

Sharing Equally

Use drawings to help you solve the problems. Solve each problem in more than one way. Show your work.



- ① Four friends shared 5 pizzas equally. How much pizza did each friend get?

_____ pizzas

One way:

Another way:

- ② Five kittens are sharing 6 cups of milk equally. How much milk does each kitten get?

_____ cups of milk

One way:

Another way:

Practice

- ③ Name the next 4 multiples of 7. 7, _____, _____, _____, _____

- ④ List all the factors of 18. _____

- ⑤ List all the factors of 18 that are prime. _____

- ⑥ List all the factor pairs of 40.

_____ and _____ ; _____ and _____ ;

_____ and _____ ; _____ and _____

Fraction Circles

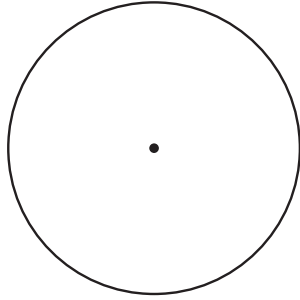
Home Link 3-2

NAME _____

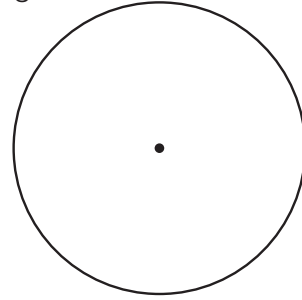
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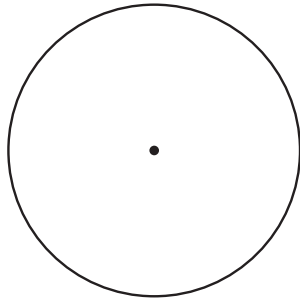
- ① Divide into 4 equal parts. Shade $\frac{1}{4}$.



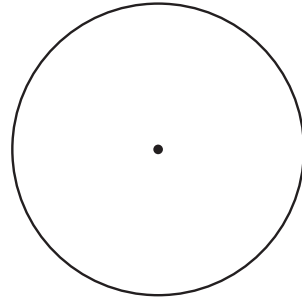
- ② Divide into 8 equal parts. Shade $\frac{2}{8}$.



- ③ Divide into 12 equal parts. Shade $\frac{3}{12}$.



- ④ Create your own. Divide into equal parts and shade a portion. Record the amount you shaded.



- ⑤ What patterns do you notice in Problems 1 through 3?

Practice

- ⑥ List the next 4 multiples of 5. 20, _____, _____, _____, _____

- ⑦ List all the factors of 48. _____

- ⑧ List the factors of 48 that are composite. _____

Finding Equivalent Fractions

Home Link 3-3

NAME _____

DATE _____

TIME _____

Use the number lines to help you answer the following questions.



① Fill in the blank with = or \neq .

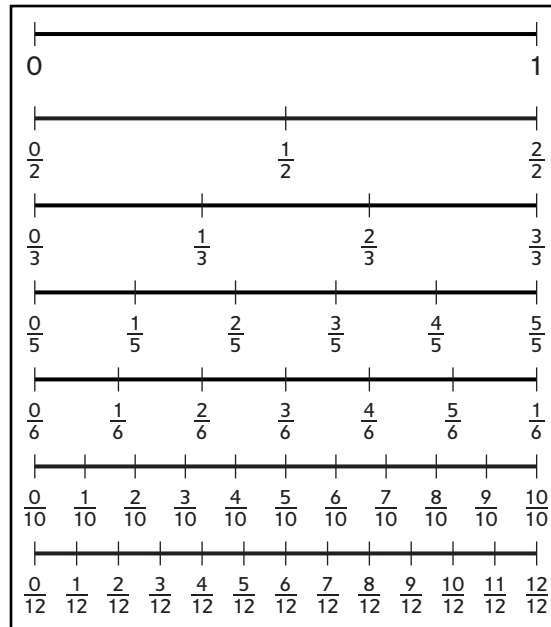
a. $\frac{2}{3}$ _____ $\frac{1}{3}$

b. $\frac{2}{6}$ _____ $\frac{1}{3}$

c. $\frac{2}{6}$ _____ $\frac{2}{5}$

d. $\frac{1}{5}$ _____ $\frac{2}{10}$

e. $\frac{2}{12}$ _____ $\frac{1}{6}$



② Fill in the missing numbers.

