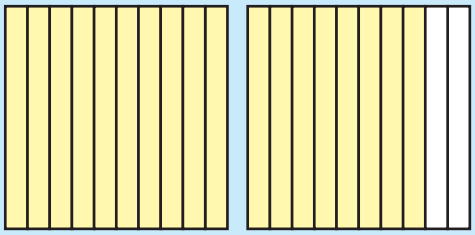
_____ _____



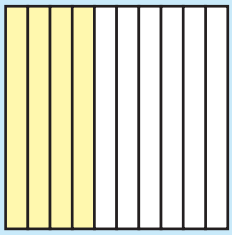
_____ _____



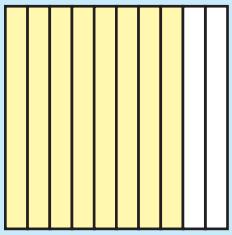
_____ _____



_____ _____



_____ _____

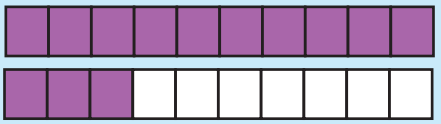


_____ _____

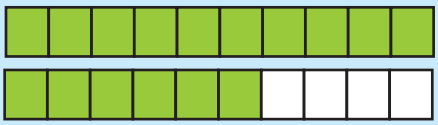
Decimals

Directions: Add or subtract. Remember to include the decimal point in your answers.

Example:



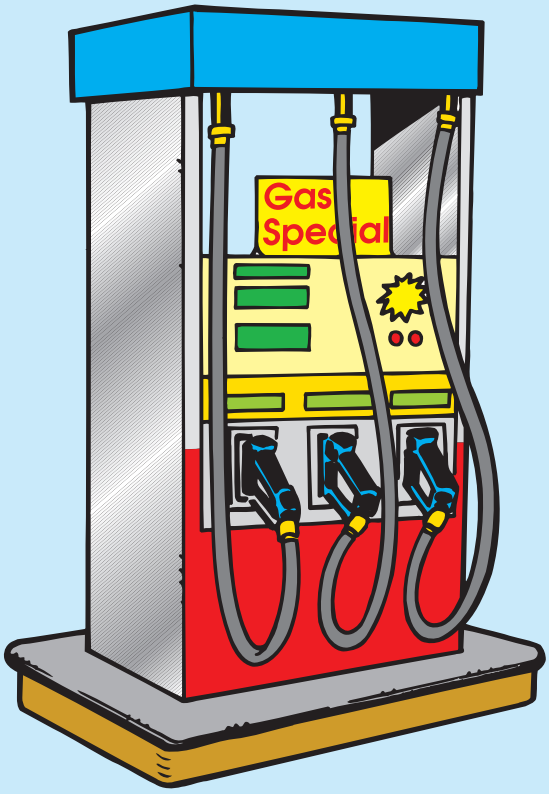
$1\frac{3}{10} = 1.3$



$1\frac{6}{10} = 1.6$

$$\begin{array}{r} 1.3 \\ +\ 1.6 \\ \hline 2.9 \end{array}$$

8.1 + 1.7	4.1 + 6.2	0.5 + 1.6	7.6 − 6.5	7.2 − 2.6	1.2 + 5.0	8.7 − 3.9



7.8 − 6.8	16.5 − 7.3	6.4 + 5.3
0.42 + 0.35	0.98 − 0.87	0.78 − 0.13
0.95 − 0.14	3.23 + 2.48	4.68 − 2.65
6.98 + 1.40	3.27 + 1.82	4.65 − 1.32

Mr. Martin went on a car trip with his family. Mr. Martin purchased gas 3 times. He bought 6.7 gallons, 7.3 gallons, then 5.8 gallons of gas. How much gas did he purchase in all? _____

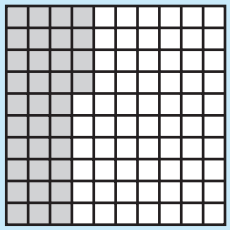
Decimals: Hundredths

The next smallest decimal unit after a tenth is called a hundredth. One hundredth is one unit of a figure divided into 100 units. Written as a decimal, it is one digit to the right of the tenths place.

Examples:

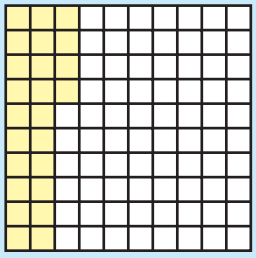
One square divided into hundredths, 34 hundredths are shaded. Write: 0.34.

ones	tenths	hundredths
0 .	3	4

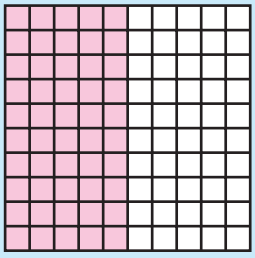


0.34

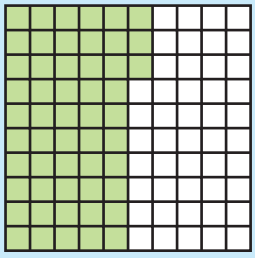
Directions: Write the decimal for the shaded parts of the following figures.



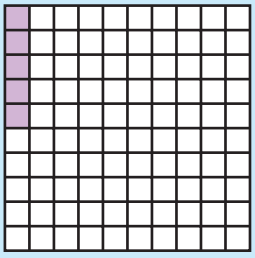
_____



_____



_____



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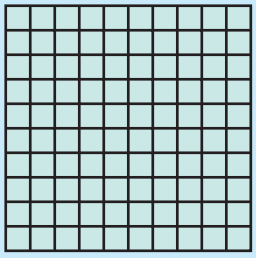

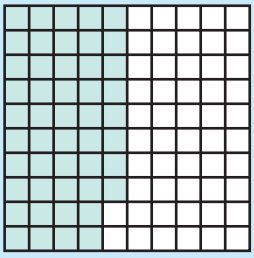

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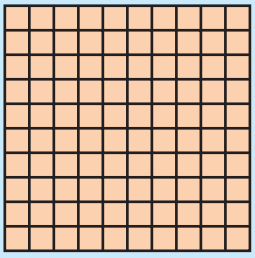
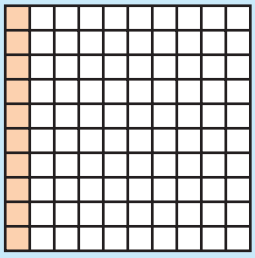




_____

Adding and Subtracting Decimals

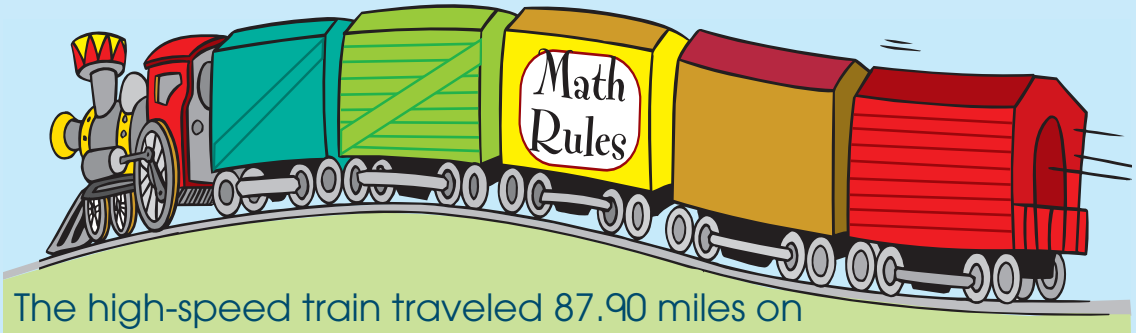
Directions: Add or subtract the problems. Then, fill in the circle next to the correct answer.

Example:

$$\begin{array}{r} 2.4 \\ +\ 1.7 \\ \hline \end{array}$$

○ 2.5
○ 3.1
● 4.1

$\begin{array}{r} 2.8 \\ +\ 3.4 \\ \hline \end{array}$ ○ 5.2 ○ 7.4 ○ 6.2	$\begin{array}{r} 5.7 \\ -\ 3.8 \\ \hline \end{array}$ ○ 1.9 ○ 2.5 ○ 2.9	$\begin{array}{r} 7.6 \\ +\ 8.9 \\ \hline \end{array}$ ○ 15.9 ○ 16.5 ○ 17.3
$\begin{array}{r} 16.3 \\ +\ 9.8 \\ \hline \end{array}$ ○ 25.11 ○ 26.1 ○ 26.01	$\begin{array}{r} 28.6 \\ +\ 43.9 \\ \hline \end{array}$ ○ 73.6 ○ 72.5 ○ 71.9	$\begin{array}{r} 43.9 \\ +\ 56.5 \\ \hline \end{array}$ ○ 100.4 ○ 107.4 ○ 101.4
$\begin{array}{r} 11.57 \\ +\ 10.64 \\ \hline \end{array}$ ○ 22.21 ○ 1.93 ○ 21.12	$\begin{array}{r} 27.83 \\ -\ 14.94 \\ \hline \end{array}$ ○ 14.09 ○ 12.89 ○ 11.97	$\begin{array}{r} 106.935 \\ -\ 95.824 \\ \hline \end{array}$ ○ 111.1 ○ 111.11 ○ 11.111

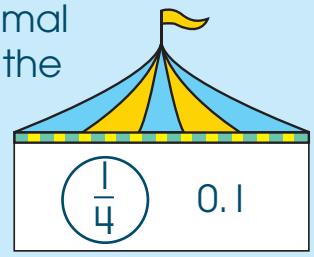


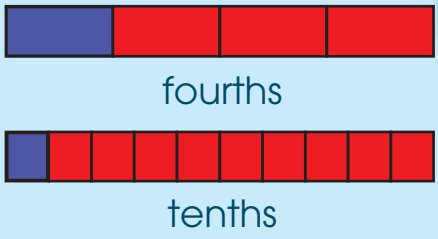
The high-speed train traveled 87.90 miles on day one, 127.86 miles on day two, and 113.41 miles on day three. How many miles did it travel in all? _____

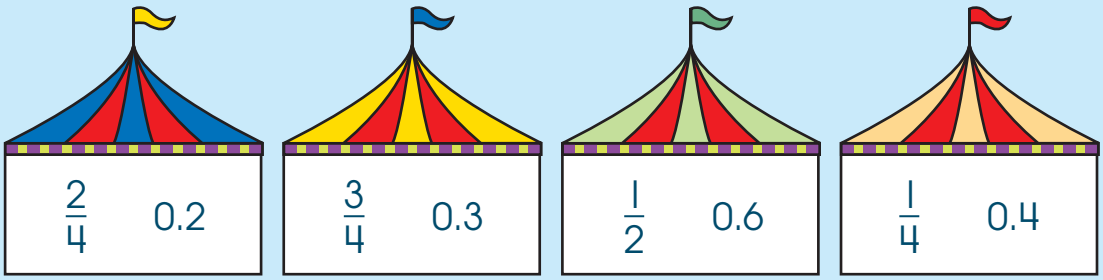
Fractions and Decimals

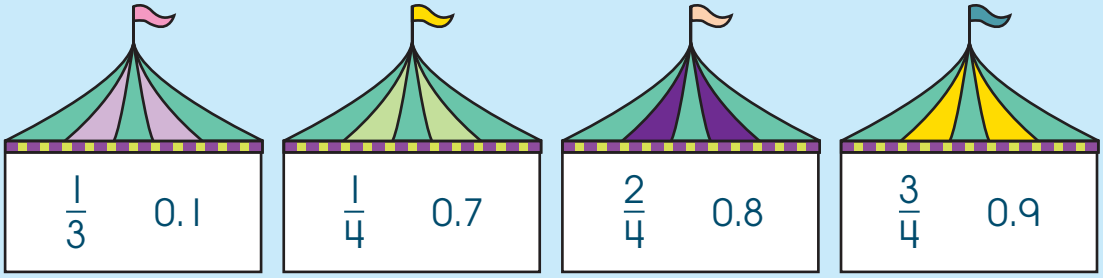
Directions: Compare the fraction to the decimal in each box. Circle the larger number.

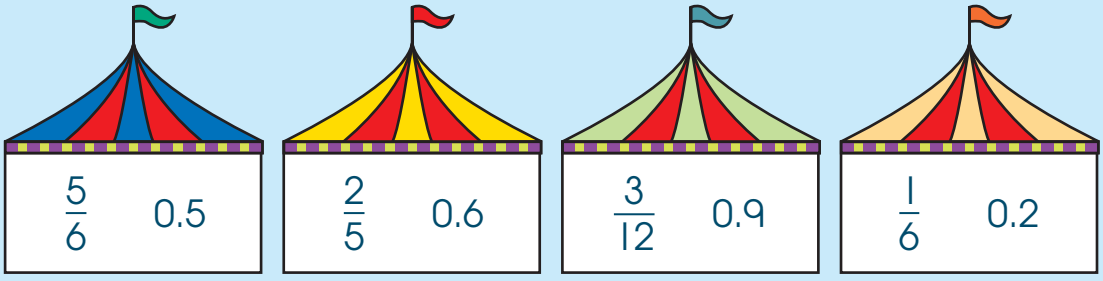
Example:

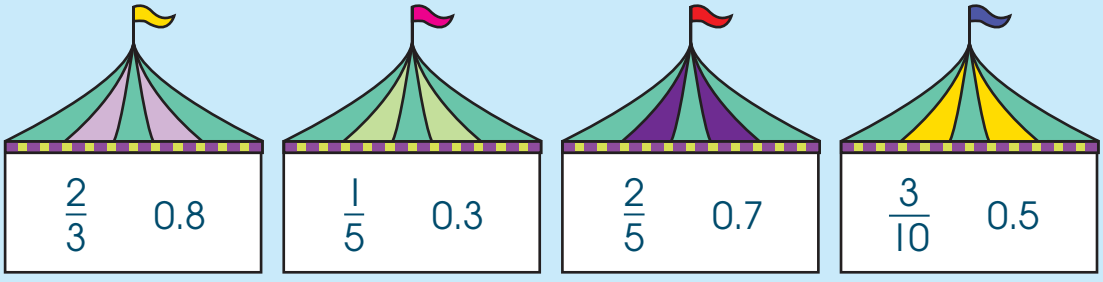






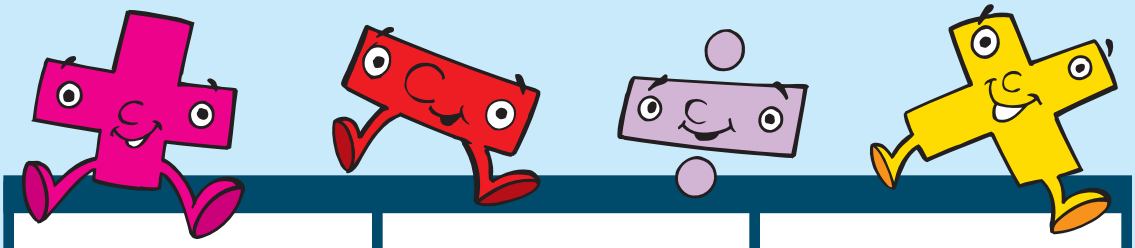






Identifying Operations

Directions: Write the correct operation sign (+, –, x, ÷) in each circle to correctly complete the problem. The first two are done for you.

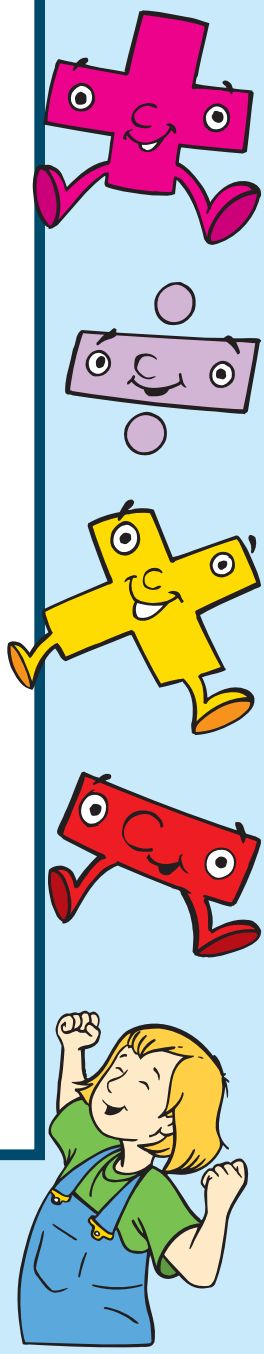


$5 \times 6 = 30$	$0.3 - 0.2 = 0.1$	$128 \bigcirc 56 = 72$
$4 \bigcirc 8 = 32$	$1\frac{2}{6} \bigcirc 2\frac{3}{6} = 3\frac{5}{6}$	$49 \bigcirc 7 = 7$
$54 \bigcirc 6 = 9$	$\frac{1}{10} \bigcirc \frac{4}{10} = \frac{5}{10}$	$188 \bigcirc 21 = 209$
$28 \bigcirc 16 = 44$	$3\frac{3}{8} \bigcirc 2\frac{2}{8} = 1\frac{1}{8}$	$16 \bigcirc 4 = 4$
$63 \bigcirc 7 = 9$	$12 \bigcirc 12 = 144$	$10 \bigcirc 0 = 0$
$49 \bigcirc 9 = 40$	$100 \bigcirc 5 = 20$	$0.91 \bigcirc 0.81 = 0.1$
$48 \bigcirc 12 = 4$	$98 \bigcirc 43 = 55$	$0.3 \bigcirc 0.3 = 0.6$
$39 \bigcirc 19 = 20$	$0.9 \bigcirc 0.7 = 0.2$	$0.5 \bigcirc 0.5 = 1.0$
$72 \bigcirc 8 = 9$	$1.68 \bigcirc 0.9 = 0.78$	$0.97 \bigcirc .50 = 1.47$

Identifying Operations

Directions: Solve the problems. Circle the letter with the correct answer. Write the letters in order to read the message.

1.	348 – 227 =	121	(M)	425 S
2.	542 x 6 =	5,683	W	3,252 A
3.	328 + 593 =	921	T	149 N
4.	1,280 ÷ 40 =	92	L	32 H
5.	24 x 52 =	2,386	W	1,248 I
6.	863 – 438 =	425	S	234 U
7.	4,586 + 1,097 =	3,489	Q	5,683 W
8.	480 ÷ 4 =	32	H	120 O
9.	0.5 + 0.9 =	1.4	N	0.14 E
10.	1.6 – 0.9 =	0.7	D	0.9 T
11.	$3\frac{1}{5} + 2\frac{3}{5}$	$5\frac{4}{5}$	E	$4\frac{2}{5}$ L
12.	$\frac{4}{8} - \frac{1}{4}$	$\frac{3}{8}$	Y	$\frac{1}{4}$ R
13.	2,193 – 1,864 =	329	F	591 Y
14.	26 x 9 =	234	U	744 L
15.	42 ÷ 6 =	8	M	7 L



M ____ ____ ____ ____ ____

1 2 3 4 5 6

____ ____ ____ ____ ____ ____ ____ ____ ____!

7 8 9 10 11 12 13 14 15

Review

Directions: Add or subtract to find the answers.

Bill jumped 28.5 feet. Jim jumped 27.3 feet. How much farther did Bill jump than Jim? _____

Sue threw the discus 86.4 feet. Julie threw the discus 93.8 feet. How much farther did Julie throw the discus than Sue? _____

Kim, Monica, and Kelly swam on the same team in the butterfly relay race. Their individual times were 32.8 seconds, 29.9 seconds, and 31.7 seconds. The winning team's time was 93.5 seconds. Did Kim, Monica, and Kelly swim the fastest race? _____

Jake's times for the 100-meter dash were 10.1 seconds, 12.5 seconds, and 11.8 seconds. What was his total time? _____

Directions: Decide which sign is correct for each problem: +, –, x, or ÷. Write it in the circle.

5 ◯ 5 = 25 　　100 ◯ 25 = 4 　　42 ◯ 38 = 80

152 ◯ 38 = 114 　　72 ◯ 12 = 6 　　9 ◯ 5 = 45

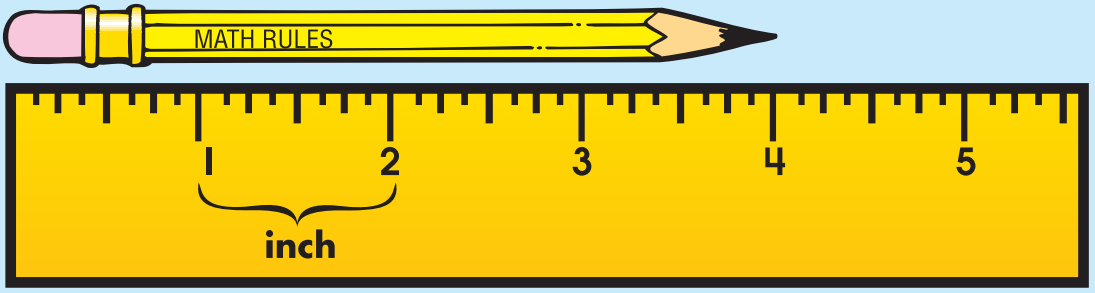
Directions: Round the numbers, then estimate each answer.

592 →	802 →	499 →	612 →
+ 312 →	– 695 →	– 299 →	+ 499 →

Measurement: Inches

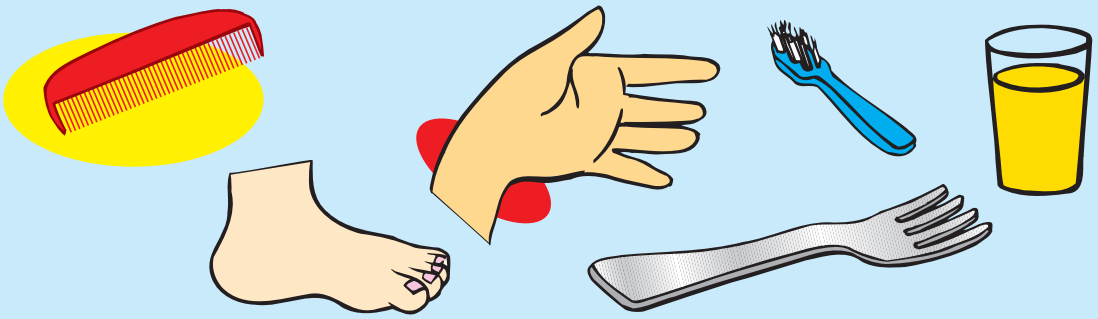
An **inch** is a unit of length in the standard system equal to $\frac{1}{12}$ of a foot. A ruler is used to measure inches.

This illustration shows a ruler measuring a 4-inch pencil, which can be written as 4" or 4 in.



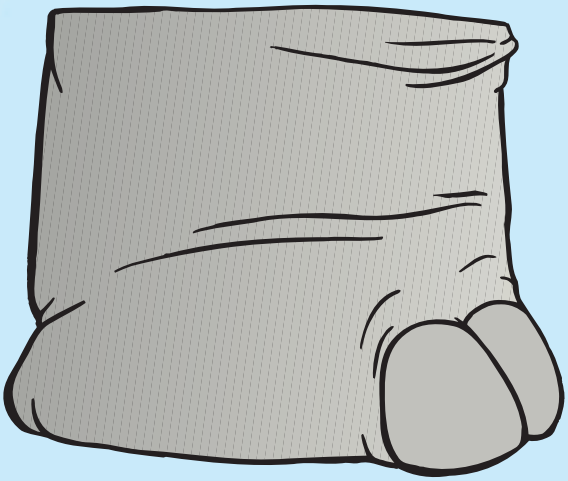
Directions: Use a ruler to measure each object to the nearest inch.