a. $\frac{1}{5} = \frac{\square}{10}$

b. $\frac{4}{12} = \frac{\square}{3}$

c. $\frac{5}{10} = \frac{\square}{2}$

d. $\frac{3}{6} = \frac{\square}{12}$

e. $\frac{4}{6} = \frac{\square}{3}$

③ Circle the number sentences that are NOT true.

a. $\frac{3}{12} = \frac{1}{4}$

b. $\frac{1}{2} = \frac{5}{10}$

c. $\frac{2}{6} = \frac{2}{5}$

d. $\frac{7}{10} = \frac{4}{6}$

e. $\frac{9}{10} = \frac{11}{12}$

Practice

Solve using U.S. traditional addition or subtraction.

④ _____ = $989 + 657$

⑤ $3,314 + 4,719 =$ _____

⑥ $5,887 - 3,598 =$ _____

⑦ _____ = $2,004 - 1,716$

Finding Equivalent Fractions

Family Note Today students learned about an **Equivalent Fractions Rule**, which can be used to rename any fraction as an equivalent fraction. The rule for multiplication states that if the numerator and denominator are multiplied by the same nonzero number, the result is a fraction that is equivalent to the original fraction.

For example, the fraction $\frac{1}{2}$ can be renamed as an infinite number of equivalent fractions. When you multiply the numerator 1 by 5, the result is 5. When you multiply the denominator 2 by 5, the result is 10.

$$\frac{1 \times 5}{2 \times 5} = \frac{5}{10}$$

This results in the number sentence $\frac{1}{2} = \frac{5}{10}$. If you multiplied both the numerator and denominator in $\frac{1}{2}$ by 3, the result would be $\frac{3}{6}$, which is also equal to $\frac{1}{2}$.

Fill in the boxes to complete the equivalent fractions.



Example: $\frac{1}{2} = \frac{3}{\boxed{6}}$

- ① $\frac{1}{2} = \frac{6}{\boxed{}}$ ② $\frac{1}{4} = \frac{3}{\boxed{}}$ ③ $\frac{1}{3} = \frac{2}{\boxed{}}$ ④ $\frac{2}{3} = \frac{8}{\boxed{}}$ ⑤ $\frac{1}{5} = \frac{\boxed{}}{10}$
- ⑥ $\frac{2}{5} = \frac{\boxed{}}{10}$ ⑦ $\frac{3}{4} = \frac{9}{\boxed{}}$ ⑧ $\frac{5}{6} = \frac{10}{\boxed{}}$ ⑨ $\frac{2}{\boxed{}} = \frac{6}{9}$ ⑩ $\frac{4}{\boxed{}} = \frac{8}{12}$

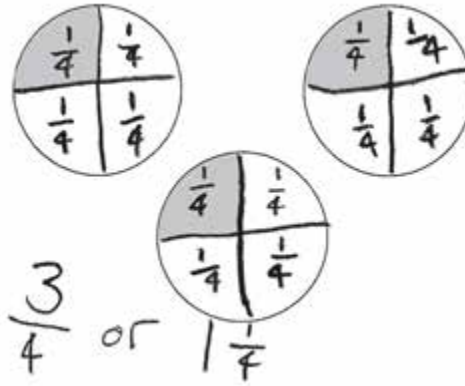
⑪ Name 3 equivalent fractions for $\frac{1}{2}$. _____

Practice

- ⑫ List all the factors of 56. _____
- ⑬ Write the factor pairs for 30.
 _____ and _____, _____ and _____, _____ and _____,
 _____ and _____
- ⑭ Is 30 prime or composite? _____

Sharing Veggie Pizza

- ① Karen and her 3 friends want to share 3 small veggie pizzas equally. Karen tried to figure out how much pizza each of the 4 children would get. She drew this picture and wrote two answers.