1. The length of your foot _____
2. The width of your hand _____
3. The length of this page _____
4. The width of this page _____
5. The length of a large paper clip _____
6. The length of your toothbrush _____
7. The length of a comb _____
8. The height of a juice glass _____
9. The length of a fork _____



Measurement: Inches

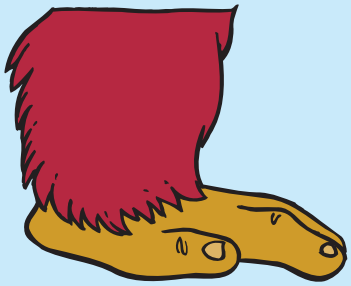
Directions: Use a ruler to measure the width of each foot to the nearest inch.



_____

_____

_____



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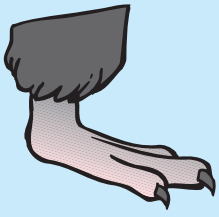
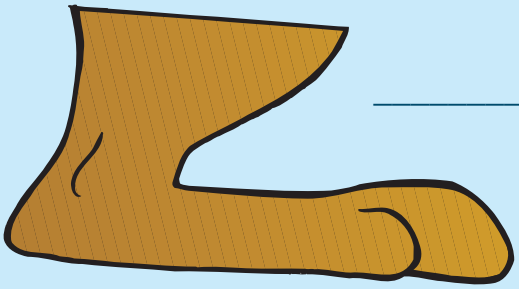




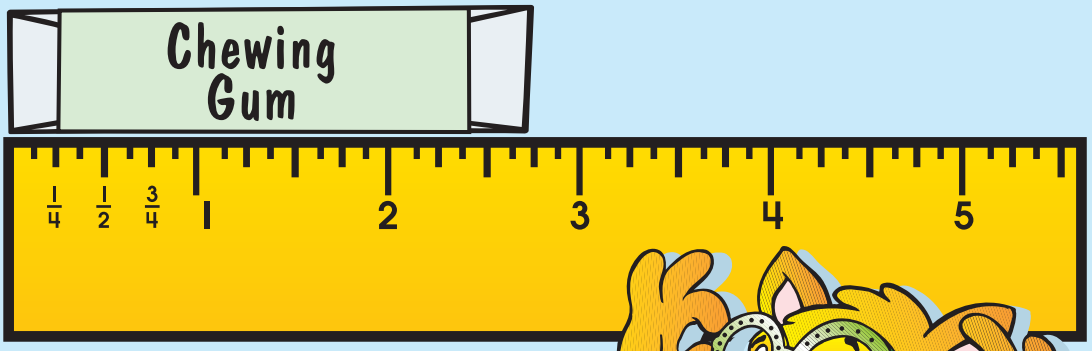
_____

_____

Measurement: Fractions of an Inch

An inch is divided into smaller units, or fractions of an inch.

Example: This stick of gum is $2\frac{3}{4}$ inches long.

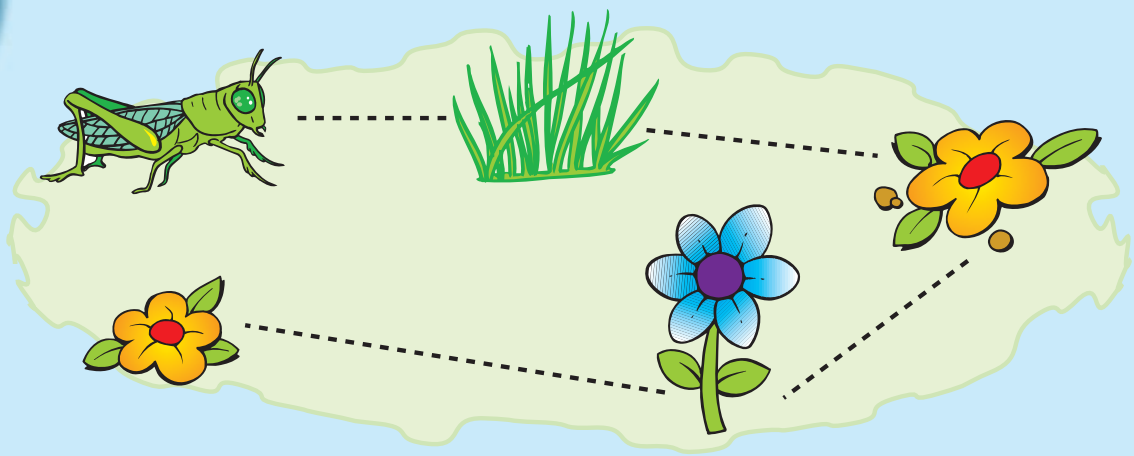


Directions: Use a ruler to measure each line to the nearest quarter of an inch. The first one is done for you.

1. $\frac{3}{4}$ inch _____
2. _____ _____
3. _____ _____
4. _____ _____
5. _____ _____
6. _____ _____
7. _____ _____

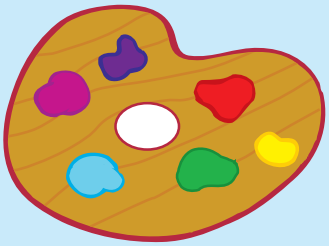
Measurement: Fractions of an Inch

Directions: Use a ruler to measure to the nearest quarter of an inch.



How far did the grasshopper jump?

_____ + _____ + _____ + _____ = _____



What is the total length of the paintbrushes?

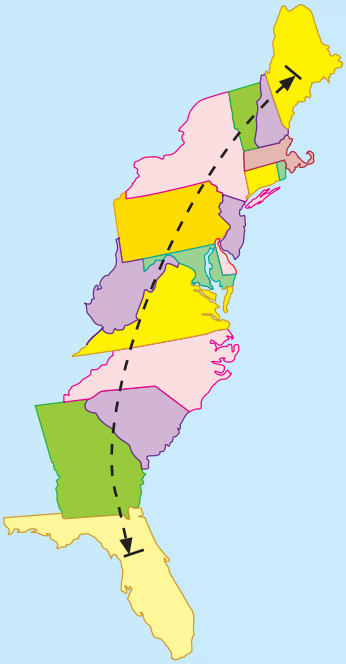
_____ + _____ + _____ + _____ + _____ = _____

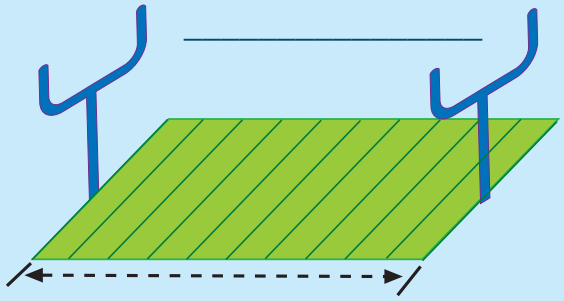
Measurement: Foot, Yard, Mile

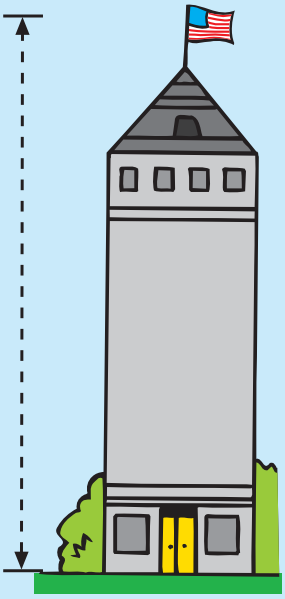
Directions: Choose the measure of distance you would use for each object.

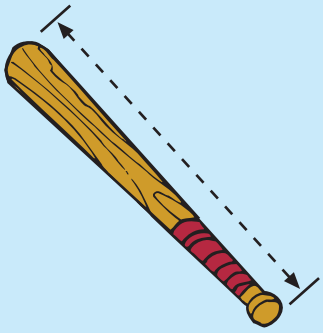
1 foot = 12 inches
1 yard = 3 feet
1 mile = 1,760 yards or 5,280 feet

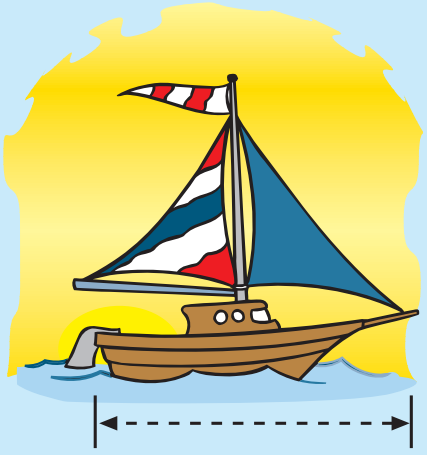
inches

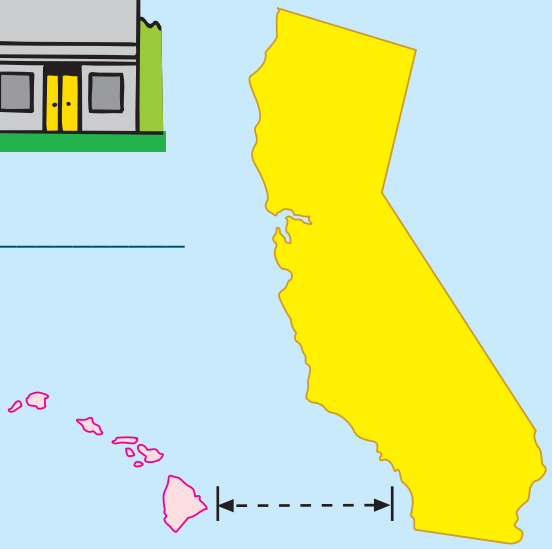










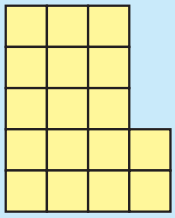


Measurement: Perimeter and Area

Perimeter is the distance around a figure. It is found by adding the lengths of the sides. **Area** is the number of square units needed to cover a region. The area is found by adding the number of square units. A unit can be any unit of measure. Most often inches, feet, or yards are used.

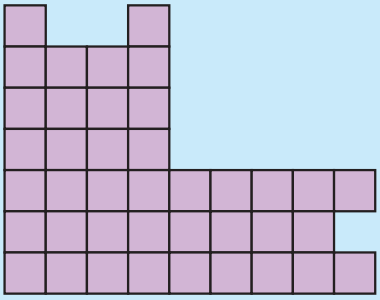
Directions: Find the perimeter and area for each figure. The first one is done for you.

☐ = 1 square unit



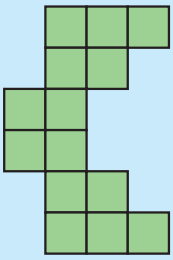
Perimeter = 18 units

Area = 17 sq. units



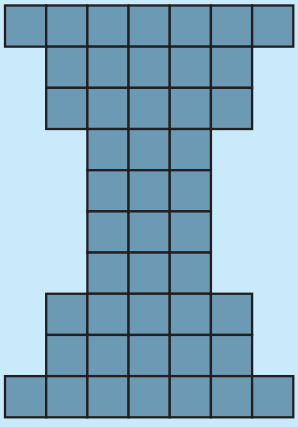
Perimeter = _____ units

Area = _____ sq. units



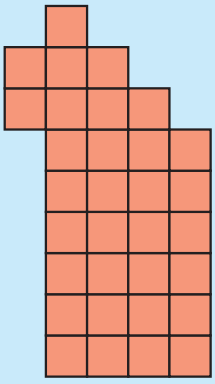
Perimeter = _____ units

Area = _____ sq. units



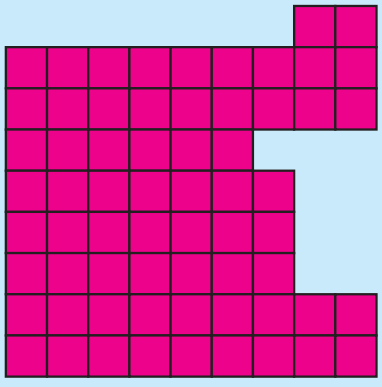
Perimeter = _____ units

Area = _____ sq. units



Perimeter = _____ units

Area = _____ sq. units



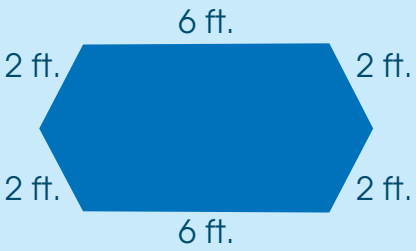
Perimeter = _____ units

Area = _____ sq. units

Measurement: Perimeter

Perimeter is calculated by adding the lengths of the sides of a figure.

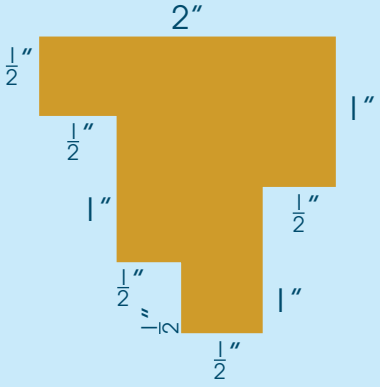
Examples:



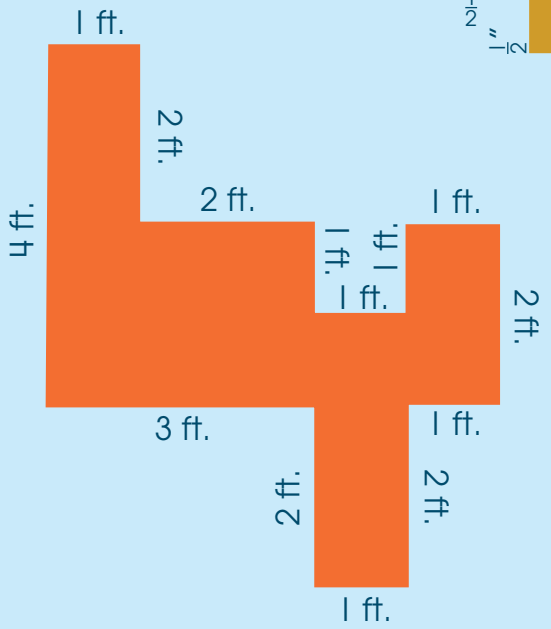
$2 + 2 + 2 + 2 + 6 + 6 = 20$
The perimeter of this hexagon is 20 ft.

$10 + 10 + 3 + 3 = 26$
The perimeter of this parallelogram is 26 yd.

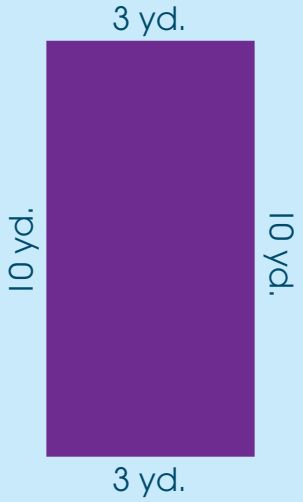
Directions: Find the perimeter of the following figures.



_____
Perimeter



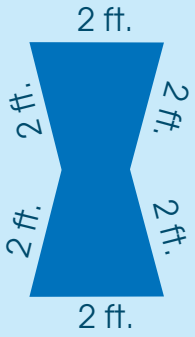
_____
Perimeter

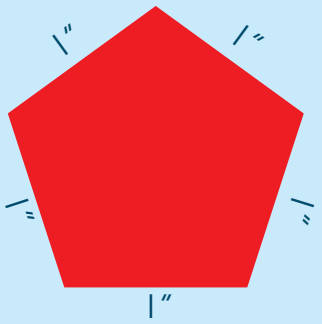


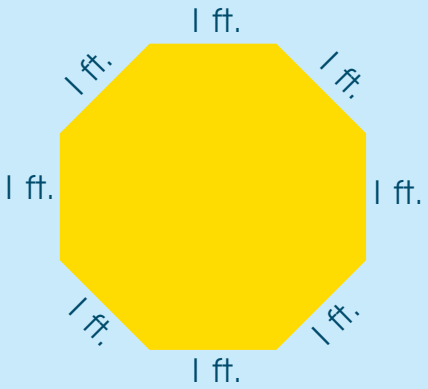
_____
Perimeter

Measurement: Perimeter and Area

Directions: Calculate the perimeter of each figure.



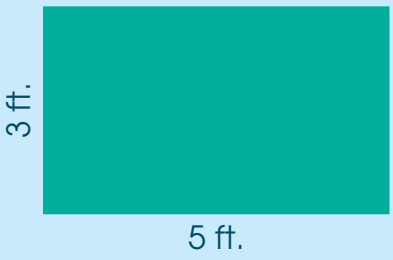


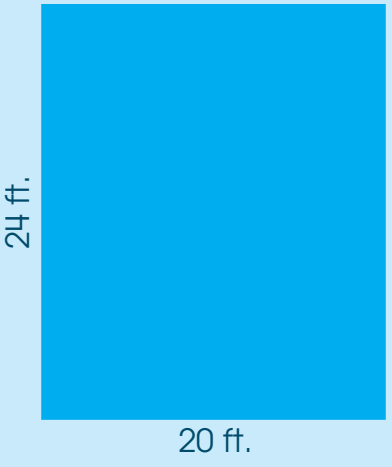


_____ _____ _____

Area is also calculated by multiplying the length times the width of a square or rectangular figure. Use the formula: A = l x w.

Directions: Calculate the area of each figure.



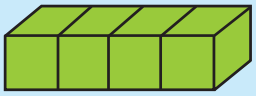


_____ _____ _____

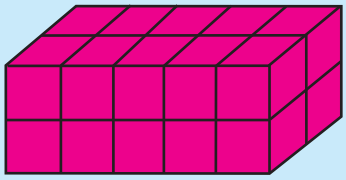
Measurement: Volume

Volume is the number of cubic units that fit inside a figure.

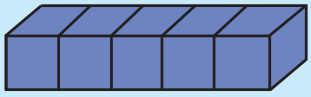
Directions: Find the volume of each figure. The first one is done for you.



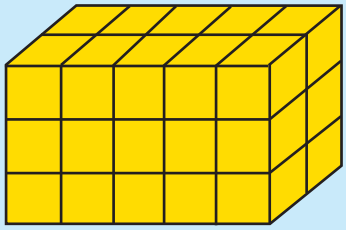
4 cubic units



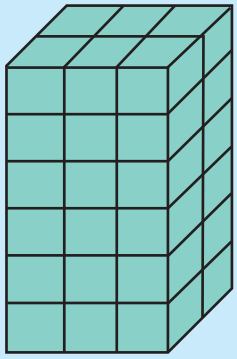
_____ cubic units



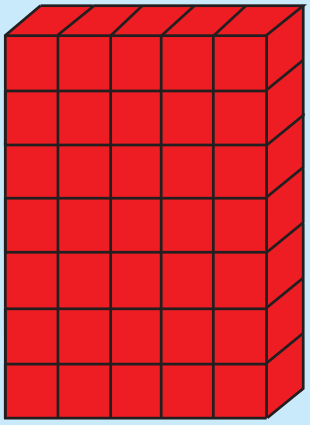
_____ cubic units



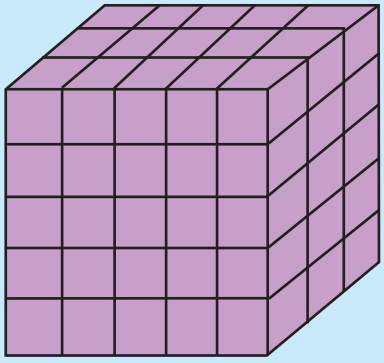
_____ cubic units



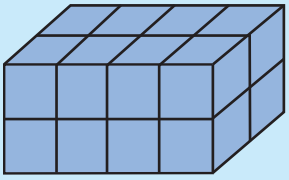
_____ cubic units



_____ cubic units



_____ cubic units

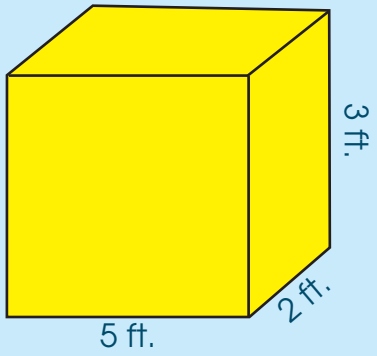


_____ cubic units

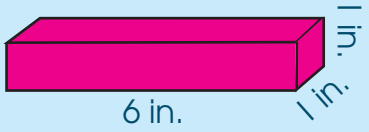
Measurement: Volume

The volume of a figure can also be calculated by multiplying the length times the width times the height.
Use the formula: l x w x h.

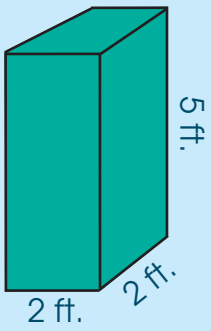
Example:
3 x 5 x 2 = 30 cubic feet



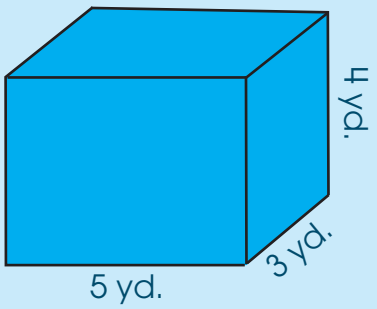
Directions: Find the volume of the following figures. Label your answers in feet, inches, or yards. The first one is done for you.



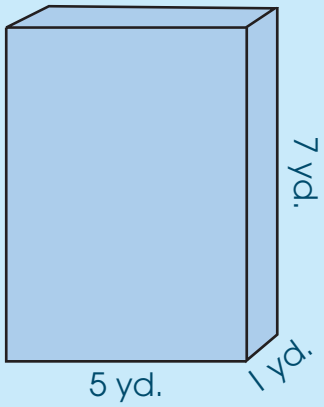
6 cubic inches



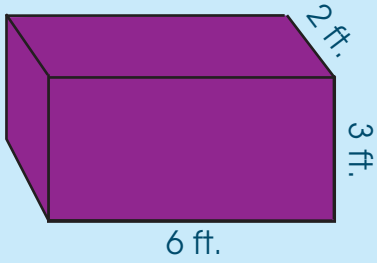
_____



_____



_____



_____

Measurement: Liquid

The **cup**, **pint**, **quart**, and **gallon**, are units in the standard system for measuring liquids.

Directions: Gather the following materials: 2 dish tubs, one filled with water, sand, or rice; measuring cups; pint container; quart container; gallon container. Then, answer the questions and complete the chart.

1. Use the cup measure to pour water, sand, or rice into the pint container. How many cups did it take?

   _____ cups = 1 pint

2. Use the cup measure to find out how many cups are in a quart and a gallon.

   _____ cups = 1 quart

   _____ cups = 1 gallon

3. Use the pint container to pour water, sand, or rice into the quart container. How many pints are in a quart?

   _____ pints = 1 quart

4. How many pints does it take to fill a gallon?

   _____ pints = 1 gallon

5. Use the quart measure to find out how many quarts are in a gallon.

   _____ quarts = 1 gallon

Measurement Chart

_____ cups = 1 pint

_____ cups = 1 quart

_____ cups = 1 gallon

_____ pints = 1 quart

_____ pints = 1 gallon

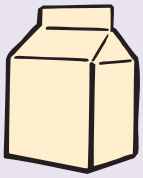
_____ quarts = 1 gallon

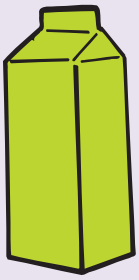
Measurement: Cup, Pint, Quart, Gallon

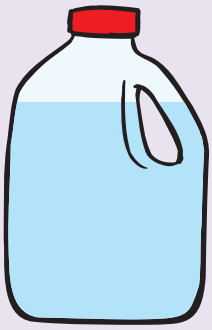
Directions: Circle the number of objects to the right that equal the objects on the left. The first one is done for you.

2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon


= 1 cup


= 1 pint

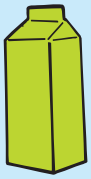
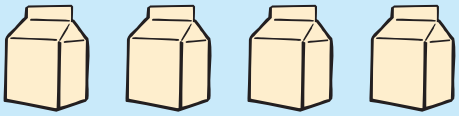

= 1 quart

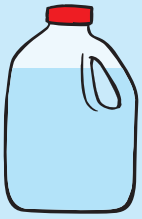
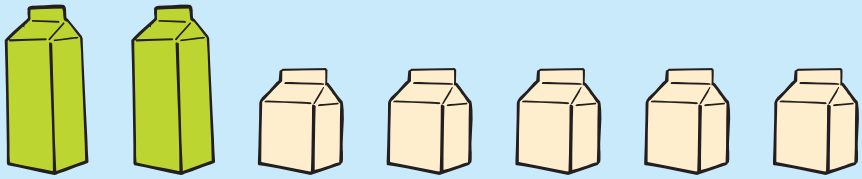

= 1 gallon


=



=

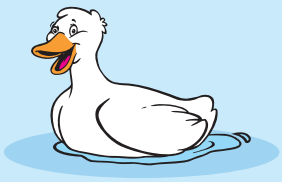


=



=


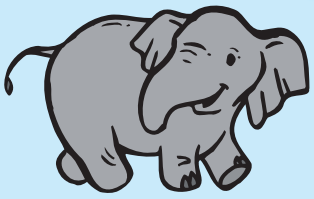
Measurement: Ounce, Pound, Ton

The **ounce**, **pound**, and **ton** are units in the standard system for measuring weight.

ounce



pound

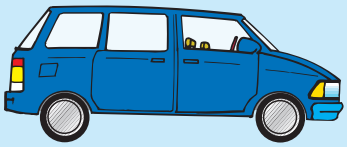


ton

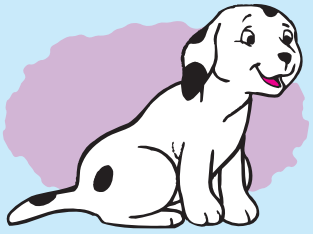
16 ounces = 1 pound 2,000 pounds = 1 ton

Directions: Choose the measure of weight you would use for each object.

Example:  ounces



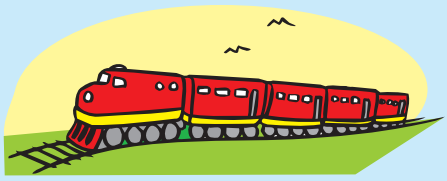
_____



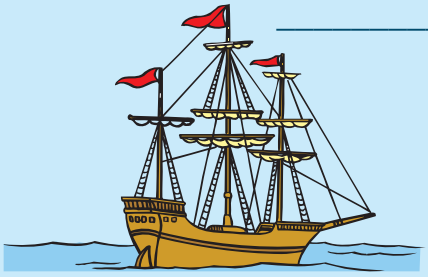
_____

_____

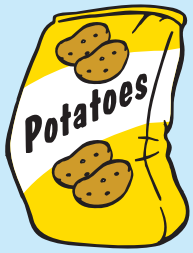
_____



_____



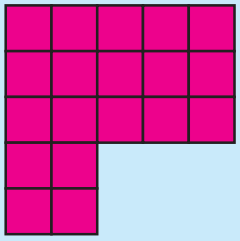
_____



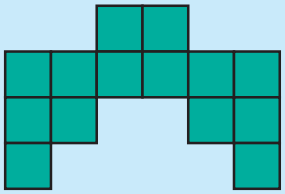
_____

Review

Directions: Find the perimeter and area of each figure.



☐ = 1 square unit



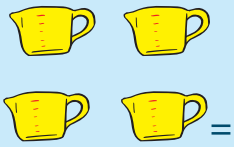
Perimeter = _____ units

Area =_____ sq. units

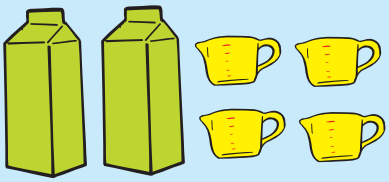
Perimeter = _____ units

Area =_____ sq. units

Directions: How much does it equal?

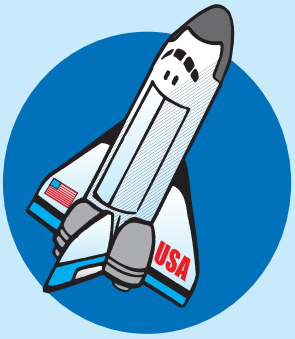


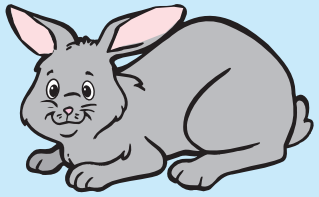
= _____ pints



= _____ pints

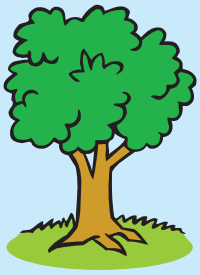
Directions: Write whether you would use ounce, pound, or ton to weigh the following.

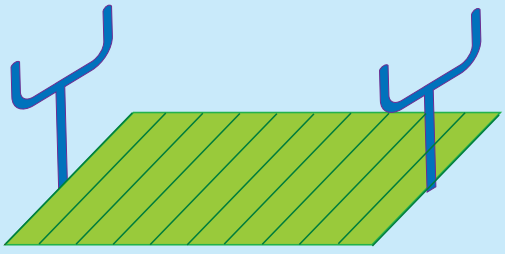




_____ _____ _____

Directions: Write whether you would use an inch, foot, yard, or mile to measure the following.





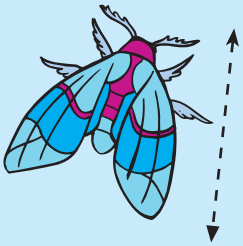
_____ _____ _____

Metric Measurement: Centimeter, Meter, Kilometer

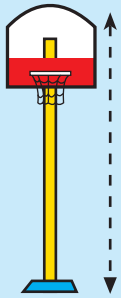
In the metric system, there are three units of linear measurement: centimeter (cm), meter (m), and kilometer (km).

Centimeters (cm) are used to measure the lengths of small to medium-sized objects. **Meters (m)** measure the lengths of longer objects, such as the width of a swimming pool or height of a tree (100 cm = 1 meter). **Kilometers (km)** measure long distances, such as the distance from Cleveland to Cincinnati or the width of the Atlantic Ocean (1,000 m = 1 km).

Directions: Write whether you would use cm, m, or km to measure each object.



_____



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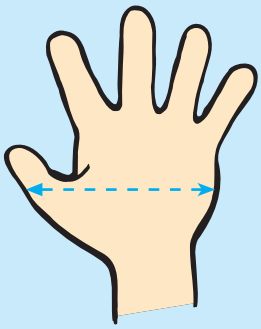

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Chicago

New York City

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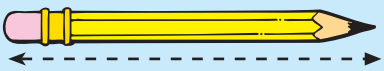

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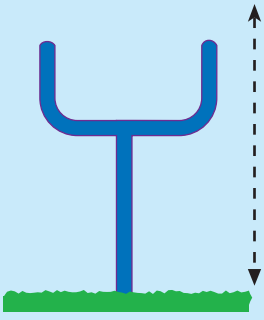

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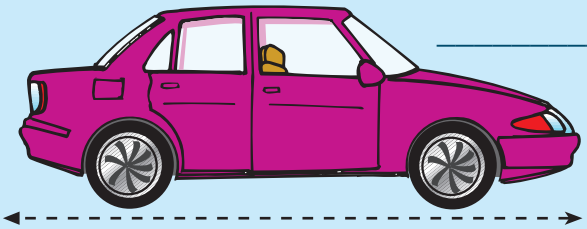

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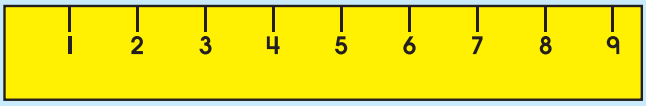
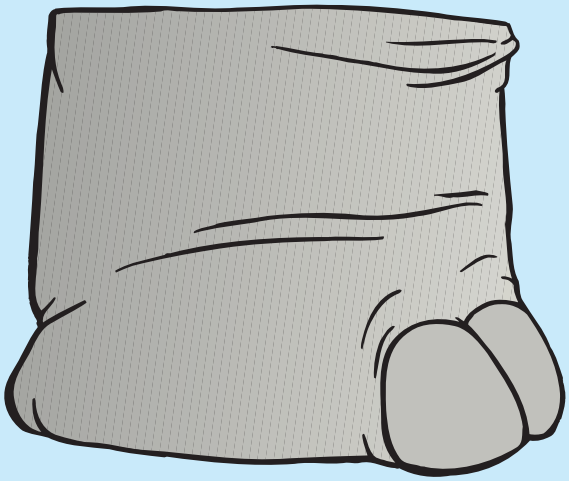
Metric Measurement: Centimeter

Directions: Use a centimeter ruler to measure the width of each foot to the nearest centimeter.





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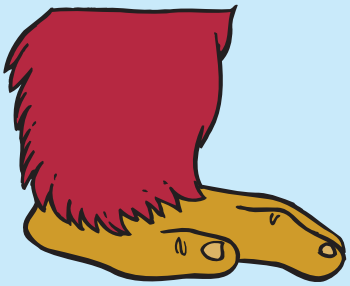

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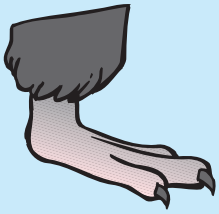

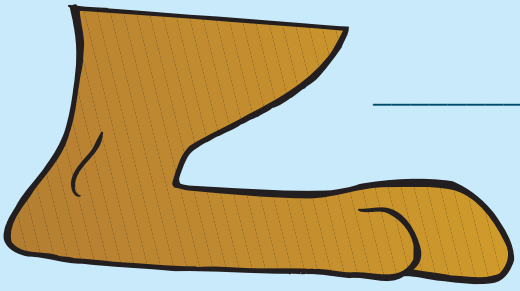

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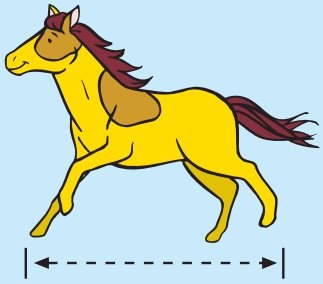
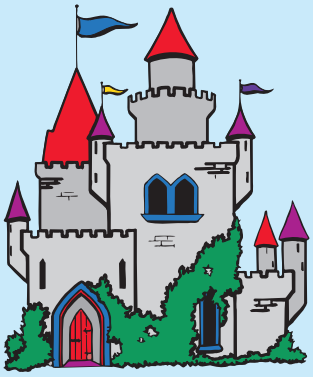
Metric Measurement: Meter and Kilometer

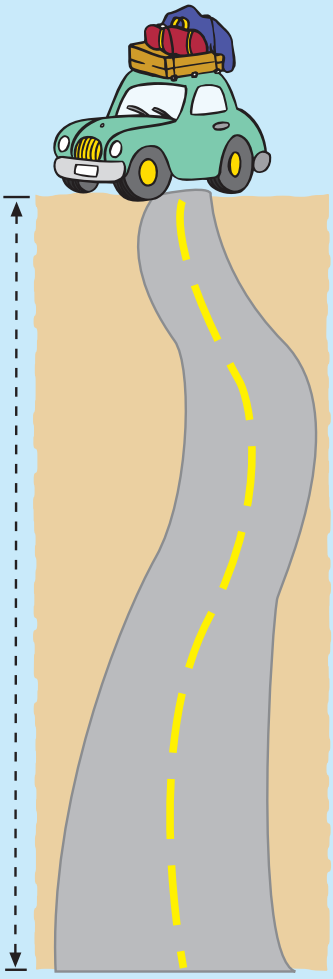
A meter is a little longer than a yard—39.37 inches (a yard is 36 inches). A kilometer is equal to about $\frac{5}{8}$ of a mile.

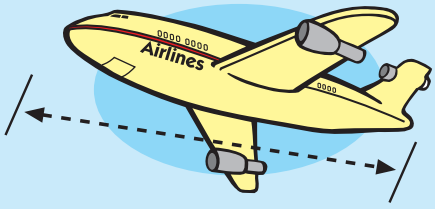
Directions: Choose the measure of distance you would use for the following.

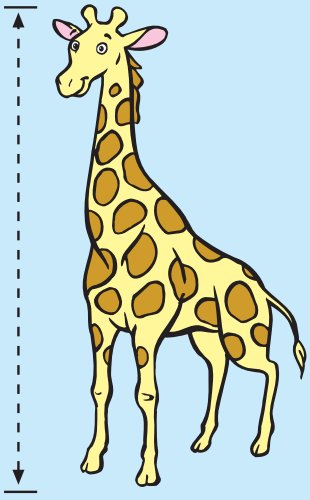


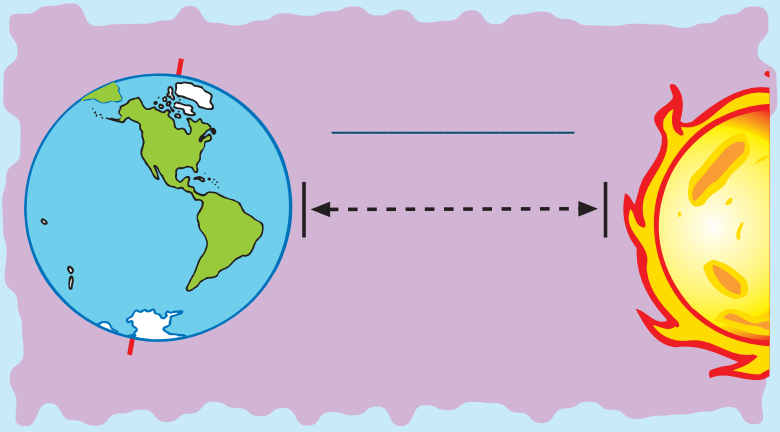
meter







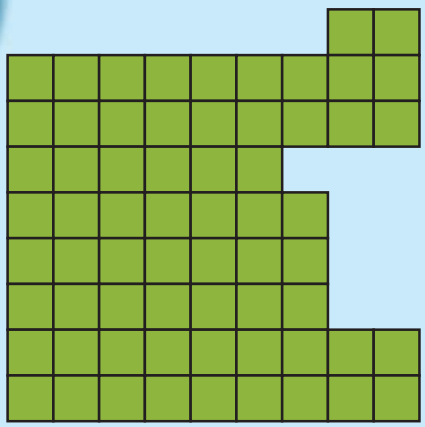




Metric Measurement: Perimeter, Area, Volume

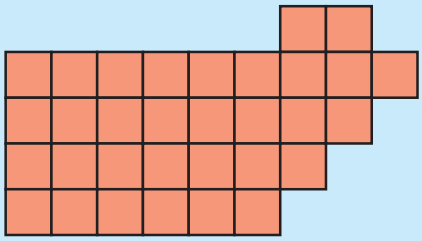
Directions: Find the perimeter and area of each figure.

☐ = 1 square unit



Perimeter = _____ units

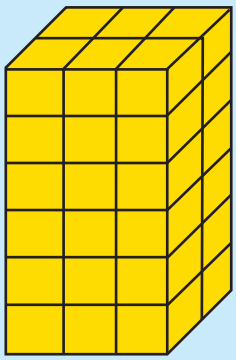
Area =_____ sq. units



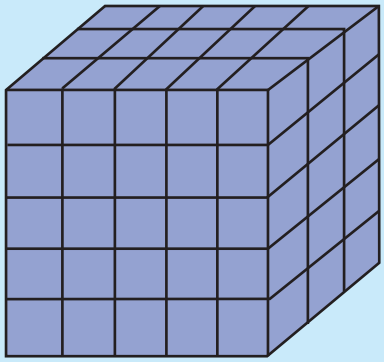
Perimeter = _____ units

Area =_____ sq. units

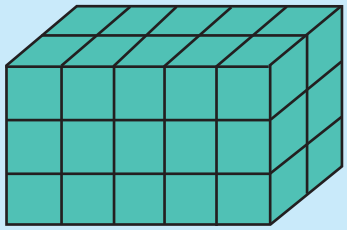
Directions: Find the volume of each figure.



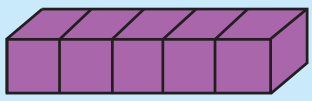
_____ cubic meters



_____ cubic meters



_____ cubic meters



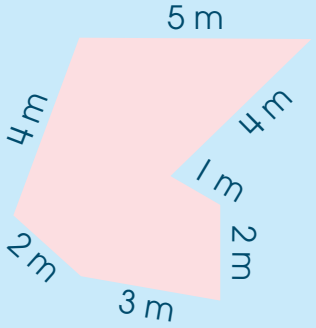
_____ cubic meters

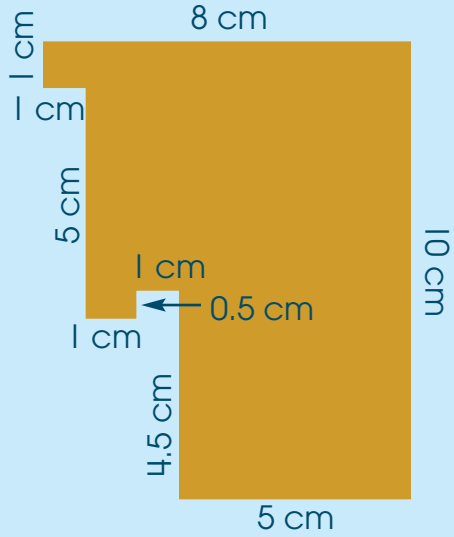
Metric Measurement: Perimeter

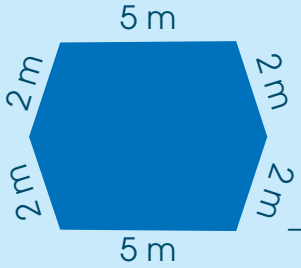
Directions: Calculate the perimeter of each figure.

Example:

4 + 5 + 4 + 1 + 2 + 3 + 2 = 21 meters







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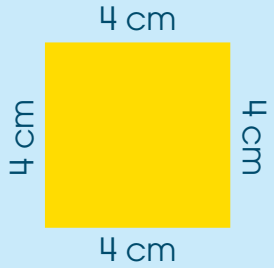

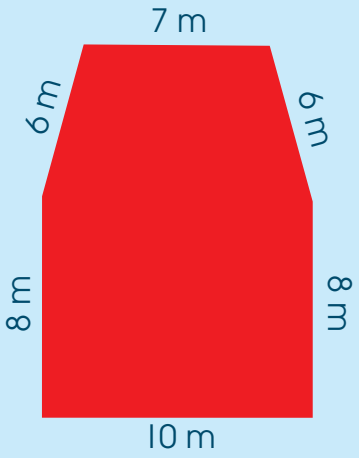

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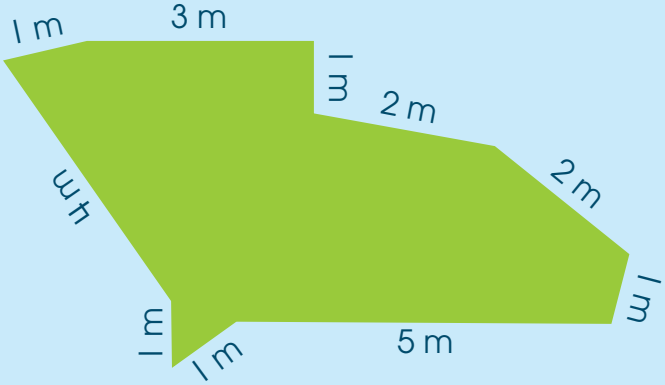

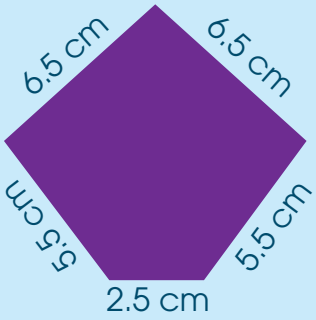

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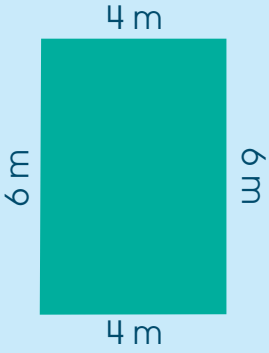
Metric Measurement: Area and Volume

Directions: Calculate the area of each figure.

Use the formula: A = l x w.

_____

_____



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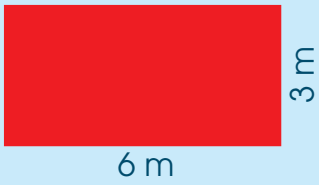

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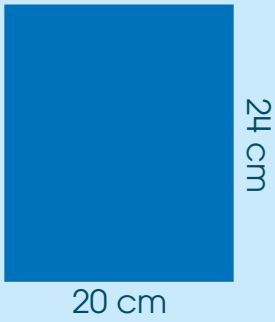

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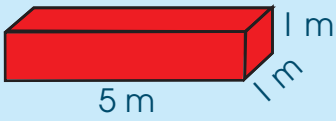
Directions: Calculate the volume of each figure. Use the formula: V = l x w x h.



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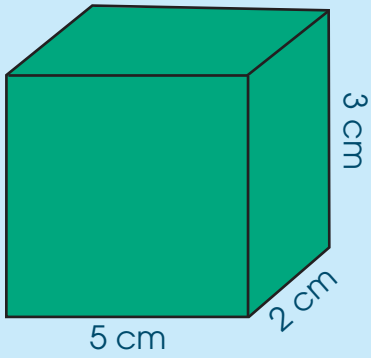

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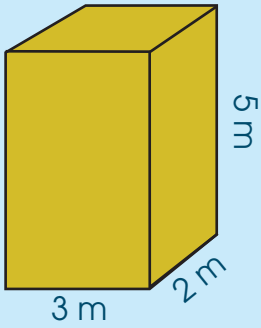

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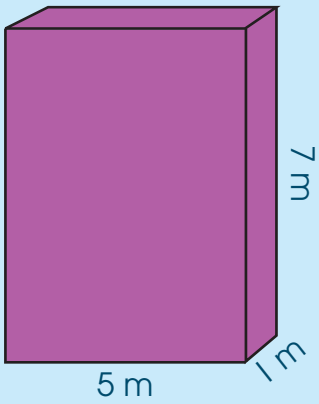

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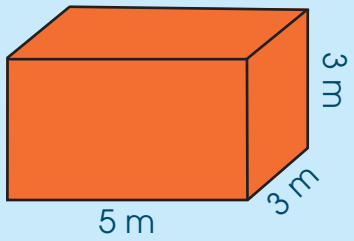

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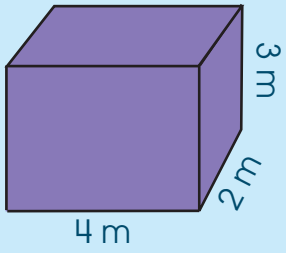

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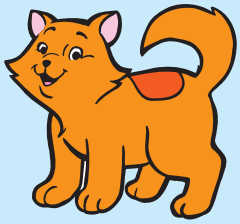
Metric Measurement: Gram and Kilogram

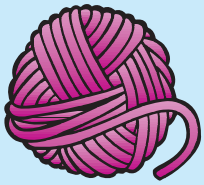
Grams and **kilograms** are measurements of weight in the metric system. A gram (g) weighs about $\frac{1}{28}$ of an ounce. A grape or paper clip weighs about one gram. There are 1,000 grams in a kilogram. A kilogram (kg) weighs about 2.2 pounds. A brick weighs about 1 kilogram.