- a. Which of Karen's answers is correct? _____
- b. Draw on Karen's diagram to make it clear how the pizza should be distributed among the 4 children.
- ② Erin and her 7 friends want to share 6 small veggie pizzas equally. How much pizza will each of the 8 children get? _____
- ③ Who will get more pizza, Karen or Erin? _____
- Explain or show how you know.

Practice

- ④ List all the factors of 50. _____
- ⑤ Is 50 prime or composite? _____
- ⑥ Write the factor pairs for 75.
- _____ and _____
- _____ and _____
- _____ and _____

Solving Fraction Comparison Number Stories

Home Link 3-6

NAME _____

DATE _____

TIME _____



- ① Tenisha and Christa were each reading the same book. Tenisha said she was $\frac{3}{4}$ of the way done with it, and Christa said she was $\frac{6}{8}$ of the way finished.

Who has read more, or have they read the same amount? _____

How do you know? _____

- ② Heather and Jerry each bought an ice cream bar. Although the bars were the same size, they were different flavors. Heather ate $\frac{5}{8}$ of her ice cream bar, and Jerry ate $\frac{5}{10}$ of his.

Who ate more, or did they eat the same amount? _____

Write a number sentence to show this. _____

- ③ Howard's baseball team won $\frac{7}{10}$ of its games. Jermaine's team won $\frac{2}{5}$ of its games. They both played the same number of games.

Whose team won more games, or did they win the same amount? _____

How do you know? _____

- ④ Write your own fraction number story. Ask someone at home to solve it.

Practice

Write T for true or F for false.

⑤ $1,286 + 2,286 = 3,752$ _____

⑥ $9,907 - 9,709 = 200$ _____

⑦ $2,641 + 4,359 = 2,359 + 4,641$ _____

⑧ $2,345 - 198 = 2,969 - 822$ _____

Comparing and Ordering Fractions

Home Link 3-7

NAME _____

DATE _____

TIME _____

Write the fractions from smallest to largest, and then justify your conclusions by placing the numbers in the correct places on the number lines.



① $\frac{5}{6}, \frac{2}{6}, \frac{4}{6}$

smallest

largest



② $\frac{3}{5}, \frac{9}{10}, \frac{1}{4}, \frac{5}{12}$

smallest

largest



③ $\frac{7}{12}, \frac{1}{2}, \frac{2}{3}, \frac{4}{10}, \frac{1}{6}$

smallest

largest



Practice

④ _____ = 5,494 + 3,769

⑤ 5,853 + 4,268 = _____

⑥ _____ = 8,210 - 6,654

⑦ 7,235 - 5,906 = _____

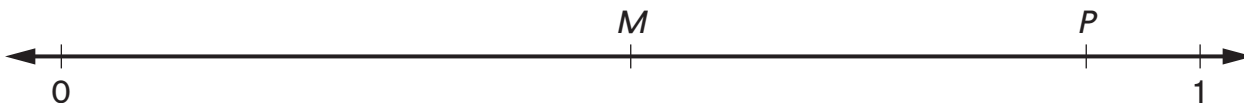
Names for Fractions and Decimals



① Fill in the blanks in the table below.

Number in Words	Fraction	Decimal
one-tenth		
four-tenths		
	$\frac{8}{10}$	
		0.9
	$\frac{2}{10}$	
seven-tenths		

② Name two ways you might see decimals used outside of school.



③ What decimal is represented by the tick mark labeled *M*? _____

④ What fraction is represented by the tick mark labeled *M*? _____

⑤ What decimal is represented by the tick mark labeled *P*? _____

⑥ What fraction is represented by the tick mark labeled *P*? _____

Practice

⑦ List all the factors of 100. _____

⑧ List the factors of 100 that are prime. _____

⑨ Write the factor pairs for 42.

_____ and _____ _____ and _____

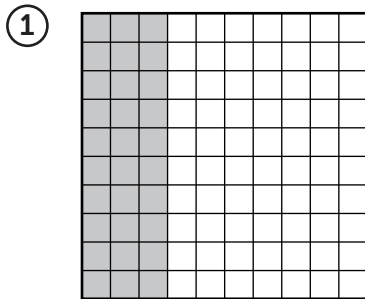
_____ and _____ _____ and _____

Representing Fractions and Decimals



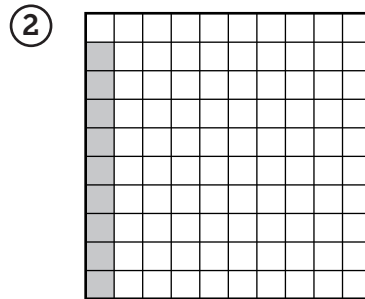
If the grid is the whole, then what part of each grid is shaded?

Write a fraction and a decimal below each grid.



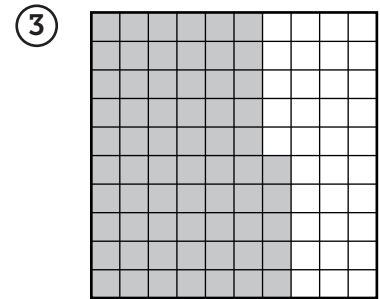
fraction: _____

decimal: _____



fraction: _____

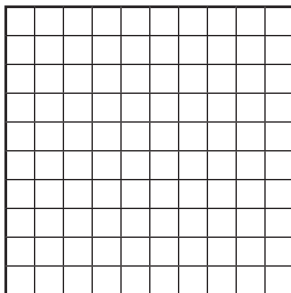
decimal: _____



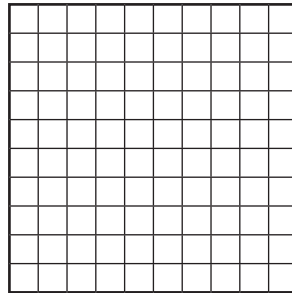
fraction: _____

decimal: _____

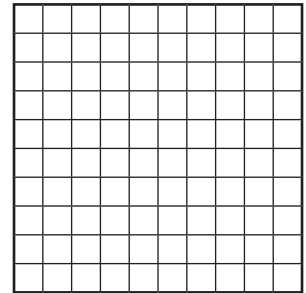
④ Color 0.8 of the grid.



⑤ Color 0.04 of the grid.



⑥ Color 0.53 of the grid.



Practice

⑦ The numbers 81, 27, and 45 are all multiples of 1, _____, and _____.

⑧ List the first ten multiples of 6.

_____, _____, _____, _____, _____, _____, _____, _____,
 _____, _____

Tenths and Hundredths

Family Note Your child continues to work with decimals. Encourage him or her to think about ways to write money amounts. This is called dollars-and-cents notation. For example, \$0.07 (7 cents), \$0.09 (9 cents), and so on.

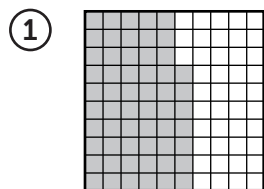
Write the decimal numbers that represent the shaded part in each diagram.

Whole

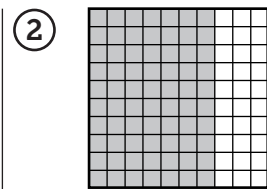
grid

SRB

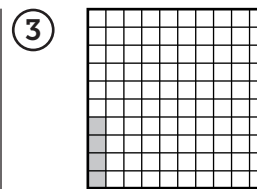
149-150



_____ hundredths
 ____ tenths ____ hundredths



_____ hundredths
 ____ tenths ____ hundredths



_____ hundredths
 ____ tenths ____ hundredths

Write the words as decimal numbers.

④ twenty-three hundredths

⑤ eight and four-tenths

⑥ thirty and twenty-hundredths

⑦ five-hundredths

Continue each pattern.