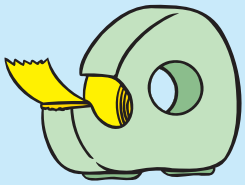
Directions: Choose grams or kilograms to measure the following.

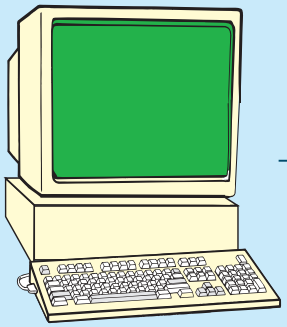
Example:

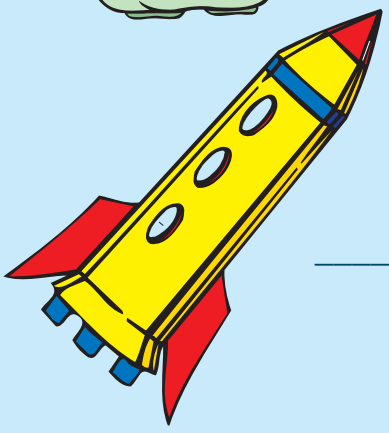
grams

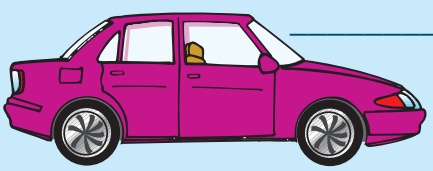










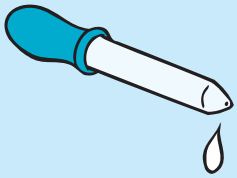


Metric Measurement: Milliliter and Liter

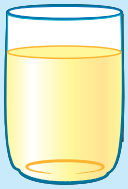
Liters and **milliliters** are measurements of liquid in the metric system. A milliliter (mL) equals 0.001 liter or 0.03 fluid ounces. A drop of water equals about 1 milliliter. Liters (L) measure large amounts of liquid. There are 1,000 milliliters in a liter. One liter measures 1.06 quarts. Soft drinks are often sold in 1-liter bottles.

Directions: Choose milliliters or liters to measure these liquids.

Example:



milliliters



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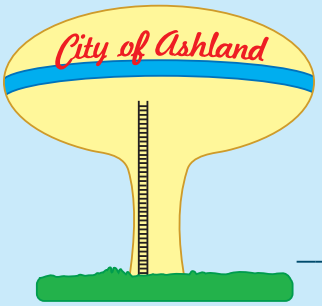

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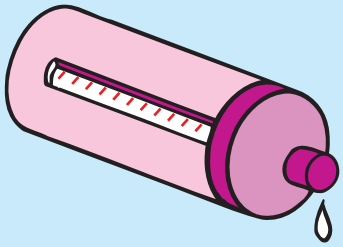

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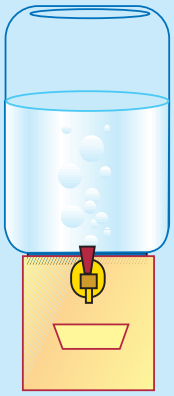

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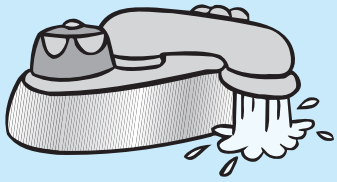
Metric Measurement: Weight and Liquid

Directions: Choose grams (g) or kilograms (kg) to weigh the following objects. The first one is done for you.

rhinoceros	kg	person	_____
dime	_____	airplane	_____
bucket of wet sand	_____	spider	_____
eyeglasses	_____	pair of scissors	_____
toy train engine	_____	horse	_____

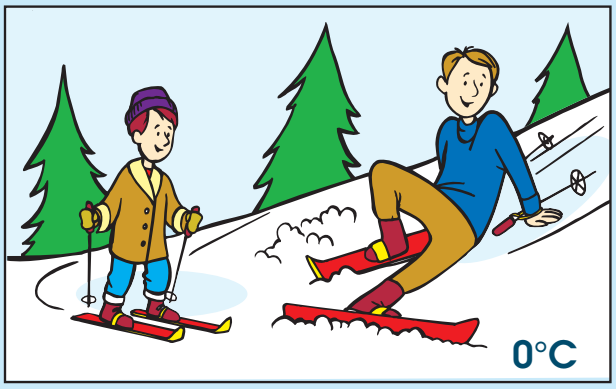


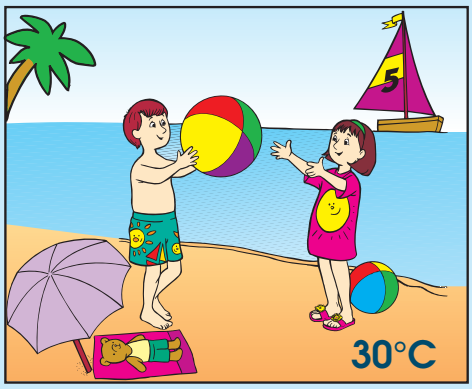
Directions: Choose milliliters (mL) or liters (L) to measure the liquids in the following containers. The first one is done for you.

swimming pool	L	baby bottle	_____
small juice glass	_____	teapot	_____
gasoline tank	_____	outdoor fountain	_____
test tube	_____	ink pen	_____
washing machine	_____	Lake Erie	_____

Temperature: Celsius

Temperature measures how hot or cold something is. **Celsius** is used to measure temperature in the metric system. **°C** stands for degrees Celsius.





Directions: Use the thermometer to answer these questions.

At what temperature does water boil? _____

At what temperature does water freeze? _____

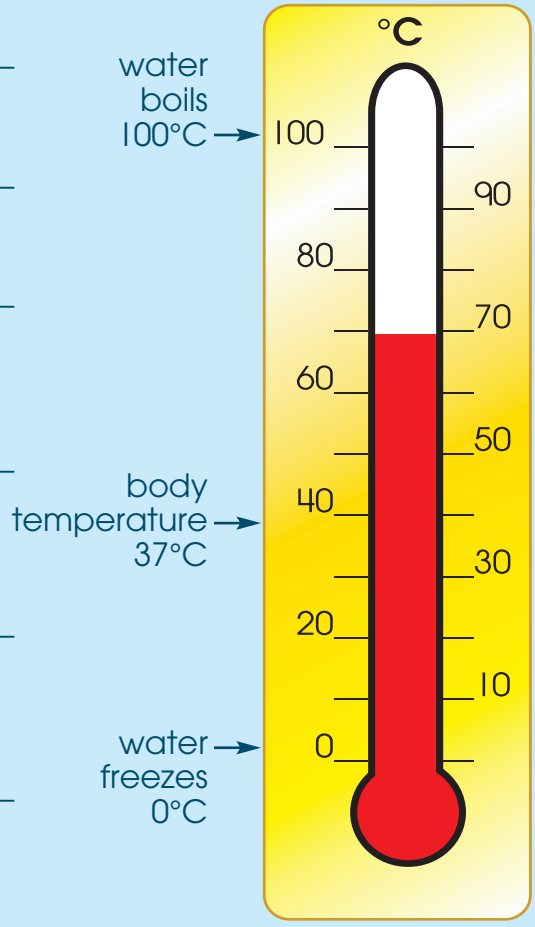
What is normal body temperature? _____

Is it a hot or cold day when the temperature is 42°C? _____

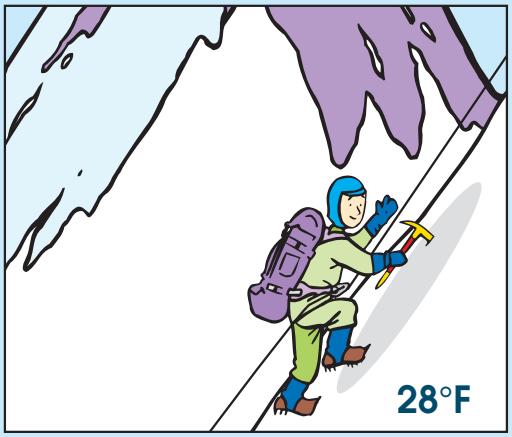
Is it a hot or cold day when the temperature is 5°C? _____

Which temperature best describes a hot summer day? 5°C 40°C 20°C _____

Which temperature best describes an icy winter day? 0°C 15°C 10°C _____



Temperature: Fahrenheit



Fahrenheit is used to measure temperature in the standard system. °**F** stands for degrees Fahrenheit.

Directions: Use the thermometer to answer these questions.

At what temperature does water boil? _____

At what temperature does water freeze? _____

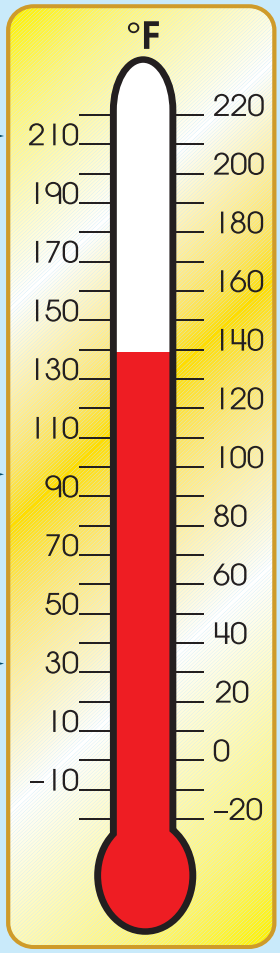
What is normal body temperature? _____

Is a 100°F day warm, hot, or cold? _____

Is a 0°F day warm, hot, or cold? _____

Which temperature best describes room temperature?
58°F 70°F 80°F _____

Which temperature best describes a cold winter day?
22°F 38°F 32°F _____



Review

Directions: Choose centimeters, meters, or kilometers to measure the following.

_____ height of a tree

_____ length of a shoe

_____ distance around Earth

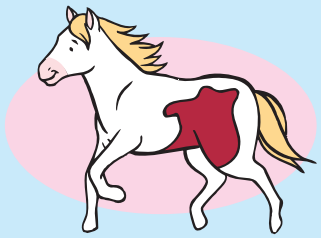
_____ height of a building

_____ length of your yard

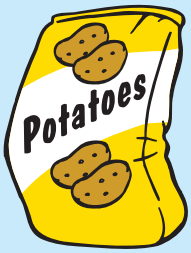
_____ distance a plane flies

Directions: Choose grams or kilograms to measure the following.

_____



_____

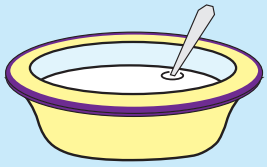


_____

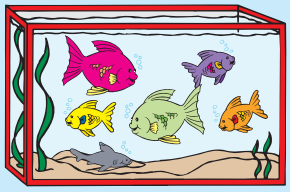
_____

Directions: Choose liters or milliliters to measure the following.

_____



_____



_____

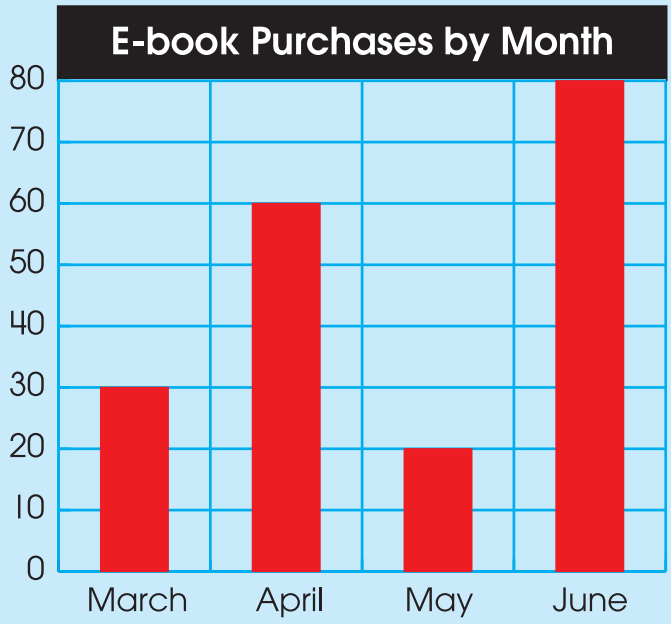
_____

Graphing

A **graph** is a drawing that shows information about changes in numbers.

Directions: Answer the questions by reading the graphs.

Bar Graph



How many e-books were purchased in June?

_____

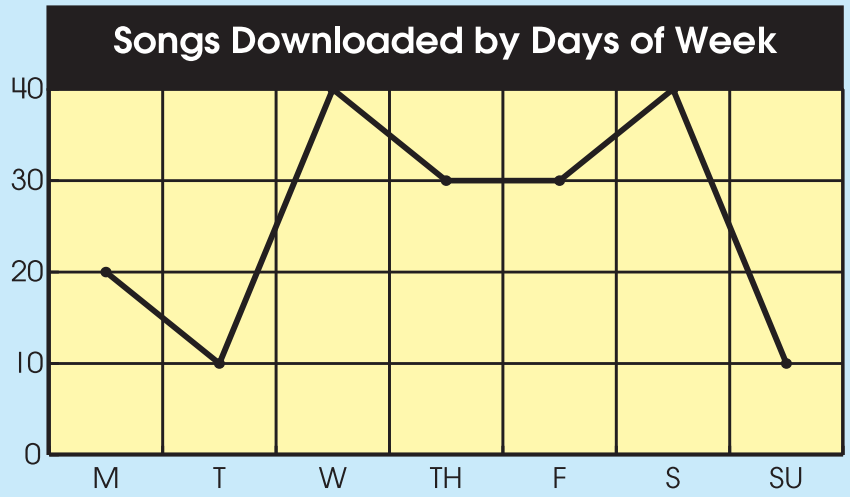
In which month were the fewest e-books purchased?

_____

How many e-books were sold for all 4 months?

_____

Line Graph



On which days were the fewest songs downloaded?

_____

How many songs were downloaded in 1 week?

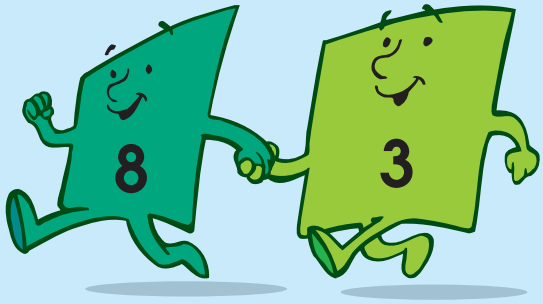
_____

Ordered Pairs

An **ordered pair** is a pair of numbers used to locate a point.

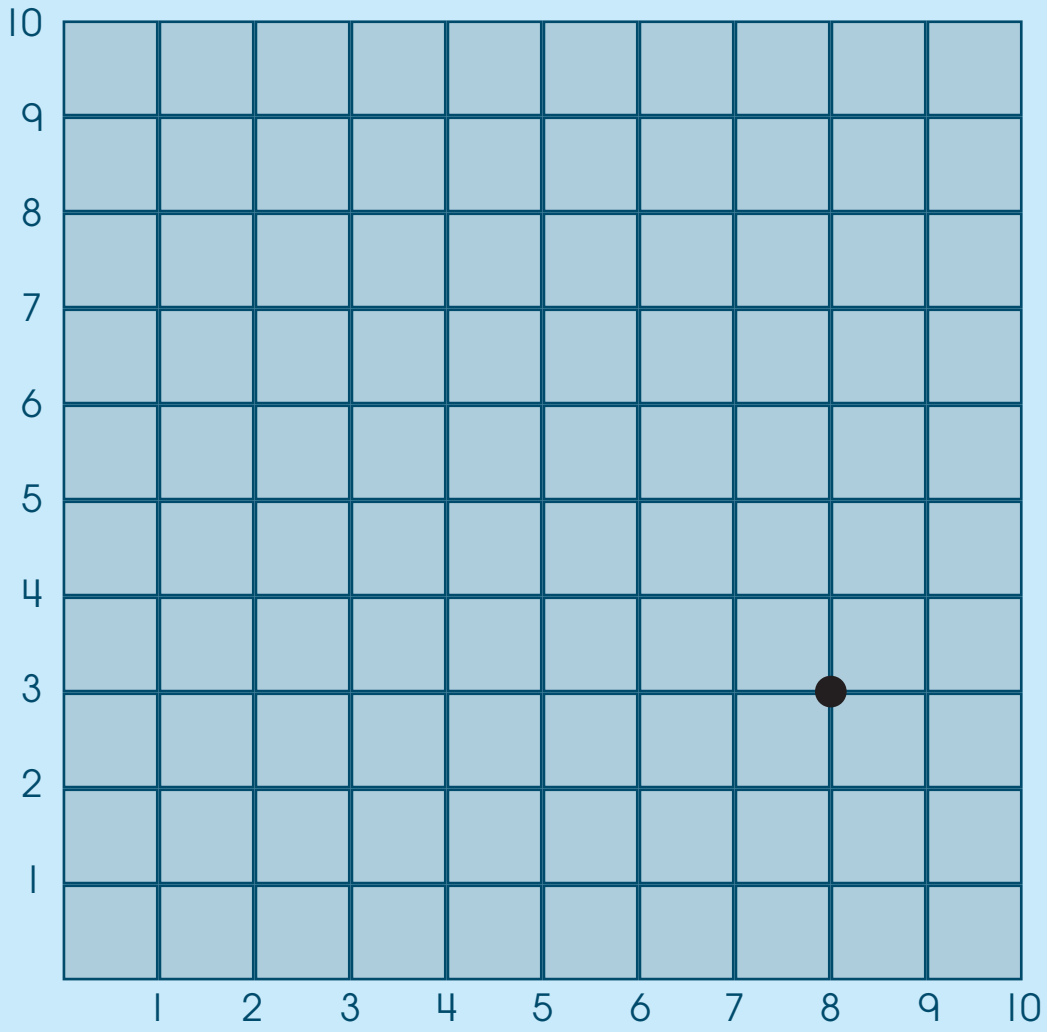
Example: (8, 3)

Step 1: Count across to line 8 on the graph.
Step 2: Count up to line 3 on the graph.
Step 3: Draw a dot to mark the spot.



Directions: Map the following spots on the grid using ordered pairs.

(4, 7) (9, 10) (2, 1) (5, 6) (2, 2) (1, 5) (7, 4) (3, 8)



Graphing: Finding Ordered Pairs

Graphs or grids are sometimes used to find the location of objects.

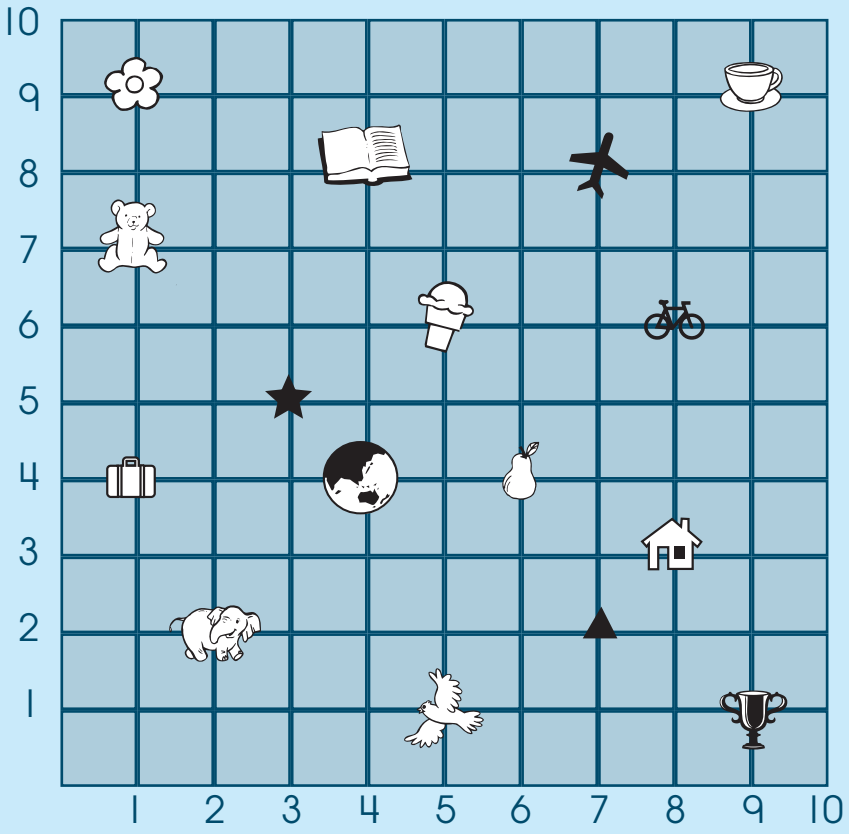
Example: The ice-cream cone is located at point (5, 6) on the graph. To find the ice cream's location, follow the line to the bottom of the grid to get the first number—5. Then, go back to the ice cream and follow the grid line to the left for the second number—6.

Directions: Write the ordered pair for the following objects. The first one is done for you.

book (4, 8) bike _____ suitcase _____

house _____ globe _____ cup _____

Directions: Identify the objects located at the following points. The first one is done for you.



(9, 1) trophy

(3, 5) _____

(2, 2) _____

(6, 4) _____

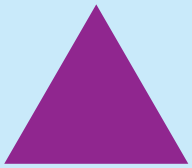
(1, 9) _____

(5, 1) _____

Geometry: Polygons

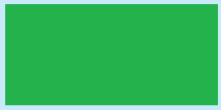
A **polygon** is a closed figure with three or more sides.

Examples:

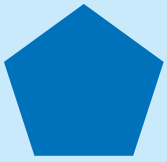


triangle
3 sides

square
4 equal sides

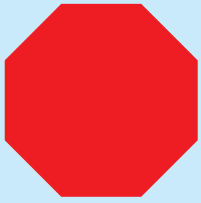


rectangle
4 sides



pentagon
5 sides

hexagon
6 sides

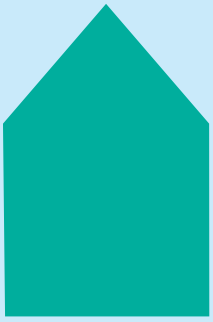


octagon
8 sides

Directions: Identify the polygons.