⑧ 0.1, 0.2, 0.3, _____, _____, _____, _____, _____

⑨ 0.01, 0.02, 0.03, _____, _____, _____, _____, _____

Practice

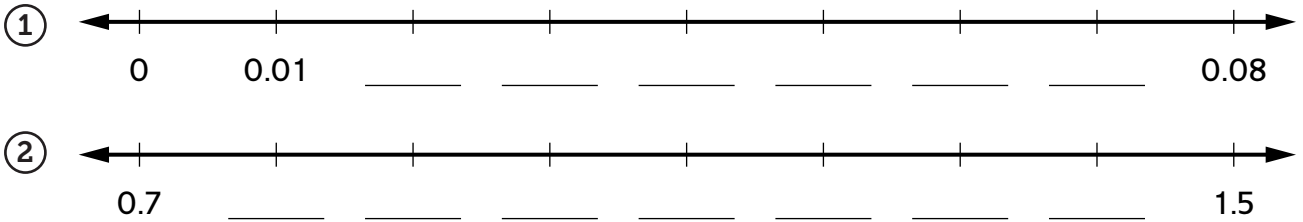
⑩ Round 7,604 to the nearest thousand. _____

⑪ Round 46,099 to the nearest thousand. _____

⑫ Round 8,500,976 three ways: nearest thousand, hundred-thousand, and million.

Practice with Decimals

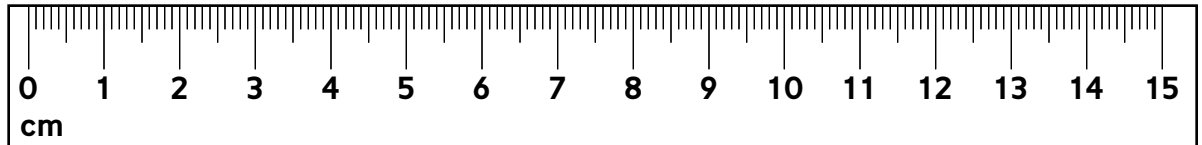
Fill in the missing numbers.



Follow these directions on the ruler below.



- ③ Make a dot at 7 cm and label it with the letter *A*.
- ④ Make a dot at 90 mm and label it with the letter *B*.
- ⑤ Make a dot at 0.13 m and label it with the letter *C*.
- ⑥ Make a dot at 0.06 m and label it with the letter *D*.



- ⑦ Write $<$, $>$, or $=$.
- a. 1.2 ___ 0.12 b. 0.3 ___ 0.38 c. 0.80 ___ 0.08

- ⑧ Complete.

1 cm = 10 mm 1 m = 100 cm

cm	m
100	1
	5
1,000	
6,000	

cm	m
1	0.01
	0.03
	0.06
40	

Practice

- ⑨ $6,366 + 7,565 =$ _____
- ⑩ $3,238 + 29,784 =$ _____
- ⑪ $9,325 - 7,756 =$ _____
- ⑫ $14,805 - 2,927 =$ _____

Measuring Centimeters and Millimeters

Home Link 3-12

NAME _____

DATE _____

TIME _____

- ① Find 6 objects in your home to measure. Use the ruler from the bottom of the page to measure them, first in centimeters and then in millimeters. Record your objects and their measurements.



Example: crayon 3.5 cm 35 mm

Object	_____ cm	_____ mm	Object	_____ cm	_____ mm
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Fill in the tables.

②

cm	mm
1	
15	
3.7	
49.6	
0.8	

③

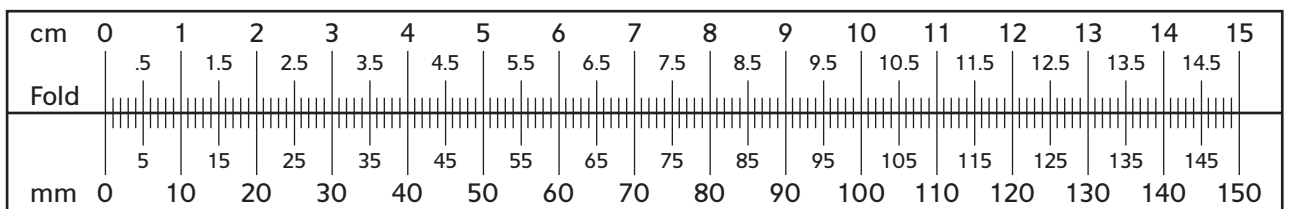
cm	m
	1
180	
	23.6
	5.72
	0.65

Practice

- ④ List the factors for 63. _____
- ⑤ Write the factor pairs for 60.

_____ and _____ _____ and _____ _____ and _____

_____ and _____ _____ and _____ _____ and _____



Comparing Decimals

Family Note Ask your child to read the decimal numerals aloud. Encourage your child to use the following method:

1. Read the whole-number part.
2. Say *and* for the decimal point.
3. Read the digits after the decimal point as though they form their own number.
4. Say *tenths* or *hundredths*, depending on the placement of the right-hand digit. Encourage your child to exaggerate the *-ths* sound. For example, 2.37 is read as "two and thirty-seven hundredths."

Write $>$, $<$, or $=$.



① 2.35 _____ 2.57

② 1.08 _____ 1.8

③ 0.64 _____ 0.46

④ 0.90 _____ 0.9

⑤ 42.1 _____ 42.09

⑥ 7.09 _____ 7.54

⑦ 0.4 _____ 0.40

⑧ 0.26 _____ 0.21

$>$ means *is greater than*

$<$ means *is less than*

Example: The 4 in 0.47 stands for 4 tenths or 0.4.

⑨ The 9 in 4.59 stands for 9 _____ or _____.

⑩ The 3 in 3.62 stands for 3 _____ or _____.

Continue each number pattern.

⑪ 6.56, 6.57, 6.58, _____, _____, _____

⑫ 0.73, 0.83, 0.93, _____, _____, _____

Write the number that is 0.1 more.

Write the number that is 0.1 less.

⑬ 4.3 _____

⑭ 4.07 _____

⑮ 8.2 _____

⑯ 5.63 _____

Practice

⑰ $43,589 + 12,641 =$ _____

⑱ $63,274 + 97,047 =$ _____

⑲ $41,805 - 26,426 =$ _____

⑳ $82,004 - 11,534 =$ _____

Multidigit Multiplication

In Unit 4 your child will multiply multidigit numbers using **extended multiplication facts**, **partial-products multiplication**, and **lattice multiplication**. Throughout the unit, students use these methods to solve real-life multistep multiplication number stories.

The unit begins with extended multiplication facts. Knowing that $5 * 3 = 15$ helps students see that $50 * 3 = 150$; $500 * 3 = 1,500$; and so on. Working with extended facts gives students the ability to multiply larger numbers with ease.

Students also learn the partial-products multiplication method in which the value of each digit in one factor is multiplied by the value of each digit in the other factor. They partition a rectangle into smaller parts to help them understand how the method works. The example below shows how to use partial-products multiplication to find $456 * 4$.

Partitioned Rectangles	Partial-Products Multiplication			
$400 + 50 + 6$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">4</div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 30%; height: 60px; vertical-align: middle;">1600</td> <td style="width: 20%; height: 60px; vertical-align: middle;">200</td> <td style="width: 10%; height: 60px; vertical-align: middle;">24</td> </tr> </table> </div> 456	1600	200	24	$ \begin{array}{r} 456 \\ * 4 \\ \hline 1600 \\ 200 \\ + 24 \\ \hline 1,824 \end{array} $
1600	200	24		

To practice multiplying 2-digit numbers using partial-products multiplication, students play a game called *Multiplication Wrestling*.

Finally, students are introduced to the lattice multiplication method: The lattice method breaks down the numbers into place values, allowing students to work with smaller numbers while solving a multidigit multiplication problem. It is an efficient method, often taking no more time than other methods.

$$\begin{array}{r}
 79 \\
 \times 4 \\
 \hline
 316
 \end{array}$$

← factor
← factor

In this unit, students apply their understanding of multidigit multiplication to solve conversion problems involving liters and milliliters and grams and kilograms. They also find the area of rectilinear figures.