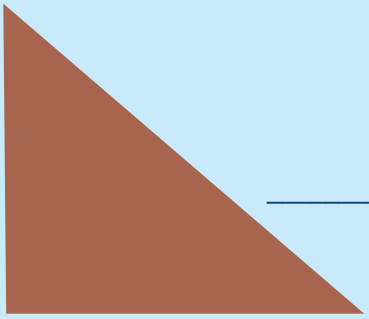
_____

_____



_____

_____



_____

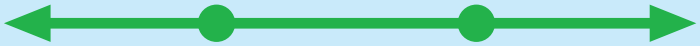
_____

Geometry: Line, Ray, Segment

A **line segment** has two end points.

Write: $\overline{AB}$

A **line** has no end points and goes on in both directions.

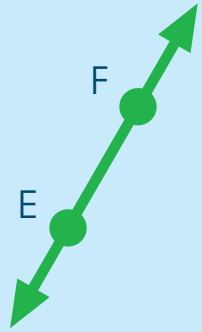


Write: $\overleftrightarrow{CD}$

A **ray** is part of a line and goes on in one direction. It has one end point.

Write: $\overrightarrow{EF}$

Directions: Identify each of the following as a line, line segment, or ray.



_____ _____ _____

_____ _____ _____

Geometry: Angles

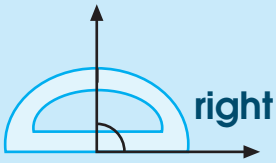
The point at which two line segments meet is called an **angle**. There are three types of angles—right, acute, and obtuse.

A **right angle** is formed when the two lines meet at 90°.

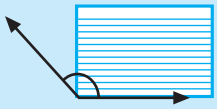
An **acute angle** is formed when the two lines meet at less than 90°.

An **obtuse angle** is formed when the two lines meet at greater than 90°.

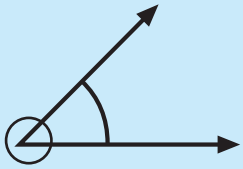
Angles can be measured with a protractor or index card. With a protractor, align the bottom edge of the angle with the bottom of the protractor, with the angle point at the circle of the protractor. Note the direction of the other ray and the number of degrees of the angle.

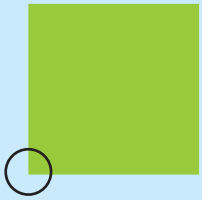


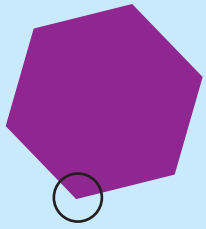
Place the corner of an index card in the corner of the angle. If the edges line up with the card, it is a right angle. If not, the angle is acute or obtuse.



Directions: Use a protractor or index card to identify the following angles as right, obtuse, or acute.







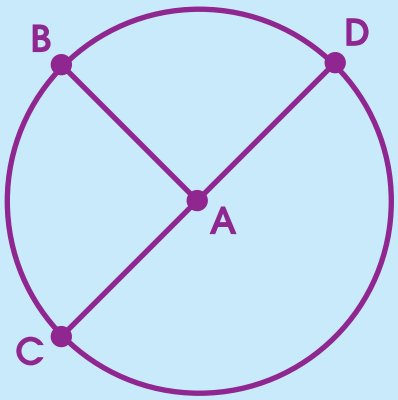
_____ _____ _____

Geometry: Circles

A **circle** is a round figure. It is named by its center. A **radius** is a line segment from the center of a circle to any point on the circle. A **diameter** is a line segment with both end points on the circle. The diameter always passes through the center of the circle.

Directions: Name the radius, diameter, and circle.

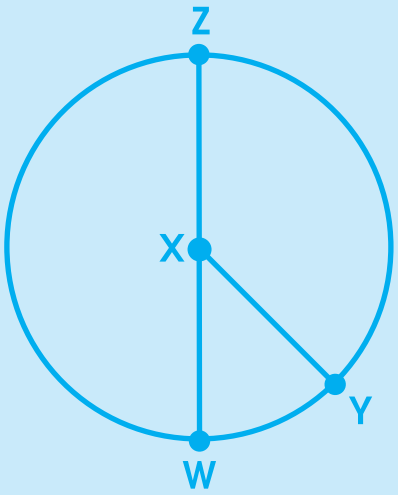
Example:



Circle A

Radius AB

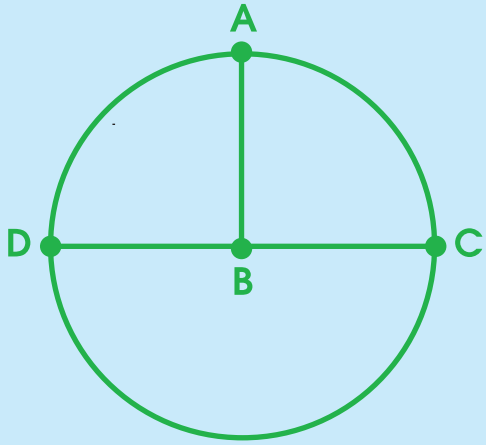
Diameter DC



Circle _____

Radius _____

Diameter _____



Circle _____

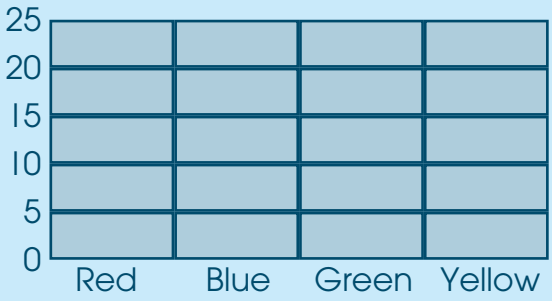
Radius _____

Diameter _____

Review

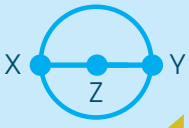
Directions: Complete the graph using the information in the box.

Team	Games Played
Red	10
Blue	20
Green	15
Yellow	25



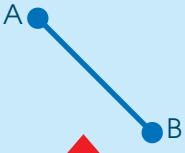
Directions: Draw a line from the figure to its name.

line



square

segment



diameter

octagon

triangle

pentagon

Glossary

Acute Angle: An angle formed when two lines meet at less than 90°.

Addition: "Putting together" or adding two or more numbers to find the sum.

Angle: The point at which two line segments meet.

Area: The number of square units needed to cover a region.

Average: The result of adding two or more quantities and dividing by the number of quantities.

Celsius: A metric system measurement of temperature. °C stands for degrees Celsius.

Centimeter: A metric system measurement of length. There are 2.54 centimeters in an inch.

Circle: A round figure in which each point on the outside of the figure is an equal distance from the center of the figure.

Cup: A unit of volume in the standard system equal to 8 ounces.

Decimal: A number with one or more places to the right of a decimal point, such as 6.5 or 2.25.

Decimal Point: The dot between the ones place and the tenths place in a decimal.

Denominator: The number below the fraction bar in a fraction.

Diameter: A line segment that passes through the center of a circle and has both end points on the circle.

Difference: The answer in a subtraction problem.

Digits: The symbols used to write numbers: **0**, **1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**.

Dividend: The larger number divided by the smaller number, or divisor, in a division problem. Example: 28 ÷ 7 = 4; 28 is the dividend.

Division: A way to find how many times one number is contained in another number.
For example, 28 ÷ 7 = 4 means that there are 4 groups of 7 in 28.

Equivalent Fractions: Two different fractions that represent the same number, such as $\frac{1}{2}$ and $\frac{2}{4}$.

Estimate: To give an approximate rather than an exact answer.

Factors: The numbers multiplied together in a multiplication problem.

Fahrenheit: A standard system measurement of temperature. °F stands for degrees Fahrenheit.

Foot (ft.): A unit of length in the standard system equal to 12 inches.

Fraction: A number that names part of a whole, such as $\frac{1}{2}$ or $\frac{1}{3}$.

Glossary

Gallon: A unit of liquid measure in the standard system equal to 4 quarts.

Gram (g): A metric system measurement of weight. One gram equals 0.001 kilogram or $\frac{1}{28}$ of an ounce.

Graph: A drawing that shows information about changes in numbers.

Hexagon: A polygon with six sides.

Inch (in.): A unit of length in the standard system equal to $\frac{1}{12}$ of a foot.

Kilogram (kg): A metric system measurement of weight. One kilogram equals 1,000 grams or 2.2 pounds.

Kilometer (km): A metric system measurement of length. One kilometer equals 1,000 meters or 0.62 mile.

Line: A line with no end points that goes on in both directions.

Line Segment: A line with two end points.

Liter (L): A metric system measurement of liquid. One liter equals 1,000 milliliters or 1.06 quarts.

Meter (m): A metric system measurement of length. One meter equals 39.37 inches.

Mile (mi.): A unit of length in the standard system equal to 1,760 yards or 5,280 feet.

Milliliter (mL): A metric system measurement of liquid. One milliliter equals 0.001 liter or 0.03 fluid ounce.

Mixed Number: A number written as a whole number and a fraction, such as $6\frac{5}{8}$.

Multiple: The product of a specific number and any other number. For example, the multiples of 2 are 2 (2 x 1), 4 (2 x 2), 6, 8, 10, 12, and so on.

Multiplication: A short way to find the sum of adding the same number a certain amount of times, such as 7 x 4 = 28 instead of 7 + 7 + 7 + 7 = 28.

Numerator: The number above the fraction bar in a fraction.

Obtuse Angle: An angle formed when two lines meet at greater than 90°.

Octagon: A polygon with eight sides.

Ordered Pair: A pair of numbers used to locate a point.

Ounce (oz.): A unit of measure in the standard system for weight. One ounce equals $\frac{1}{16}$ of a pound.

Pentagon: A polygon with five sides.

Glossary

Perimeter: The distance around a figure, found by adding the lengths of the sides.

Pint (pt.): A unit of liquid measure in the standard system equal to 2 cups.

Place Value: The value of a digit or numeral shown by where it is in a number.

Polygon: A closed figure with three or more sides.

Pound (lb.): A unit of measure in the standard system for weight. One pound equals 16 ounces.

Product: The answer in a multiplication problem.

Quart (qt.): A unit of liquid measure in the standard system equal to 4 cups or 2 pints.

Quotient: The answer in a division problem.

Radius: A line segment from the center of a circle to any point on the circle. It is equal to half the length of the diameter.

Ray: A part of a line that goes on in one direction. It has one end point.

Rectangle: A figure with four corners and four sides. The sides opposite one another are the same length.

Reduce: To divide by the greatest common factor in a fraction.

Regroup: To use 10 ones to form one 10, 10 tens to form one hundred, one 10 and 5 ones to form 15, and so on.

Remainder: The number left over in the quotient of a division problem.

Right Angle: An angle formed when two lines meet at 90°.

Rounding: Expressing a number to the nearest ten, hundred, thousand, and so on. For example, round 18 to 20; round 11 to 10.

Skip Counting: A quick way to count by skipping numbers.

Square: A figure with four corners and four sides of equal length.

Subtraction: "Taking away" or subtracting one number from another.

Sum: The answer in an addition problem.

Temperature: How hot or cold something is.

Ton: A unit of measure in the standard system for weight. One ton equals 2,000 pounds.

Triangle: A figure with three corners and three sides.

Volume: The number of cubic units that fit inside a figure.

Yard (yd.): A unit of distance in the standard system. There are 3 feet in a yard.

Answer Key

Place Value

3

Place value is the value of a digit, or numeral, shown by where it is in the number. For example, in 1,234, 1 has the place value of thousands, 2 is hundreds, 3 is tens, and 4 is ones.

Directions: Write the numbers in the correct boxes to find how far the car has traveled.

one thousand
six hundreds
eight ones
nine ten thousands
four tens
two millions
five hundred thousands

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
2	5	9	1	6	4	8

How many miles has the car traveled? 2,591,648 miles

Directions: In the number . . .

2,386 — 6 — is in the ones place.

4,957 — 9 — is in the hundreds place.

102,432 — 0 — is in the ten thousands place.

489,753 — 9 — is in the thousands place.

1,743,998 — 1 — is in the millions place.

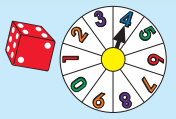
Master Skills Math Grade 4

3

Place Value: Standard Form

4

For this activity, you will need a number spinner or number cube.



Directions: Roll the cube or spin the spinner the same number of times as there are spaces in each place value box. The first number rolled or spun goes in the ones place, the second number in the tens place, and so on.

Example:

thousands	hundreds	tens	ones
4	5	6	7

Standard Form: 4,567

Answers will vary.

Directions: Write the number words for the numerals above.

Answers will vary.

Master Skills Math Grade 4

4

Place Value: Expanded Notation and Standard Form

5

Directions: Use the number cube or spinner to create numbers for the place value boxes below. Then, write the number in expanded notation and standard form.

Example:

thousands	hundreds	tens	ones
8	6	2	4

Standard Form: 8,624

Expanded Notation: 8,000 + 600 + 20 + 4

Standard Form: Answers will vary.

Expanded Notation: Answers will vary.

Standard Form: Answers will vary.

Expanded Notation: Answers will vary.

Standard Form: Answers will vary.

Expanded Notation: Answers will vary.

Directions: Write the value of the 4 in each number below.

742,521 — 4 ten thousands (40,000)

456 — 4 hundreds (400)

65,504 — 4 ones (4)

Master Skills Math Grade 4

5

Add 'Em Up!

6

Addition is "putting together" or adding two or more numbers to find the sum.

Directions: Add the following problems as quickly as you can.

3 + 2 = 5	6 + 4 = 10	5 + 4 = 9	2 + 9 = 11		
6 + 2 = 8	4 + 1 = 5	9 + 6 = 15	7 + 6 = 13	8 + 7 = 15	8 + 9 = 17
9 + 4 = 13	1 + 8 = 9	4 + 7 = 11	7 + 9 = 16	5 + 6 = 11	5 + 3 = 8
		6 + 6 = 12	8 + 8 = 16	7 + 7 = 14	4 + 4 = 8
		2 + 8 = 10	5 + 2 = 7	5 + 6 = 11	5 + 8 = 13

How quickly did you complete this page? Answers will vary.

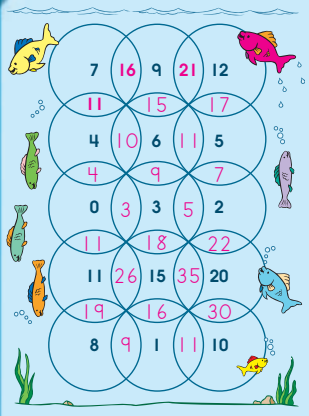
Master Skills Math Grade 4

6

Going in Circles

8

Directions: Where the circles meet, write the sum of the numbers from the circles on the right and left and above and below. The first one shows you what to do.



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8

Leafy Addition

9

Directions: Add, then color according to the code.

Code:
green — 79 orange — 35 red — 78
yellow — 87 purple — 56 brown — 94

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9

Answer Key

10 Magic Squares

Directions: Some of the number squares below are "magic" and some are not. Squares that add up to the same number horizontally, vertically, and diagonally are "magic." Add the numbers horizontally and vertically in each square to discover which ones are "magic."

Example:

4	9	2	15
3	5	7	15
8	1	6	15
15	15	15	15

Magic? yes

1.

7	2	1	10
3	4	8	15
5	9	6	20
15	15	15	17

Magic? no

2.

6	11	4	21
5	7	9	21
10	3	8	21
21	21	21	21

Magic? yes

3.

3	8	1	12
2	4	6	12
7	0	5	12
21	12	12	12

Magic? yes

4.

2	7	0	9
1	3	5	9
6	9	4	19
9	19	9	9

Magic? no

5.

5	10	3	18
4	6	8	18
9	2	7	18
18	18	18	18

Magic? yes

6.

7	12	5	24
6	8	10	24
11	4	9	24
24	24	24	24

Magic? yes

7.

1	2	3	6
4	5	6	15
7	8	9	24
12	15	18	15

Magic? no

8.

6	7	4	17
1	5	9	15
8	3	2	13
15	15	15	13

Magic? no

Challenge: Can you discover a pattern for number placement in the magic squares? Try to make a magic square of your own.

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10

11 Adding Larger Numbers

When adding two-, three-, and four-digit numbers, add the ones first, then tens, hundreds, thousands, and so on.

Example:

Tens	Ones
5	4
+ 2	5
	9

Tens	Ones
5	4
+ 2	5
7	9

81 + 23 = 104	67 + 22 = 89	34 + 82 = 116	730 + 265 = 995
76 + 73 = 149	1,803 + 1,104 = 2,907	523 + 476 = 999	267 + 12 = 279
	4,254 + 545 = 4,799	111 + 82 = 193	
	164 + 425 = 589	727 + 51 = 778	

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11

12 Addition: Regrouping

Regrouping uses 10 ones to form one 10, 10 tens to form one hundred, one 10 and 5 ones to form 15, and so on.

Directions: Add using regrouping. Color in all the boxes with a 5 in the answer to help the dog find its way home.

63 + 22 = 85	5,268 4,910 + 1,683 = 11,861	248 + 463 = 711	291 + 543 = 834	
1,736 + 5,367 = 7,103	2,946 + 7,384 = 10,330	3,245 1,239 + 981 = 5,465	738 + 692 = 1,430	896 + 728 = 1,624
2,603 + 5,004 = 7,607	4,507 + 289 = 4,796	1,483 + 6,753 = 8,236	1,258 + 6,301 = 7,559	27 469 + 6,002 = 6,498
782 + 65 = 847	485 + 276 = 761	3,421 + 8,064 = 11,485		
48 93 + 26 = 167	90 263 + 864 = 1,217	362 453 + 800 = 1,615		

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12

13 Subtraction

Subtraction is "taking away" or subtracting one number from another.

Directions: Complete the following problems as quickly as you can.

18 − 9 = 9	13 − 6 = 7	12 − 5 = 7	17 − 8 = 9	16 − 8 = 8
12 − 5 = 7	10 − 4 = 6	5 − 3 = 2	14 − 6 = 8	15 − 9 = 6
9 − 5 = 4	8 − 3 = 5	6 − 2 = 4	5 − 4 = 1	10 − 7 = 3
11 − 4 = 7	12 − 8 = 4	16 − 9 = 7	11 − 8 = 3	10 − 10 = 0

How quickly did you complete this page? _____

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13

14 Subtracting Larger Numbers

When you subtract larger numbers, subtract the ones first, then the tens, hundreds, thousands, and so on.

Example:

Tens	Ones
9	4
− 2	1
	3

Tens	Ones
9	4
− 2	1
7	3

Directions: Solve these subtraction problems.

29 − 26 = 3	99 − 58 = 41	359 − 55 = 304
735 − 734 = 1	849 − 726 = 123	7,678 − 4,321 = 3,557
865 − 731 = 134	55 − 25 = 30	9,876 − 1,234 = 8,642

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14

15 Subtraction: Regrouping

Directions: Subtract using regrouping.

Examples:

23 − 18 = 5	243 − 96 = 147

76 − 49 = 27	94 − 38 = 56	156 − 77 = 79	341 − 83 = 258	726 − 29 = 697
806 − 738 = 68	743 − 550 = 193	903 − 336 = 567	647 − 289 = 358	254 − 69 = 185
961 − 846 = 115	573 − 76 = 497	604 − 55 = 549	265 − 19 = 246	372 − 59 = 313
358 − 99 = 259	147 − 49 = 98			

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15

Answer Key

16 Addition and Subtraction

Directions: Add or subtract, using regrouping when needed.

32 + 68 + 43 = 143	183 + 246 + 89 = 518	456 + 398 + 597 = 1,451
643 − 377 = 266	1,563 − 941 = 622	3,586 + 4,218 = 7,804
8,711 − 4,937 = 3,774	9,361 − 7,452 = 1,909	5,734 + 6,298 = 12,032
293 + 431 + 93 = 817	743 − 529 = 214	849 + 250 + 82 = 1,181

68 + 93 + 146 = 307

43 + 745 − 29 = 759

156 + 627 + 541 = 1,324

Tom walks 389 steps from his house to the store. It is 149 steps to Elm Street. It is 52 steps from Maple Street to the store. How many steps is it from Elm Street to Maple Street?

188 steps

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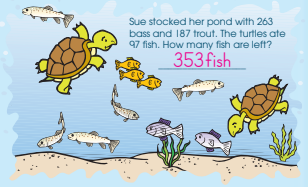
16

17 Addition and Subtraction

Directions: Add or subtract, using regrouping when needed.

38 + 43 + 21 = 102	1,269 + 2,453 + 8,219 = 11,941	5,792 − 4,814 = 978	629 + 491 + 308 = 1,428	4,697 − 2,988 = 1,709
5,280 − 3,147 = 2,133	68 + 27 + 42 = 137	197 + 436 + 213 = 846	7,321 − 2,789 = 4,532	456 + 974 = 1,430
3,932 + 4,681 = 8,613	492 + 863 + 57 = 1,412	9,873 + 5,483 = 15,356	4,978 + 2,131 = 7,109	6,235 + 2,986 = 9,221



Sue stocked her pond with 263 bass and 187 trout. The turtles ate 97 fish. How many fish are left?

353 fish

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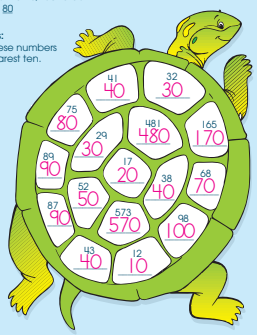
17

18 Rounding: Tens

Rounding a number means expressing it to the nearest ten, hundred, thousand, and so on. Rounding makes estimating sums, differences, and products easier. When rounding to the nearest ten, the key number is in the ones place. If the ones digit is 5 or larger, round up to the nearest ten. If the ones digit is 4 or less, round down to the nearest ten.

Example:
Round 81 to the nearest ten.
- 1 is the key digit.
- If it is less than 5, round down.
- Answer: 80

Directions:
Round these numbers to the nearest ten.



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18

19 Rounding: Hundreds and Thousands

When rounding to the nearest hundred, the key number is in the tens place. If the tens digit is 5 or larger, round up to the nearest hundred. If the tens digit is 4 or less, round down to the nearest hundred.

Examples:

Round 871 to the nearest hundred.
- 7 is the key digit.
- If it is 5 or more, round up.
- Answer: 900

Round 421 to the nearest hundred.
- 2 is the key digit.
- If it is 4 or less, round down.
- Answer: 400

Directions: Round these numbers to the nearest hundred.

255	300	368	400
578	600	562	600
99	100	775	800

When rounding to the nearest thousand, the key number is in the hundreds place. If the hundreds digit is 5 or larger, round up to the nearest thousand. If the hundreds digit is 4 or less, round down to the nearest thousand.

Examples:

Round 7,932 to the nearest thousand.
- 9 is the key digit.
- If it is 5 or more, round up.
- Answer: 8,000

Round 1,368 to the nearest thousand.
- 3 is the key digit.
- If it is 4 or less, round down.
- Answer: 1,000

Directions: Round these numbers to the nearest thousand.

8,631	9,000	1,248	1,000	798	1,000
999	1,000	6,229	6,000	8,461	8,000

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19

20 Rounding

Directions: Round these numbers to the nearest ten.

18	20	33	30	82	80	56	60
24	20	49	50	91	90	67	70

Directions: Round these numbers to the nearest hundred.

243	200	689	700	263	300
162	200	389	400	720	700
351	400	490	500	463	500
846	800	928	900	733	700

Directions: Round these numbers to the nearest thousand.

2,638	3,000	3,940	4,000	8,653	9,000
6,238	6,000	1,429	1,000	5,061	5,000
7,289	7,000	2,742	3,000	9,460	9,000
3,109	3,000	4,697	5,000	8,302	8,000

Directions: Round these numbers to the nearest ten thousand.