Please keep this Family Letter for reference as your child works through Unit 4.

Vocabulary

Important terms in Unit 4:

adjacent Next to, or adjoining.

decompose To “break apart” numbers into friendlier numbers.

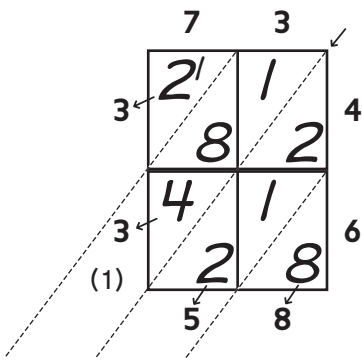
Distributive Property A rule saying that if a , b , and c are real numbers, then:
 $a * (b + c) = (a * b) + (a * c)$.

extended multiplication facts Multiplication facts involving multiples of 10, 100, and so on. For example, $400 * 6 = 2,400$ and $20 * 30 = 600$ are extended multiplication facts.

gram (g) A unit of mass in the metric system. There are about 454 grams in 1 pound.

kilogram (kg) 1,000 grams.

lattice multiplication A way to multiply multidigit numbers. *For example:*



liter (L) A unit of capacity in the metric system. It is equivalent to a little more than one quart.

mass The measure of the amount of matter in an object.

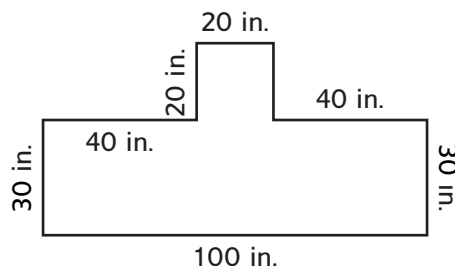
milliliter (mL) $\frac{1}{1000}$ of a liter.

partial-products multiplication A way to multiply in which the value of each digit in one factor is multiplied by the value of each digit in the other factor. The final product is the sum of the partial products. *For example:*

$$\begin{array}{r}
 73 \\
 * 46 \\
 \hline
 40 * 70 \rightarrow 2800 \\
 40 * 3 \rightarrow 120 \\
 6 * 70 \rightarrow 420 \\
 6 * 3 \rightarrow 18 \\
 \hline
 3,358
 \end{array}$$

partition (in partial-products multiplication) A technique that uses the Distributive Property to break up a large rectangle into smaller rectangles in order to find the area more easily in parts.

rectilinear figure A single figure formed by combining multiple adjacent rectangles.



Do-Anytime Activities

To work with your child on concepts taught in this unit, try these activities:

1. Practice extended multiplication facts such as $50 * 40 = \underline{\quad}$.
2. Collect three to five cans and bottles from the kitchen. Put them on the table and ask your child to order them, without looking at the labels, based on the amount of liquid each container can hold and/or their mass. Ask your child to estimate both. Check the results together by looking at the labels.
3. Pose a multiplication problem and ask your child to solve it using a method of his or her choice. Have your child explain to you or someone else at home what he or she did to complete the problem.

Building Skills through Games

In this unit your child will play the following game to develop his or her understanding of multiplication. For detailed instructions, see the *Student Reference Book*.

Multiplication Wrestling See *Student Reference Book*, page 267.

The game provides practice with multiplication of 2-digit numbers by 2-digit numbers.

As You Help Your Child with Homework

As your child brings assignments home, you may want to go over instructions together, clarifying them as necessary. The answers listed below will guide you through the Home Links for this unit.

Home Link 4-1

- 560; 3,200; 630; 3,600
- 450; 200; 63,000; 28,000
- 9; 240; 700; 6,300
- Answers vary. 9. 1,190
- 13,303

Home Link 4-2

Number models are sample answers.