11,368	10,000	38,421	40,000
75,302	80,000	67,932	70,000
14,569	10,000	49,926	50,000
93,694	90,000	81,648	80,000
26,784	30,000	87,065	90,000

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20

21 Estimating

To **estimate** means to give an approximate rather than an exact answer. To find an estimated sum or difference, round the numbers of the problem, then add or subtract. If the number has 5 ones or more, round up to the nearest ten. If the number has 4 ones or less, round down to the nearest ten.

Directions: Round the numbers to the nearest ten, hundred, or thousand. Then, add or subtract.

Examples:

Ten	Hundred	Thousand
74 → 70 + 39 → + 40 110	352 → 400 − 164 → − 200 200	7,681 → 8,000 + 4,321 → + 4,000 12,000

Round these numbers to the nearest ten.

18 → 20 + 24 → + 20 40	49 → 50 − 33 → − 30 20	67 → 70 − 56 → − 60 10

Round these numbers to the nearest hundred.

255 → 300 − 99 → − 100 200	526 → 500 + 145 → + 100 600	102 → 100 − 75 → − 100 0

Round these numbers to the nearest thousand.

8,361 → 8,000 + 889 → + 1,000 9,000	9,926 → 10,000 + 3,645 → + 4,000 14,000

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21

Answer Key

22 Estimating

Estimating is used for certain mathematical calculations. For example, to figure the cost of several items, round their prices to the nearest dollar, then add up the approximate cost. A store clerk, on the other hand, needs to know the exact prices in order to charge the correct amount.

Directions: In the following situations, write whether an exact or estimated answer should be used.

Example:
You make a deposit in your bank account. Do you want an estimated total or an exact total? Exact

1. Your family just ate dinner at a restaurant. Your parents are trying to calculate the tip for your server. Should they estimate by rounding or use exact numbers? Estimate
2. You are at the store buying a book, and you want to know if you have enough money to pay for it. Should you estimate or use exact numbers? Estimate
3. Some friends are planning a trip from New York City to Washington, D.C. They need to know about how far they will travel in miles. Should they estimate or use exact numbers? Estimate
4. You plan a trip to the zoo. Beforehand, you call the zoo for the price of admission. Should the person at the zoo tell you an estimated or exact price? Exact

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22

23 Estimating

Directions: Round the numbers to the nearest hundred. Then, solve the problems.

Example:
Jack and Alex were playing a computer game. Jack scored 428 points. Alex scored 132. About how many more points did Jack score than Alex?

Round Jack's 428 points down to the nearest hundred, 400.

Round Alex's 132 points down to 100.

Subtract.

400
− 100
300

estimate

258 + 117 = 375 → 300 + 100 = 400	493 + 114 → 500 + 100 = 600	837 − 252 → 800 − 300 = 500
928 − 437 → 900 − 400 = 500	700 − 491 → 700 − 500 = 200	319 + 630 → 300 + 600 = 900
332 + 567 → 300 + 600 = 900	493 − 162 → 500 − 200 = 300	1,356 + 2,941 → 1,400 + 2,900 = 4,300

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23

24 Estimating

Directions: Follow the steps to estimate the time it will take to read a book.

Step 1: Write down the number of pages in the book you want to read. _____

Step 2: Pick a page that is of average length. Time yourself to see how long it takes you to read the page. Answers will vary. _____

Step 3: Suppose it took you 4 minutes to read the page. How many minutes will it take to read the book? _____

Step 4: Estimate the number of minutes it will take to read the book by rounding up to the nearest hundred. _____

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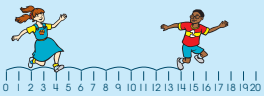
24

25 Skip Counting

Skip counting is a quick way to count by skipping numbers. For example, when you skip count by twos, you count 2, 4, 6, 8, and so on. You can skip count by many different numbers such as twos, fours, fives, tens, and hundreds.

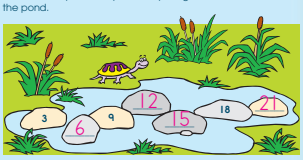
The illustration below shows skip counting to 14.



Directions: Use the number line to help you skip count by twos from 0 to 20.

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Directions: Skip count by threes by filling in the rocks across the pond.



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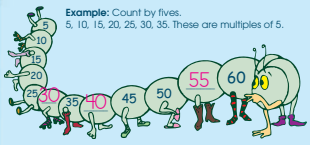
25

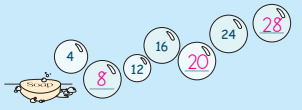
26 Multiples

A multiple is the product of a specific number and any other number. For example, the multiples of 2 are 2 (2 x 1), 4 (2 x 2), 6, 8, 10, 12, and so on.

Directions: Write the missing multiples.

Example: Count by fives.
5, 10, 15, 20, 25, 30, 35. These are multiples of 5.





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26

27 Review

Directions: Add or subtract using regrouping.

67 + 93 + 48 = 208	5,029 − 3,068 = 1,961	732 + 801 + 18 = 1,551	2,467 + 3,184 = 5,651	8,453 − 6,087 = 2,366

Directions: Write the numbers in the boxes. In the blanks, write the numbers in standard form.

eight millions, four hundred thousands, zero ten thousands, zero thousands, nine hundreds, five tens, two ones

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	4	0	0	9	5	2

8,400,952

five hundred thousands, three ten thousands, five thousands, zero hundreds, four tens, one one

hundred thousands	ten thousands	thousands	hundreds	tens	ones
5	3	5	0	4	1

535,041

Directions: Write the missing multiples in the blanks.

6, 12, 18, 24, 30, 36

3, 6, 9, 12, 15

4, 8, 12, 16, 20, 24

5, 10, 15, 20, 25

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27

Answer Key

28 Multiplication

Multiplication is a short way to find the sum of adding the same number a certain amount of times, such as 7 x 4 = 28 instead of 7 + 7 + 7 + 7 = 28.

Directions: Multiply as quickly as you can.

4 x 7 = 28	7 x 6 = 42	0 x 8 = 0	7 x 2 = 14	9 x 5 = 45	1 x 5 = 5
8 x 3 = 24	7 x 1 = 7	4 x 2 = 8	9 x 6 = 54	8 x 5 = 40	6 x 7 = 42
3 x 5 = 15	7 x 8 = 56	3 x 9 = 27	5 x 6 = 30	9 x 9 = 81	7 x 5 = 35
			3 x 6 = 18	2 x 8 = 16	8 x 6 = 48
			0 x 7 = 0		3 x 3 = 9

How quickly did you complete this page? Answers will vary.

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28

29 Fact Factory

Factors are the numbers multiplied together in a multiplication problem. The **product** is the answer.

Directions: Write the missing factors or products.

x	5
1	5
5	25
4	20
6	30
3	15
2	10
7	35
9	45

x	9
8	72
3	27
4	36
9	81
6	54
7	63
2	18
1	9

x	7
2	14
5	35
6	42
8	56
7	49
4	28
3	21
0	0

x	3
7	21
4	12
6	18
1	3
3	9
2	6
5	15
8	24

x	1
1	1
12	12
10	10
3	3
5	5
7	7
6	6
4	4

x	8
9	72
8	64
4	32
5	40
6	48
7	56
3	24
2	16

x	2
12	24
1	2
11	22
2	4
10	20
3	6
9	18
4	8

x	4
2	8
4	16
6	24
8	32
1	4
3	12
5	20
7	28

x	6
7	42
6	36
5	30
4	24
3	18
2	12
1	6
0	0

x	10
2	20
3	30
4	40
5	50
6	60
7	70
8	80
9	90

x	11
4	44
7	77
9	99
10	110
3	33
5	55
6	66
8	88

x	12
1	12
2	24
3	36
4	48
5	60
6	72
7	84
8	96

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29

30 Multiplication: Tens, Hundreds, Thousands

When multiplying a number by 10, the answer is the number with a 0. It is like counting by tens.

Examples:

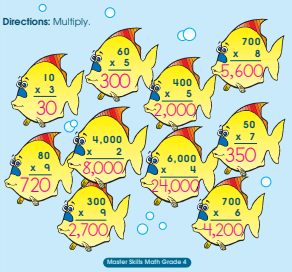
10 x 1 = 10	10 x 2 = 20	10 x 3 = 30	10 x 4 = 40	10 x 5 = 50	10 x 6 = 60

When multiplying a number by 100, the answer is the number with two 0's. When multiplying by 1,000, the answer is the number with three 0's.

Examples:

100 x 1 = 100	100 x 2 = 200	100 x 3 = 300	1,000 x 1 = 1,000	1,000 x 2 = 2,000	1,000 x 3 = 3,000

Directions: Multiply.



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30

31 Multiplication: One-Digit Numbers Times Two-Digit Numbers

Follow the steps for multiplying a one-digit number by a two-digit number using regrouping.

Example: Step 1: Multiply the ones. Regroup. $\begin{array}{r} {\scriptstyle 2}\,54 \\ \times\ 7 \\ \hline 8 \end{array}$

Step 2: Multiply the tens. Add two tens. $\begin{array}{r} {\scriptstyle 2}\,54 \\ \times\ 7 \\ \hline 378 \end{array}$

Directions: Multiply.

27 x 3 = 81	63 x 4 = 252	52 x 5 = 260	91 x 9 = 819	45 x 7 = 315
64 x 5 = 320	76 x 3 = 228	93 x 6 = 558	87 x 4 = 348	66 x 7 = 462
47 x 8 = 376	64 x 9 = 576	51 x 8 = 408		
13 x 7 = 91	32 x 4 = 128	25 x 8 = 200		

The chickens on the Smith farm produce 48 dozen eggs each day. How many dozen eggs do they produce in 7 days? 336 eggs

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31

32 Multiplication: Two-Digit Numbers Times Two-Digit Numbers

Follow the steps for multiplying a two-digit number by a two-digit number using regrouping.

Example: Step 1: Multiply the ones. Regroup. $\begin{array}{r} 63 \\ \times\ 68 \\ \hline \end{array}$ $\begin{array}{r} {\scriptstyle 2}\,63 \\ \times\ 68 \\ \hline 504 \end{array}$

Step 2: Multiply the tens. Regroup. Add. $\begin{array}{r} {\scriptstyle 1}\,63 \\ \times\ 68 \\ \hline 3,780 \end{array}$ $\begin{array}{r} 63 \\ \times\ 68 \\ \hline 504 \\ +\ 3,780 \\ \hline 4,284 \end{array}$

Hint: When multiplying by the tens, start writing the number in the tens place. Use a zero as a placeholder in the ones place.

Directions: Multiply.

12 x 55 = 660	27 x 15 = 405	65 x 27 = 1,755	19 x 39 = 741	99 x 13 = 1,287
43 x 26 = 1,118	38 x 17 = 646	53 x 86 = 4,558	47 x 72 = 3,384	57 x 62 = 3,534

The Jones farm has 24 cows that each produce 52 quarts of milk a day. How many quarts are produced each day altogether? 1,248 quarts

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32

33 Multiplication: Two-Digit Numbers Times Three-Digit Numbers

Follow the steps for multiplying a two-digit number by a three-digit number using regrouping.

Example: Step 1: Multiply the ones. Regroup. $\begin{array}{r} 287 \\ \times\ 43 \\ \hline \end{array}$ $\begin{array}{r} {\scriptstyle 23}\,287 \\ \times\ 43 \\ \hline 861 \end{array}$

Step 2: Multiply the tens. Regroup. Add. $\begin{array}{r} {\scriptstyle 23}\,287 \\ \times\ 43 \\ \hline 11,480 \end{array}$ $\begin{array}{r} 287 \\ \times\ 43 \\ \hline 861 \\ +\ 11,480 \\ \hline 12,341 \end{array}$

Directions: Multiply.

At the Douglas berry farm, workers pick 378 baskets of peaches each day. Each basket holds 65 peaches. How many peaches are picked each day? 24,570 peaches

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33

Answer Key

34

Multiplication: Two-Digit Numbers Times Two- and Three-Digit Numbers

Directions: Multiply.

25 x 72 = 1,800	70 x 66 = 4,620	844 x 24 = 20,256	124 x 15 = 1,860
45 x 41 = 1,845	76 x 78 = 5,928	74 x 69 = 5,106	
261 x 88 = 22,968	48 x 36 = 1,728	263 x 57 = 14,991	
37 x 64 = 2,368	52 x 43 = 2,236	321 x 78 = 25,038	
544 x 58 = 31,552	797 x 24 = 19,128	998 x 37 = 36,926	

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35

Multiplication: Two-Digit Numbers Times Three-Digit Numbers

Directions: Multiply. Regroup when needed.

Example:

563
x 248
4,504
22,520
+ 112,600
139,624

Hint: When multiplying by the tens, start writing the number in the tens place. When multiplying by the hundreds, start in the hundreds place.

842 x 167 = 140,614	932 x 272 = 253,504	759 x 468 = 355,212	531 x 556 = 295,236
383 x 476 = 182,308	523 x 349 = 182,527	229 x 189 = 43,281	738 x 513 = 378,594

James grows pumpkins on his farm. He has 362 rows of pumpkins. There are 593 pumpkins in each row. How many pumpkins does James grow? 214,666 pumpkins

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35

36

Multiplication Practice

Directions: Multiply. Use the code to color the quilt.

70,725 — red
249,738 — orange
667 — green
34,088 — blue
448 — white
221,446 — yellow

29 x 23 = 667	4,261 x 8 = 34,088	224 x 2 = 448
112 x 4 = 448	56 x 8 = 448	642 x 389 = 249,738
943 x 75 = 70,725	842 x 263 = 221,446	448 x 1 = 448

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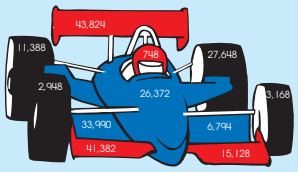
37

Multiplication Drill

Directions: Multiply.

134 x 22 = 2,948	48 x 66 = 3,168	876 x 13 = 11,388	432 x 64 = 27,648
68 x 11 = 748	5,478 x 8 = 43,824	248 x 61 = 15,128	6,897 x 6 = 41,382
82 x 4 = 328	6,798 x 5 = 33,990	79 x 86 = 6,794	694 x 38 = 26,372

Directions: Color the picture by matching each number with its paintbrush.



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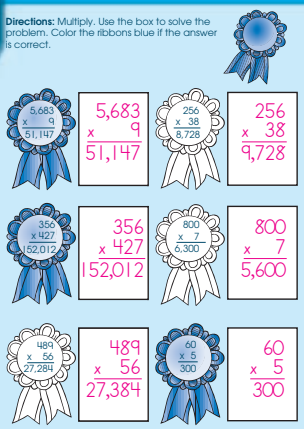
Review

Directions: Multiply. Use the box to solve the problem. Color the ribbons blue if the answer is correct.



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Division

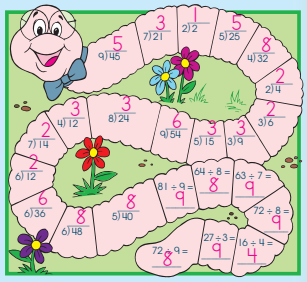
Division is a way to find out how many times one number is contained in another number. For example, 28 ÷ 7 = 4 means that there are 4 groups of 7 in 28.

Division problems can be written two ways: 36 ÷ 6 or $6\overline{)36}$

These are the parts of a division problem:

dividend → 36 ÷ 6 = 6 ← quotient
divisor ↑ ↖ quotient
6 ← quotient
$6\overline{)36}$ ← dividend
divisor ↑

Directions: Divide.



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Answer Key

40 Division With Remainders

Sometimes groups of objects or numbers cannot be divided into equal groups. The **remainder** is the number left over in the quotient of a division problem. The remainder must be smaller than the divisor.

Example:

Divide 18 butterflies into groups of 5. You have 3 equal groups, with 3 butterflies left over.

$18 \div 5 = 3$ R3

or

$5\overline{)18}$ 3 R3, 18, −15, 3

Directions: Divide. Some problems may have remainders.

9 R3 (9|84)	9 R2 (7|65)	3 R1 (8|25)	7 (5|35)	6 R4 (5|34)
6 R1 (4|25)	9 R2 (6|56)	1 R3 (4|7)	4 (4|16)	4 R5 (8|37)
3 R6 (7|27)	2 R1 (2|5)	2 (2|4)	9 R1 (8|73)	2 R1 (4|9)

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41 Division: Larger Numbers

Follow the steps for dividing larger numbers.

Example: $3\overline{)66}$

Step 1: Divide the tens first. 2, 3|66, −6, 06

Step 2: Divide the ones next. 22, 3|66, −6, 06, −6, 0

Directions: Divide.

21 (4|84)	45 (2|90)	32 (2|64)	25 (2|50)	15 (3|45)

In some larger numbers, the divisor goes into the first two digits of the dividend.

Example: 9|729; 8, 9|729, −72, 09; 81, 9|729, −72, 09, −9, 0

Directions: Divide.

90 (7|630)	25 (5|125)	81 (6|486)	20 (5|100)	90 (6|540)

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42 Division

Directions: Divide.

122 R6 (7|860)	101 R5 (6|611)	34 R7 (8|279)	84 R2 (4|338)
163 R1 (6|979)	264 (3|792)	92 R3 (5|463)	156 R4 (6|940)
161 R3 (4|647)	271 R1 (3|814)	108 R2 (7|758)	71 R1 (5|356)

The music store has 491 CDs. The store sells 8 CDs a day. How many days will it take to sell all of the CDs?

61 R3 → 62 days

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43 Division: Checking the Answers

To check a division problem, multiply the quotient by the divisor. Add the remainder. The answer will be the dividend.

Example:

quotient → 58 R1; divisor → 3|175; dividend → −15, 25, −24; remainder → 1

58 ← quotient; × 3 ← divisor; 174; + 1 ← remainder; 175 ← dividend

Directions: Divide each problem, then draw a line from the division problem to the correct checking problem.

33 × 7	53 × 7 + 2	97 × 7 + 3	113 × 7 + 1
97 R3 (7|682)	33 (7|231)	53 R2 (7|373)	113 R1 (7|792)

The toy factory puts 7 robot dogs in each box. The factory has 256 robot dogs. How many boxes will they need?

36 R4 → 37 boxes

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44 Division: Checking the Answers

Directions: Divide, then check your answers.

Example: 182 R1; 4|729, −4, 32, −32, 9, −8, 1 **Check:** 182 × 4 = 728; + 1 = 729

Divide	Check	Divide	Check
13 R13 (35|468, −35, 118, −105, 13)	13 × 35; 65, + 390, 455, + 13, 468	10 R49 (77|819, −77, 49)	10 × 77; 70, + 700, 770, + 49, 819
19 R17 (29|568, −29, 278, −261, 17)	19 × 29; 171, + 380, 551, + 17, 568	52 R39 (53|2,795, −265, 145, −106, 39)	52 × 53; 156, + 2,600, 2756, + 39, 2,795

The bookstore puts 53 books on a shelf. How many shelves will it need for 1,590 books?

30 shelves

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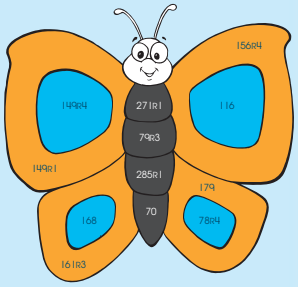
45 Division: One-Digit Divisors

Directions: Solve the problems on another sheet of paper. Use the code to color the picture.

Color	5|895	6|895	6|940	4|647	orange
these	4|672	6|696	5|749	8|628	blue
answers:	3|814	7|490	5|398	2|571	black



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Answer Key

46 Division: Two-Digit Divisors

Directions: Divide. Then, check each answer on another sheet of paper by multiplying it by the divisor and adding the remainder.

Example:

$$\begin{array}{r} 2 \\ 12\overline{)256} \\ -24 \\ \hline 1 \end{array} \qquad \begin{array}{r} 21\text{R}4 \\ 12\overline{)256} \\ -24 \\ \hline 16 \\ -12 \\ \hline 4 \end{array}$$

Check:

$$\begin{array}{r} 21 \\ \times\ 12 \\ \hline 42 \\ 210 \\ \hline 252 \\ +\ \ 4 \\ \hline 256 \end{array}$$

$27\overline{)880}$ 32R16 $81\overline{)913}$ 11R22 $65\overline{)790}$ 12R10 $42\overline{)674}$ 16R2 $67\overline{)823}$ 12R19

$72\overline{)977}$ 13R41 $54\overline{)743}$ 13R41 $45\overline{)863}$ 19R8 $24\overline{)432}$ 18 $18\overline{)372}$ 20R12

$28\overline{)175}$ 6R7 $49\overline{)538}$ 10R48 $77\overline{)936}$ 12R12 $37\overline{)603}$ 16R11 $63\overline{)835}$ 13R16

The Allen farm has 882 chickens. The chickens are kept in 21 coops. How many chickens are there in each coop? 42 chickens

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47 Averaging

An **average** is found by adding two or more quantities and dividing by the number of quantities.

Example:
Step 1: Find the sum of the numbers. 24 + 36 + 30 = 90
Step 2: Divide by the number of quantities. 90 ÷ 3 = 30
The average is 30.

Directions: Find the average of each group of numbers. Draw a line from each problem to the correct average.

12 + 14 + 29 + 1 =	410
33 + 17 + 14 + 20 + 16 =	83
782 + 276 + 172 =	15
81 + 82 + 91 + 78 =	14
14 + 24 + 10 + 31 + 5 + 6 =	20

A baseball player had 3 hits in game one, 2 hits in game two, and 4 hits in game three. How many hits did she average over the three games? 3 hits

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48 Averaging

Directions: Find the averages.

Ted went bowling. He had scores of 112, 124, and 100. What was his average? 112

The baseball team played 6 games. They had 12 hits, 6 hits, 18 hits, 36 hits, 11 hits, and 7 hits. What is the average number of hits in a game?

15 hits

In 3 games of football, Chris gained 156, 268, and 176 yards running. How many yards did he average in a game? 200 yards

Jane scored 18, 15, 26, and 21 points in 4 basketball games. How many points did she average? 20 points

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50 Review

Directions: Divide.

$3\overline{)268}$ 89R1 $15\overline{)165}$ 11

$27\overline{)489}$ 18R3 $48\overline{)695}$ 14R23 $79\overline{)937}$ 11R68 $49\overline{)683}$ 13R46

$91\overline{)848}$ 9R29 $73\overline{)592}$ 8R8 $59\overline{)473}$ 8R1 $23\overline{)1,268}$ 55R3

$67\overline{)2,543}$ 37R64 $81\overline{)3,608}$ 44R44 $37\overline{)8,432}$ 227R33 $97\overline{)4,528}$ 46R66

Directions: Find the averages.

22, 38	30	105, 263, 331	233
248, 325, 250, 69	223	17, 18, 36, 28, 6	21

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52 Fractions

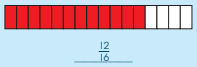
Directions: Name the fraction that is shaded.

Examples:

3 of 4 equal parts are shaded.

$\frac{3}{4}$

12 of 16 equal parts are shaded.



$\frac{12}{16}$

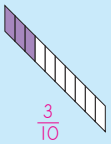
$\frac{1}{3}$

$\frac{4}{6}$

$\frac{4}{8}$

$\frac{5}{12}$

$\frac{4}{5}$



$\frac{3}{10}$

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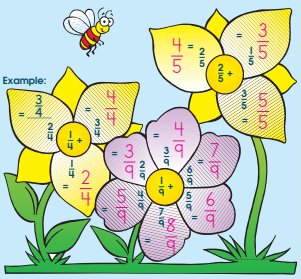
57 Fractions: Addition

When adding fractions with the same denominator, the denominator stays the same. Add only the numerators.

Example: $\frac{\text{numerator}}{\text{denominator}}$ $\frac{1}{8} + \frac{2}{8} = \frac{3}{8}$

Directions: Add the fractions on the flowers. Begin in the center of each flower and add each petal. The first one is done for you.



Example:

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Answer Key

58 Fractions: Subtraction

When subtracting fractions with the same denominator, the denominator stays the same. Subtract only the numerators.

Directions: Solve the problems, working from left to right. As you find each answer, copy the letter from the key into the numbered blanks. The answer is the name of a famous American. The first one is done for you.

T $\frac{1}{8}$	P $\frac{5}{24}$	H $\frac{1}{4}$	F $\frac{4}{12}$	E $\frac{2}{7}$
J $\frac{3}{12}$	E $\frac{3}{4}$	O $\frac{2}{4}$	F $\frac{4}{8}$	R $\frac{7}{16}$
O $\frac{2}{8}$	Y $\frac{8}{20}$	Q $\frac{1}{32}$	M $\frac{1}{3}$	S $\frac{5}{20}$
A $\frac{1}{12}$	R $\frac{12}{15}$	S $\frac{3}{5}$	N $\frac{2}{6}$	O $\frac{11}{15}$

1. $\frac{3}{8} - \frac{2}{8} = \frac{1}{8}$
2. $\frac{2}{4} - \frac{1}{4} = \frac{1}{4}$
3. $\frac{5}{9} - \frac{3}{9} = \frac{2}{9}$
4. $\frac{2}{3} - \frac{1}{3} = \frac{1}{3}$
5. $\frac{8}{12} - \frac{7}{12} = \frac{1}{12}$
6. $\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$
7. $\frac{6}{12} - \frac{3}{12} = \frac{3}{12}$
8. $\frac{4}{9} - \frac{1}{9} = \frac{3}{9}$
9. $\frac{11}{12} - \frac{7}{12} = \frac{4}{12}$
10. $\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$
11. $\frac{4}{7} - \frac{2}{7} = \frac{2}{7}$
12. $\frac{14}{16} - \frac{7}{16} = \frac{7}{16}$
13. $\frac{18}{20} - \frac{13}{20} = \frac{5}{20}$
14. $\frac{13}{15} - \frac{2}{15} = \frac{11}{15}$
15. $\frac{5}{6} - \frac{3}{6} = \frac{2}{6}$

Who helped write the Declaration of Independence?

T h o m a s J e f f e r s o n
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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59 Fractions: Mixed Numbers

A **mixed number** is a number written as a whole number and a fraction, such as $6\frac{5}{8}$.

To change a fraction into a mixed number, divide the denominator (bottom number) into the numerator (top number). Write the remainder over the denominator.

Example: $\frac{14}{6} = 2\frac{2}{6}$

$6\overline{)14}\ R2$, 14, 12, 2

To change a mixed number into a fraction, multiply the denominator by the whole number, add the numerator, and write it on top of the denominator.

Example: $3\frac{1}{7} = \frac{22}{7}$ $(7 \times 3) + 1 = 22$

Directions: Write each fraction as a mixed number. Write each mixed number as a fraction.

$\frac{21}{6} = 3\frac{3}{6}$ $\frac{24}{5} = 4\frac{4}{5}$ $\frac{10}{3} = 3\frac{1}{3}$ $\frac{21}{4} = 5\frac{1}{4}$

$\frac{11}{6} = 1\frac{5}{6}$ $\frac{13}{4} = 3\frac{1}{4}$ $\frac{12}{5} = 2\frac{2}{5}$ $\frac{10}{9} = 1\frac{1}{9}$

$4\frac{3}{8} = \frac{35}{8}$ $2\frac{1}{3} = \frac{7}{3}$ $4\frac{3}{5} = \frac{23}{5}$ $3\frac{4}{6} = \frac{22}{6}$

$7\frac{1}{4} = \frac{29}{4}$ $2\frac{3}{5} = \frac{13}{5}$ $7\frac{1}{2} = \frac{15}{2}$ $6\frac{5}{7} = \frac{47}{7}$

$\frac{23}{7} = 3\frac{2}{7}$ $8\frac{1}{3} = \frac{25}{3}$ $9\frac{3}{7} = \frac{66}{7}$ $\frac{32}{24} = 1\frac{8}{24}$

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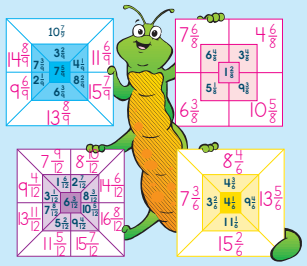
60 Fractions: Adding Mixed Numbers

When adding mixed numbers, add the whole numbers first, then the fractions.

Examples: $9\frac{1}{3} + 3\frac{1}{3} = 12\frac{2}{3}$ $2\frac{3}{6} + 1\frac{1}{6} = 3\frac{4}{6}$

Directions: Add the number in the center to the number in each surrounding section.



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61 Fractions: Subtracting Mixed Numbers

When subtracting mixed numbers, subtract the fractions first, then the whole numbers.

Directions: Subtract the mixed numbers. The first one is done for you.

$7\frac{3}{8}$	$4\frac{5}{6}$	$4\frac{1}{2}$	$7\frac{5}{8}$	$6\frac{6}{8}$	$5\frac{3}{4}$
$-4\frac{2}{8}$	$-3\frac{1}{6}$	-3	$-6\frac{3}{8}$	$-1\frac{1}{8}$	$-1\frac{1}{4}$
$3\frac{1}{8}$	$1\frac{4}{6}$	$1\frac{1}{2}$	$1\frac{2}{8}$	$5\frac{5}{8}$	$4\frac{2}{4}$
$5\frac{2}{3}$	$4\frac{8}{10}$	$9\frac{8}{9}$	$7\frac{2}{3}$	$7\frac{2}{3}$	$9\frac{8}{10}$
$-3\frac{1}{3}$	$-3\frac{3}{10}$	$-4\frac{3}{9}$	$-6\frac{1}{3}$	-5	$-6\frac{3}{10}$
$2\frac{1}{3}$	$1\frac{5}{10}$	$5\frac{5}{9}$	$1\frac{1}{3}$	$2\frac{2}{3}$	$3\frac{5}{10}$

Sally needs $1\frac{3}{8}$ yards of cloth to make a dress. She has $4\frac{5}{8}$ yards. How much cloth will be left over?

$3\frac{2}{8}$ yards

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62 Equivalent Fractions

Equivalent fractions are two different fractions that represent the same number. **Example:** $\frac{1}{2} = \frac{3}{6}$

Directions: Complete these equivalent fractions. Use your fraction pieces from pages 53 and 55.

$\frac{1}{3} = \frac{2}{6}$ $\frac{1}{2} = \frac{2}{4}$ $\frac{3}{4} = \frac{6}{8}$ $\frac{1}{3} = \frac{3}{9}$

Directions: Write the fraction for the shaded area under each figure. Circle the figure that shows a fraction equivalent to figure a.

a. $\frac{2}{4}$ c. $\frac{2}{8}$

b. $\frac{4}{16}$ d. $\frac{4}{8}$

To find an equivalent fraction, multiply both parts of the fraction by the same number.

Example: $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$

Directions: Find an equivalent fraction.

$\frac{1}{4} = \frac{2}{8}$ $\frac{3}{4} = \frac{12}{16}$ $\frac{4}{5} = \frac{8}{10}$ $\frac{3}{8} = \frac{9}{24}$

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63 Reducing Fractions

Reducing a fraction means finding the greatest common factor and divide.

Example: $\frac{5}{15}$ factors of 5: 1, 5; factors of 15: 1, 3, 5, 15

$5 \div 5 = 1$, $15 \div 5 = 3$, $\frac{1}{3}$

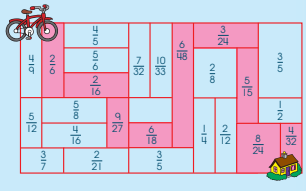
5 is the greatest common factor. Divide both the numerator and denominator by 5.

Directions: Reduce each fraction. Circle the correct answer.

$\frac{2}{4} = (\frac{1}{2}), \frac{1}{6}, \frac{1}{8}$ $\frac{3}{9} = \frac{1}{6}, (\frac{1}{3}), \frac{3}{6}$ $\frac{5}{10} = \frac{1}{5}, (\frac{1}{2}), \frac{5}{6}$

$\frac{4}{12} = \frac{1}{4}, (\frac{1}{3}), \frac{2}{3}$ $\frac{10}{15} = (\frac{2}{3}), \frac{2}{5}, \frac{2}{7}$

Directions: Find the way home. Color the boxes with fractions equivalent to $\frac{1}{8}$ or $\frac{1}{3}$.



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Answer Key

64

Review

Directions: Add or subtract the fractions and mixed numbers.

$4\frac{7}{8} - 2\frac{5}{8} = 2\frac{2}{8} = 2\frac{1}{4}$

$8\frac{3}{9} + 2\frac{5}{9} = 10\frac{8}{9}$

$3\frac{1}{8} + 1\frac{3}{8} = 4\frac{4}{8} = 4\frac{1}{2}$

$4\frac{5}{6} - 3\frac{1}{6} = 1\frac{4}{6} = 1\frac{2}{3}$

$7\frac{5}{11} + 3\frac{3}{11} = 10\frac{8}{11}$

$\frac{4}{12} + \frac{3}{12} = \frac{7}{12}$

$\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$

$\frac{3}{8} - \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$

$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

Directions: Reduce the fractions.

$\frac{4}{6} = \frac{2}{3}$ $\frac{7}{21} = \frac{1}{3}$

$\frac{9}{12} = \frac{3}{4}$ $\frac{2}{4} = \frac{1}{2}$

$\frac{6}{24} = \frac{1}{4}$ $\frac{8}{32} = \frac{1}{4}$

Directions: Change the mixed numbers to fractions and the fractions to mixed numbers.

$3\frac{1}{3} = \frac{10}{3}$

$\frac{14}{4} = 3\frac{2}{4} = 3\frac{1}{2}$

$\frac{26}{6} = 4\frac{2}{6} = 4\frac{1}{3}$

$3\frac{7}{12} = \frac{43}{12}$

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Fractions to Decimals

When a figure is divided into 10 equal parts, the parts are called tenths. Tenths can be written two ways—as a fraction or a decimal. A **decimal** is a number with one or more places to the right of a decimal point, such as 6.5 or 2.25. A **decimal point** is the dot between the ones place and the tenths place.

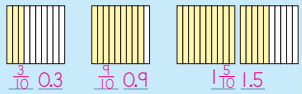
Examples:

ones	tenths
0	3

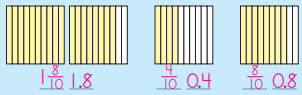
$\frac{3}{10}$ or 0.3 of the square is shaded.

$\frac{6}{10}$ 0.6

Directions: Write the decimal and fraction for the shaded parts of the following figures. The first one is done for you.



$\frac{3}{10}$ 0.3 $\frac{9}{10}$ 0.9 $1\frac{5}{10}$ 1.5



$1\frac{8}{10}$ 1.8 $\frac{4}{10}$ 0.4 $\frac{8}{10}$ 0.8

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Decimals

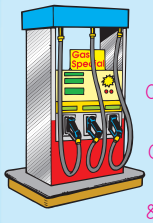
Directions: Add or subtract. Remember to include the decimal point in your answers.

Example:

$1\frac{3}{10} = 1.3$ $1\frac{6}{10} = 1.6$

$$\begin{array}{r} 1.3 \\ +\ 1.6 \\ \hline 2.9 \end{array}$$

8.1 + 1.7 = 9.8	4.1 + 6.2 = 10.3	0.5 + 1.6 = 2.1	7.6 − 6.5 = 1.1	7.2 − 2.6 = 4.6	1.2 + 5.0 = 6.2	8.7 − 3.9 = 4.8



7.8 − 6.8 = 1.0	16.5 − 7.3 = 9.2	6.4 + 5.3 = 11.7
0.42 + 0.35 = 0.77	0.98 − 0.87 = 0.11	0.78 − 0.13 = 0.65
0.95 − 0.14 = 0.81	3.23 + 2.48 = 5.71	4.68 − 2.65 = 2.03
6.98 + 1.40 = 8.38	3.27 + 1.82 = 5.09	4.65 − 1.32 = 3.33

Mr. Martin went on a car trip with his family. Mr. Martin purchased gas 3 times. He bought 6.7 gallons, 7.3 gallons, then 5.8 gallons of gas. How much gas did he purchase in all? 19.8 gallons

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Decimals: Hundredths

The next smallest decimal unit after a tenth is called a hundredth. One hundredth is one unit of a figure divided into 100 units. Written as a decimal, it is one digit to the right of the tenths place.

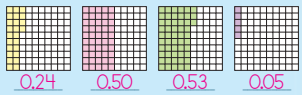
Examples:

One square divided into hundredths, 34 hundredths are shaded. Write: 0.34.

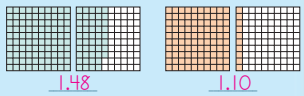
0.34

ones	tenths	hundredths
0	3	4

Directions: Write the decimal for the shaded parts of the following figures.



0.24 0.50 0.53 0.05



1.48 1.10

Master Skills Math Grade 4

67

68

Adding and Subtracting Decimals

Directions: Add or subtract the problems. Then, fill in the circle next to the correct answer.

Example: 2.4 + 1.7 = ○ 2.5 ○ 3.1 ● 4.1

2.8 + 3.4 = 6.2 ○ 5.2 ○ 7.4 ● 6.2	5.7 − 3.8 = 1.9 ● 1.9 ○ 2.5 ○ 2.9	7.6 + 8.9 = 16.5 ○ 15.9 ● 16.5 ○ 17.3
16.3 + 9.8 = 26.1 ○ 25.11 ● 26.1 ○ 26.01	28.6 + 43.9 = 72.5 ○ 73.6 ● 72.5 ○ 71.9	43.9 + 56.5 = 100.4 ● 100.4 ○ 107.4 ○ 101.4
11.57 + 10.64 = 22.21 ● 22.21 ○ 1.93 ○ 21.12	27.83 − 14.94 = 12.89 ○ 14.09 ● 12.89 ○ 11.97	106.935 − 95.824 = 11.111 ○ 111.1 ○ 111.11 ● 11.111

The high-speed train traveled 87.90 miles on day one, 127.86 miles on day two, and 113.41 miles on day three. How many miles did it travel in all? 329.17 miles

Master Skills Math Grade 4

68

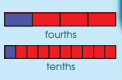
69

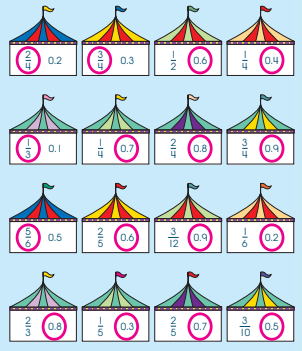
Fractions and Decimals

Directions: Compare the fraction to the decimal in each box. Circle the larger number.

Example:

$\frac{1}{4}$ 0.1





$\frac{2}{4}$ 0.2 $\frac{3}{10}$ 0.3 $\frac{1}{2}$ 0.6 $\frac{1}{4}$ 0.4

$\frac{1}{3}$ 0.1 $\frac{1}{4}$ 0.7 $\frac{2}{4}$ 0.8 $\frac{3}{4}$ 0.9

$\frac{5}{10}$ 0.5 $\frac{2}{5}$ 0.6 $\frac{3}{12}$ 0.9 $\frac{1}{6}$ 0.2

$\frac{2}{3}$ 0.8 $\frac{1}{5}$ 0.3 $\frac{2}{5}$ 0.7 $\frac{3}{10}$ 0.5

Master Skills Math Grade 4

69

Answer Key

70 Identifying Operations

Directions: Write the correct operation sign (+, –, x, ÷) in each circle to correctly complete the problem. The first two are done for you.

5 (x) 6 = 30	0.3 (–) 0.2 = 0.1	128 (–) 56 = 72
4 (x) 8 = 32	$1\frac{2}{5}$ (+) $2\frac{3}{5}$ = $3\frac{5}{5}$	49 (÷) 7 = 7
54 (÷) 6 = 9	$\frac{1}{10}$ (+) $\frac{4}{10}$ = $\frac{5}{10}$	188 (+) 21 = 209
28 (+) 16 = 44	$3\frac{3}{8}$ (–) $2\frac{2}{8}$ = $1\frac{1}{8}$	16 (÷) 4 = 4
63 (÷) 7 = 9	12 (x) 12 = 144	10 (x) 0 = 0
49 (–) 9 = 40	100 (÷) 5 = 20	0.91 (–) 0.81 = 0.1
48 (÷) 12 = 4	98 (–) 43 = 55	0.3 (+) 0.3 = 0.6
39 (–) 19 = 20	0.9 (–) 0.7 = 0.2	0.5 (+) 0.5 = 1.0
72 (÷) 8 = 9	1.68 (–) 0.9 = 0.78	0.97 (+) .50 = 1.47

Master Skills Math Grade 4

70

71 Identifying Operations

Directions: Solve the problems. Circle the letter with the correct answer. Write the letters in order to read the message.

1. 348 – 227 =	121 (M)	425 S
2. 542 x 6 =	5,683 W	3,252 (A)
3. 328 + 593 =	921 (T)	149 N
4. 1,280 ÷ 40 =	92 L	32 (H)
5. 24 x 52 =	2,386 W	1,248 (I)
6. 863 – 438 =	425 (S)	234 U
7. 4,586 + 1,097 =	3,489 Q	5,683 (W)
8. 480 ÷ 4 =	32 H	120 (O)
9. 0.5 + 0.9 =	1.4 (N)	0.14 E
10. 1.6 – 0.9 =	0.7 (D)	0.9 T
11. $3\frac{1}{5}$ + $2\frac{3}{5}$	$5\frac{4}{5}$ (E)	$4\frac{2}{5}$ L
12. $\frac{4}{8}$ – $\frac{1}{4}$	$\frac{3}{8}$ Y	$\frac{1}{11}$ (R)
13. 2,193 – 1,864 =	329 (F)	591 Y
14. 26 x 9 =	234 (U)	744 L
15. 42 ÷ 6 =	8 M	7 (L)

M A T H I S
2 3 4 5 6
W O N D E R F U L
7 8 9 10 11 12 13 14 15

Master Skills Math Grade 4

71

72 Review

Directions: Add or subtract to find the answers.

Bill jumped 28.5 feet. Jim jumped 27.3 feet. How much farther did Bill jump than Jim? 1.2 feet

Sue threw the discus 86.4 feet. Julie threw the discus 93.8 feet. How much farther did Julie throw the discus than Sue? 7.4 feet

Kim, Monica, and Kelly swam on the same team in the butterfly relay race. Their individual times were 32.8 seconds, 29.9 seconds, and 31.7 seconds. The winning team's time was 93.5 seconds. Did Kim, Monica, and Kelly swim the fastest race? yes

Jake's times for the 100-meter dash were 10.1 seconds, 12.5 seconds, and 11.8 seconds. What was his total time? 34.4 seconds

Directions: Decide which sign is correct for each problem: +, –, x, or ÷. Write it in the circle.

5 (x) 5 = 25	100 (÷) 25 = 4	42 (+) 38 = 80
152 (–) 38 = 114	72 (÷) 12 = 6	9 (x) 5 = 45

Directions: Round the numbers, then estimate each answer.

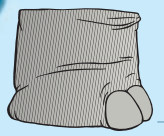
592 → 600 + 312 → + 300 = 900	802 → 800 – 695 → – 700 = 100	499 → 500 – 299 → – 300 = 200	612 → 600 + 499 → + 500 = 1,100

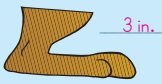
Master Skills Math Grade 4

72

74 Measurement: Inches

Directions: Use a ruler to measure the width of each foot to the nearest inch.





Master Skills Math Grade 4

74

75 Measurement: Fractions of an Inch

An inch is divided into smaller units, or fractions of an inch.

Example: This stick of gum is $2\frac{3}{4}$ inches long.

Directions: Use a ruler to measure each line to the nearest quarter of an inch. The first one is done for you.

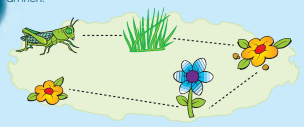
1. $\frac{3}{4}$ inch
2. $1\frac{1}{2}$
3. $2\frac{1}{4}$
4. $4\frac{1}{4}$
5. $3\frac{3}{4}$
6. $1\frac{3}{4}$
7. $3\frac{1}{2}$

Master Skills Math Grade 4

75

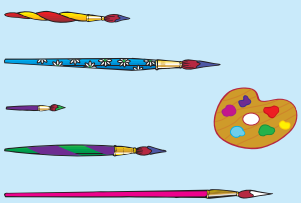
76 Measurement: Fractions of an Inch

Directions: Use a ruler to measure to the nearest quarter of an inch.



How far did the grasshopper jump?

$\frac{3}{4}$ + $1\frac{1}{4}$ + $1\frac{1}{4}$ + $2\frac{1}{4}$ = $5\frac{1}{2}$



What is the total length of the paintbrushes?

$2\frac{1}{2}$ + $4\frac{1}{4}$ + $1\frac{1}{4}$ + $3\frac{1}{4}$ + $5\frac{1}{4}$ = $16\frac{1}{2}$

Master Skills Math Grade 4

76

Answer Key

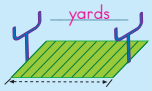
Measurement: Foot, Yard, Mile — 77

Directions: Choose the measure of distance you would use for each object.

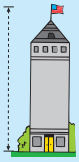
1 foot = 12 inches
1 yard = 3 feet
1 mile = 1,760 yards or 5,280 feet

inches

miles



yards



yards

inches

yards

miles

77

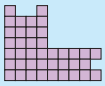
Measurement: Perimeter and Area — 78

Perimeter is the distance around a figure. It is found by adding the lengths of the sides. **Area** is the number of square units needed to cover a region. The area is found by adding the number of square units. A unit can be any unit of measure. Most often, inches, feet, or yards are used.

Directions: Find the perimeter and area for each figure. The first one is done for you.

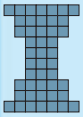
□ = 1 square unit

Perimeter = 18 units
Area = 17 sq. units

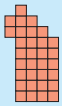


Perimeter = 36 units
Area = 40 sq. units

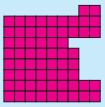
Perimeter = 24 units
Area = 14 sq. units



Perimeter = 42 units
Area = 46 sq. units



Perimeter = 28 units
Area = 32 sq. units



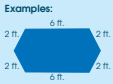
Perimeter = 42 units
Area = 65 sq. units

78

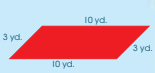
Measurement: Perimeter — 79

Perimeter is calculated by adding the lengths of the sides of a figure.

Examples:



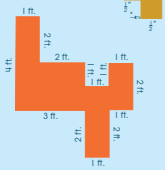
2 + 2 + 2 + 2 + 6 + 6 = 20
The perimeter of this hexagon is 20 ft.