- $(20 * 30) - (10 * 30) = 300$;
330; Answers vary.
- $30 * 50 = 1,500$; $30 * 40 = 1,200$; $1,500 - 1,200 = 300$; 496; Answers vary.
- 1,410,000

Home Link 4-3

- 140; Sample answer:

	30	5	
4	120	20	
	35		
			$\begin{array}{r} 120 \\ + 20 \\ \hline 140 \end{array}$

- 441; Sample answer:

	40	9	
9	360	81	
	49		
			$\begin{array}{r} 360 \\ + 81 \\ \hline 441 \end{array}$

- 2,956
- 2,559

Home Link 4-4

- 8,000; 15,000; 20,000; 25,000
- 122,000 mL 5. 14,445 7. 62,341

Home Link 4-5

- Sample answer: Four calculators fit in a layer. The box is 5 cm tall, so there are 5 layers of calculators. The box fits 4 calculators * 5, which is 20 calculators in all.
- 108
- 129

Home Link 4-6

- $$\begin{array}{r} 48 \\ * 3 \\ \hline 120 \\ + 24 \\ \hline 144 \end{array}$$
- 9 [100,000s] + 5 [1,000s] + 6 [100s] + 3 [1s]

Unit 4: Family Letter, *continued*

5. $2 [1,000,000s] + 5 [100,000s] + 9 [10,000s] + 9 [1,000s] + 2 [1s]$

Home Link 4-7

- 25; 50,000; 75,000; 100
- 237,000; 98,000; 485; 920,000
- 63,000 grams 7. 396 9. 294

Home Link 4-8

- \$478 3. \$55
- 1, 3, 7, 21 7. 1, 2, 3, 4, 6, 9, 12, 18, 36

Home Link 4-9

- 1,748

$$\begin{array}{r} 46 \\ * 38 \\ \hline 1200 \\ 180 \\ 320 \\ + 48 \\ \hline 1,748 \end{array}$$

- $65 * 22 = t$; 1,430 trees
- 185 7. 1,992

Home Link 4-10

- 42; 420; 420; 4,200; 4,200; 42,000
- 32; 320; 320; 3,200; 3,200; 32,000
- 6; 6; 60; 9; 900; 9,000
- 2,139 9. 32,632

Home Link 4-11

- $18 * 27 = 486$; 486 square units
- Sample answer: $100 * 30 = 3,000$;
 $20 * 20 = 400$; $3,000 + 400 = 3,400$;
3,400 square inches
- 1, 2, 31, 62 7. 1, 5, 11, 55

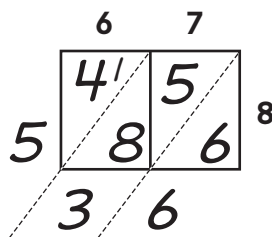
Home Link 4-12

Sample number models:

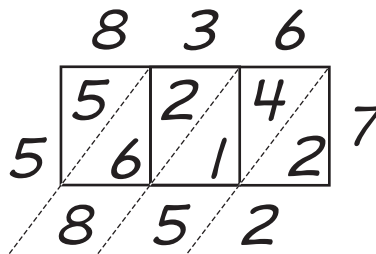
- $(10 * 7) * 2 = 140$; $(5 * 7) * 2 = 70$;
 $140 + 70 = 210$ stickers;
 $(8 * 7) * 2 = x$; $(5 * 7) * 2 = y$;
 $112 + 70 = s$; 182 stickers
- 1 and 50, 2 and 25, 5 and 10
- 1 and 85, 5 and 17

Home Link 4-13

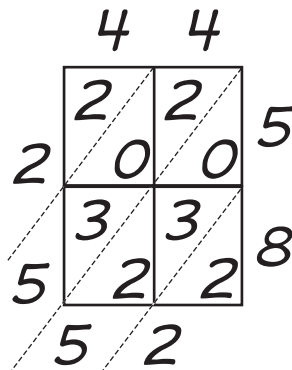
- 536



- 5,852



- 2,552



- 616 8. 356