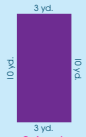
10 + 10 + 3 + 3 = 26
The perimeter of this parallelogram is 26 yd.

Directions: Find the perimeter of the following figures.

8 in.
Perimeter



24 ft.
Perimeter



26 yd.
Perimeter

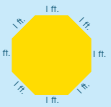
79

Measurement: Perimeter and Area — 80

Directions: Calculate the perimeter of each figure.

12 ft.

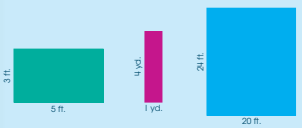
5 in.



8 ft.

Area is also calculated by multiplying the length times the width of a square or rectangular figure. Use the formula: A = l x w.

Directions: Calculate the area of each figure.



15 square ft. 4 square yd. 480 square ft.

80

Measurement: Volume — 81

Volume is the number of cubic units that fit inside a figure.

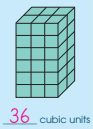
Directions: Find the volume of each figure. The first one is done for you.

4 cubic units

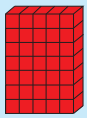
20 cubic units

5 cubic units

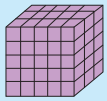
30 cubic units



36 cubic units



35 cubic units



75 cubic units

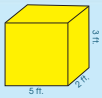
16 cubic units

81

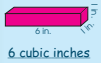
Measurement: Volume — 82

The volume of a figure can also be calculated by multiplying the length times the width times the height. Use the formula: l x w x h.

Example:
3 x 5 x 2 = 30 cubic feet

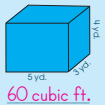


Directions: Find the volume of the following figures. Label your answers in feet, inches, or yards. The first one is done for you.

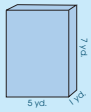


6 cubic inches

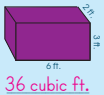
20 cubic ft.



60 cubic ft.



35 cubic ft.



36 cubic ft.

82

Answer Key

Measurement: Liquid

83

The **cup**, **pint**, **quart**, and **gallon**, are units in the standard system for measuring liquids.

Directions: Gather the following materials: 2 dish tubs, one filled with water, sand, or rice; measuring cups; pint container; quart container; gallon container. Then, answer the questions and complete the chart.

1. Use the cup measure to pour water, sand, or rice into the pint container. How many cups did it take?
   2 cups = 1 pint
2. Use the cup measure to find out how many cups are in a quart and a gallon.
   4 cups = 1 quart
   16 cups = 1 gallon
3. Use the pint container to pour water, sand, or rice into the quart container. How many pints are in a quart?
   2 pints = 1 quart
4. How many pints does it take to fill a gallon?
   8 pints = 1 gallon
5. Use the quart measure to find out how many quarts are in a gallon.
   4 quarts = 1 gallon

Measurement Chart

2 cups = 1 pint	2 pints = 1 quart
4 cups = 1 quart	8 pints = 1 gallon
16 cups = 1 gallon	4 quarts = 1 gallon

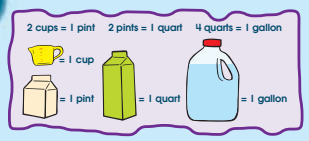
Master Skills Math Grade 4

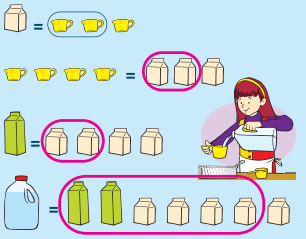
83

Measurement: Cup, Pint, Quart, Gallon

84

Directions: Circle the number of objects to the right that equal the objects on the left. The first one is done for you.





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84

Measurement: Ounce, Pound, Ton

85

The **ounce**, **pound**, and **ton** are units in the standard system for measuring weight.

16 ounces = 1 pound 2,000 pounds = 1 ton

Directions: Choose the measure of weight you would use for each object.

Example:  ounces

 tons/pounds

 pounds

 ounces

 ounces/pounds

 tons

 tons

pounds

Master Skills Math Grade 4

85

Review

86

Directions: Find the perimeter and area of each figure.

Perimeter = 20 units
Area = 19 sq. units

Perimeter = 24 units
Area = 14 sq. units

Directions: How much does it equal?

= 2 pints = 3 pints

Directions: Write whether you would use ounce, pound, or ton to weigh the following.

ounces ton pound

Directions: Write whether you would use an inch, foot, yard, or mile to measure the following.

inch foot/yard yard

Master Skills Math Grade 4

86

Metric Measurement: Centimeter, Meter, Kilometer

87

In the metric system, there are three units of linear measurement: centimeter (cm), meter (m), and kilometer (km).

Centimeters (cm) are used to measure the lengths of small to medium-sized objects. **Meters (m)** measure the lengths of longer objects, such as the width of a swimming pool or height of a tree (100 cm = 1 meter). **Kilometers (km)** measure long distances, such as the distance from Cleveland to Cincinnati or the width of the Atlantic Ocean (1,000 m = 1 km).

Directions: Write whether you would use cm, m, or km to measure each object.

 cm

 m

 cm

 m

km

 cm

 m

 m

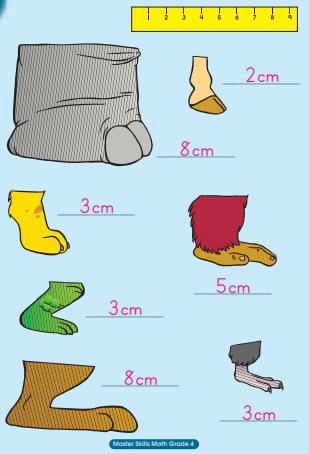
Master Skills Math Grade 4

87

Metric Measurement: Centimeter

88

Directions: Use a centimeter ruler to measure the width of each foot to the nearest centimeter.



Master Skills Math Grade 4

88

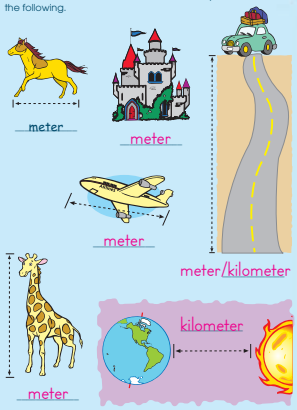
Answer Key

Metric Measurement: Meter and Kilometer

89

A meter is a little longer than a yard—39.37 inches (a yard is 36 inches). A kilometer is equal to about $\frac{6}{10}$ of a mile.

Directions: Choose the measure of distance you would use for the following.

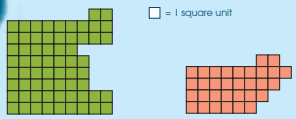


89

Metric Measurement: Perimeter, Area, Volume

90

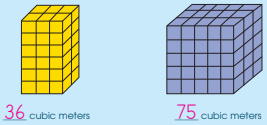
Directions: Find the perimeter and area of each figure.



Perimeter = 42 units
Area = 65 sq. units

Perimeter = 28 units
Area = 32 sq. units

Directions: Find the volume of each figure.



36 cubic meters

75 cubic meters

30 cubic meters

5 cubic meters

90

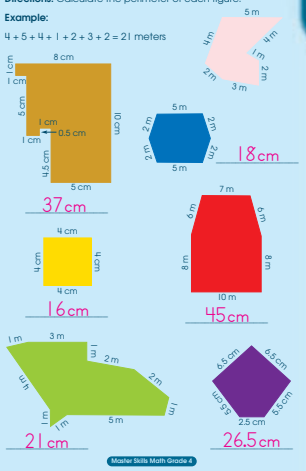
Metric Measurement: Perimeter

91

Directions: Calculate the perimeter of each figure.

Example:

4 + 5 + 4 + 1 + 2 + 3 + 2 = 21 meters



37 cm

18 cm

16 cm

45 cm

21 cm

26.5 cm

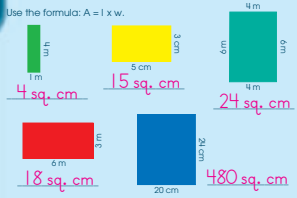
91

Metric Measurement: Area and Volume

92

Directions: Calculate the area of each figure.

Use the formula: A = l x w.



4 sq. cm

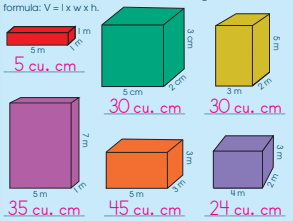
15 sq. cm

24 sq. cm

18 sq. cm

480 sq. cm

Directions: Calculate the volume of each figure. Use the formula: V = l x w x h.



5 cu. cm

30 cu. cm

30 cu. cm

35 cu. cm

45 cu. cm

24 cu. cm

92

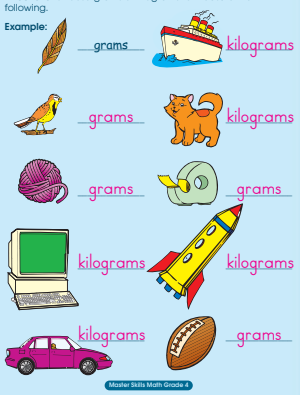
Metric Measurement: Gram and Kilogram

93

Grams and **kilograms** are measurements of weight in the metric system. A gram (g) weighs about $\frac{1}{28}$ of an ounce. A grape or paper clip weighs about one gram. There are 1,000 grams in a kilogram. A kilogram (kg) weighs about 2.2 pounds. A brick weighs about 1 kilogram.

Directions: Choose grams or kilograms to measure the following.

Example:



grams
kilograms
grams
kilograms
grams
grams
kilograms
kilograms
kilograms
grams

93

Metric Measurement: Milliliter and Liter

94

Liters and **milliliters** are measurements of liquid in the metric system. A milliliter (mL) equals 0.001 liter or 0.03 fluid ounces. A drop of water equals about 1 milliliter. Liters (L) measure large amounts of liquid. There are 1,000 milliliters in a liter. One liter measures 1.06 quarts. Soft drinks are often sold in 1-liter bottles.

Directions: Choose milliliters or liters to measure these liquids.

Example:

milliliters
milliliters
liters
milliliters
milliliters
liters
liters
liters

94

Answer Key

Metric Measurement: Weight and Liquid

95

Directions: Choose grams (g) or kilograms (kg) to weigh the following objects. The first one is done for you.

rhinoceros	kg	person	kg
dime	g	airplane	kg
bucket of wet sand	kg	spider	g
eyeglasses	g	pair of scissors	g
toy train engine	g	horse	kg

Directions: Choose milliliters (mL) or liters (L) to measure the liquids in the following containers. The first one is done for you.

swimming pool	L	baby bottle	mL
small juice glass	mL	teapot	mL
gasoline tank	L	outdoor fountain	L
test tube	mL	ink pen	mL
washing machine	L	Lake Erie	L

95

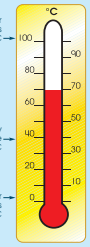
Temperature: Celsius

96

Temperature measures how hot or cold something is. **Celsius** is used to measure temperature in the metric system. **°C** stands for degrees Celsius.

Directions: Use the thermometer to answer these questions.

At what temperature does water boil?	100°C
At what temperature does water freeze?	0°C
What is normal body temperature?	37°C
Is it a hot or cold day when the temperature is 42°C?	hot
Is it a hot or cold day when the temperature is 5°C?	cold
Which temperature best describes a hot summer day? 5°C 40°C 20°C	40°C
Which temperature best describes an icy winter day? 0°C 15°C 10°C	0°C



96

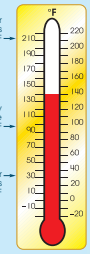
Temperature: Fahrenheit

97

Fahrenheit is used to measure temperature in the standard system. **°F** stands for degrees Fahrenheit.

Directions: Use the thermometer to answer these questions.

At what temperature does water boil?	212°F
At what temperature does water freeze?	32°F
What is normal body temperature?	98.6°F
Is a 100°F day warm, hot, or cold?	hot
Is a 0°F day warm, hot, or cold?	cold
Which temperature best describes room temperature? 58°F 70°F 80°F	70°F
Which temperature best describes a cold winter day? 22°F 38°F 32°F	22°F



97

Review

98

Directions: Choose centimeters, meters, or kilometers to measure the following.

meters	height of a tree	centimeters	length of a shoe
kilometers	distance around Earth	meters	height of a building
meters	length of your yard	kilometers	distance a plane flies

Directions: Choose grams or kilograms to measure the following.


grams


kilograms

grams


kilograms

Directions: Choose liters or milliliters to measure the following.


milliliters


milliliters


liters

liters

98

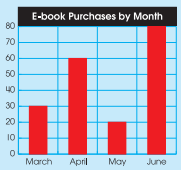
Graphing

99

A **graph** is a drawing that shows information about changes in numbers.

Directions: Answer the questions by reading the graphs.

Bar Graph

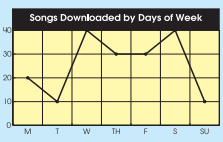


How many e-books were purchased in June?
80

In which month were the fewest e-books purchased?
May

How many e-books were sold for all 4 months?
190 e-books

Line Graph



On which days were the fewest songs downloaded?
Tuesday and Sunday

How many songs were downloaded in 1 week?
180 songs

99

Ordered Pairs

100

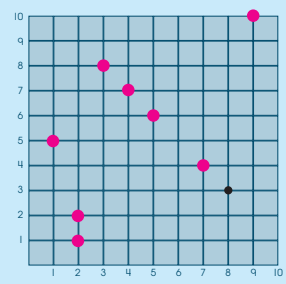
An **ordered pair** is a pair of numbers used to locate a point.

Example: (8, 3)

Step 1: Count across to line 8 on the graph.
Step 2: Count up to line 3 on the graph.
Step 3: Draw a dot to mark the spot.

Directions: Map the following spots on the grid using ordered pairs.

(4, 7) (9, 10) (2, 1) (5, 6) (2, 2) (1, 5) (7, 4) (3, 8)



100

Answer Key

Graphing: Finding Ordered Pairs — 101

Graphs or grids are sometimes used to find the location of objects.

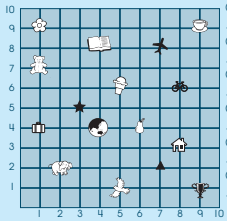
Example: The ice-cream cone is located at point (5, 6) on the graph. To find the ice cream's location, follow the line to the bottom of the grid to get the first number—5. Then, go back to the ice cream and follow the grid line to the left for the second number—6.

Directions: Write the ordered pair for the following objects. The first one is done for you.

book (4, 8) bike (8,6) suitcase (1,4)

house (8,3) globe (4,4) cup (9,9)

Directions: Identify the objects located at the following points. The first one is done for you.



(9, 1) trophy
(3, 5) star
(2, 2) elephant
(6, 4) pear
(1, 9) flower
(5, 1) bird

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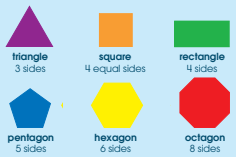
101

Geometry: Polygons — 102

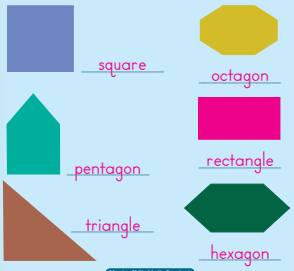
A **polygon** is a closed figure with three or more sides.

Examples:



triangle 3 sides
square 4 equal sides
rectangle 4 sides
pentagon 5 sides
hexagon 6 sides
octagon 8 sides

Directions: Identify the polygons.



square
octagon
pentagon
rectangle
triangle
hexagon

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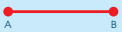
102

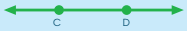
Geometry: Line, Ray, Segment — 103

A **line segment** has two end points.



Write: $\overline{AB}$

A **line** has no end points and goes on in both directions.

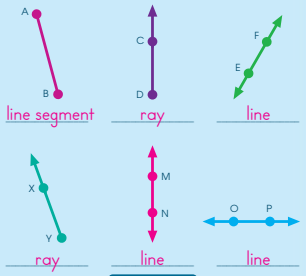


Write: $\overleftrightarrow{CD}$

A **ray** is part of a line and goes on in one direction. It has one end point.

Write: $\overrightarrow{EF}$

Directions: Identify each of the following as a line, line segment, or ray.



line segment
ray
line
ray
line
line

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103

Geometry: Angles — 104

The point at which two line segments meet is called an **angle**. There are three types of angles—right, acute, and obtuse.

A **right angle** is formed when the two lines meet at 90°.

An **acute angle** is formed when the two lines meet at less than 90°.

An **obtuse angle** is formed when the two lines meet at greater than 90°.

Angles can be measured with a protractor or index card. With a protractor, align the bottom edge of the angle with the bottom of the protractor, with the angle point at the circle of the protractor. Note the direction of the other ray and the number of degrees of the angle.

right acute obtuse

Place the corner of an index card in the corner of the angle. If the edges line up with the card, it is a right angle. If not, the angle is acute or obtuse.

right acute obtuse

Directions: Use a protractor or index card to identify the following angles as right, obtuse, or acute.

acute
right
obtuse

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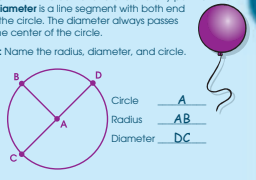
104

Geometry: Circles — 105

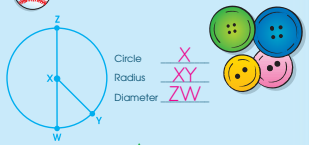
A **circle** is a round figure. It is named by its center. A **radius** is a line segment from the center of a circle to any point on the circle. A **diameter** is a line segment with both end points on the circle. The diameter always passes through the center of the circle.

Directions: Name the radius, diameter, and circle.

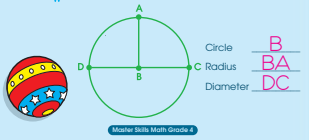
Example:



Circle A
Radius AB
Diameter DC



Circle X
Radius XY
Diameter ZW



Circle B
Radius BA
Diameter DC

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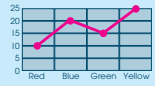
105

Review — 106

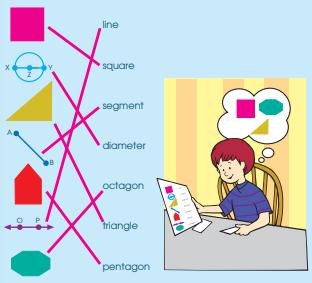
Directions: Complete the graph using the information in the box.

Team	Games Played
Red	10
Blue	20
Green	15
Yellow	25



Red Blue Green Yellow

Directions: Draw a line from the figure to its name.



line
square
segment
diameter
octagon
triangle
pentagon

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106

Teaching Suggestions

Addition and Subtraction

Help your child practice basic facts with flash cards.

Play addition and subtraction games at the grocery store by adding and subtracting prices. Tally the total number of items to be purchased. Place a few extra items in the cart and subtract them.

When adding or subtracting larger numbers, provide your child with counting sticks or another type of manipulative. When your child "carries" and "borrows" with concrete materials, he or she will better understand the operations involved.

Averaging

With your child, brainstorm daily situations in which you use averaging: the cost of groceries for a month, the cost of lunches for a week, the amount of gas used in the car for a month, and so on.

Decimals

Using the sports section of the newspaper, help your child locate times from swim meets, track meets, auto races, and so on. Point out that the times are in tenths and hundredths of seconds. Have your child practice adding and subtracting the times of sporting events.

Division

Practice division facts in tandem with multiplication facts. Show your child how multiplication and division facts can be grouped into "fact families."

Examples: $7 \times 9 = 63$ $9 \times 7 = 63$ $63 \div 7 = 9$ $63 \div 9 = 7$
$6 \times 5 = 30$ $5 \times 6 = 30$ $30 \div 6 = 5$ $30 \div 5 = 6$

Give your child three numbers such as **7**, **8**, and **56**, and ask him or her to name the fact family. Have your child practice with other number groups.

Drill division facts with flash cards and oral quizzes. Point out division applications in real-life situations. If mastery of facts is still a problem, have your child use counting sticks to divide large groups into smaller groups of equal size. This activity is also helpful when introducing division with remainders: $73 \div 8 = 9 \text{ R } 1$. Do not go on to more difficult division problems until your child has mastered the basics.

Estimating

Use the following situations to reinforce estimating with your child:

- Round off the price of several grocery items and estimate the total cost.

Teaching Suggestions

- Round the total cost at a restaurant and calculate the tip.
- Estimate the number of miles between home and school or other destinations.
- Use a pizza carry-out menu to estimate the costs of pizzas with various toppings.

Fractions

Use foods such as pizza, cake, pie, and brownies to help your child identify halves, fourths, thirds, and so on. Review identification of numerators and denominators. With the foods listed above, practice adding and subtracting like fractions. **Example:** If Sally takes $\frac{1}{6}$ of the pie and Jane takes $\frac{2}{6}$ of the pie, how much of the pie is gone? How much of the pie is left over?

Geometry

Look for shapes in everyday objects. Point out the differences in perpendicular, parallel, and intersecting lines. Show your child that parallel lines are like railroad tracks; perpendicular lines are in room corners; intersecting lines are at some street corners.

Have fun using a compass and protractor to draw circles and designs. Show your child that you set your compass measure for one-half of the size of the desired circle. The compass needs to be set at the radius measure.

Graphing

Show your child that graphing has many practical applications in daily life. Use the business section of the newspaper to practice reading graphs. Have your child identify whether the graph is a line graph, bar graph, or pictograph. Help your child graph: weather for a month; food eaten for a week; favorite books of friends; books read over a specific period of time; favorite colors, music, sports, games; and so on.

Measurement

Help your child see that you use measurement on a daily basis. You measure ingredients for recipes, mileage to and from work and school, and so on. Allow your child to help measure whenever possible. Have him or her find the area and/or volume of his or her room. Send your child on a "measuring safari" equipped with a ruler and a list of objects to measure. Have him or her assist in cooking by measuring ingredients.

Note: Do not make comparisons of standard and metric measures. This will only confuse your child. Standard/metric conversions can be learned at a later time.

Teaching Suggestions

Multiplication

The key to success in multiplication is the mastery of single-digit multiplication facts from 0 to 12. Help your child practice these facts with multiplication flash cards, bingo games, homemade activity sheets, and timed tests. Play multiplication games with number cubes, dice, or spinners. Have your child roll the dice and multiply the two numbers rolled or spun.

Make up multiplication story problems. **Example:** You make 9 cupcakes. On each cupcake you want to place 5 pieces of candy. How many pieces will you need in all?

Place Value

To enhance your child's understanding of place value, have him or her practice counting and grouping craft sticks or toothpicks into bundles of tens, hundreds, and thousands. Have your child manipulate these groupings on a place value chart to make various numbers. After making numbers with manipulatives, your child can write the numbers on the chart.

Rounding

To help build your child's understanding of rounding numbers, make several number lines on adding-machine tape. Number each as follows:

- from 0 to 100, counting by tens (for rounding to the nearest ten).
- from 100 to 1,000, counting by hundreds (for rounding to the nearest hundred).
- from 1,000 to 10,000, counting by thousands (for rounding to the nearest thousand).
- from 10,000 to 100,000, counting by ten thousands (for rounding to the nearest ten thousand).

Skip Counting

To help your child practice skip counting, make a large number line on sheets of construction paper, using one sheet per number. Number the sheets from 0 to 100. As your child practices skip counting, he or she can literally "skip" from one number to the next. The physical movement of skip counting will enhance your child's understanding of this concept.