Name _____

Numbers to Ten Thousand

Essential Question How can you represent numbers to ten thousand in different ways?

Unlock the Problem Real World

The Thousand Bolts factory uses boxes of 1,000 bolts to fill crates of 10,000 bolts. How many boxes of 1,000 bolts are in each crate of 10,000?

- Circle the number you will need to count to find the answer.

Count by thousands to find the total number of boxes of 1,000 bolts that will go into each crate. Then count the boxes.

1,000	2,000					
1	2					

So, there are _____ boxes of 1,000 bolts in each crate of 10,000.

Example **Suppose the factory has no crates and must use case of 100 to fill an order for 3,200 bolts. How many cases will it pack?**

There are _____ cases of 100 in 1,000.

So, there are _____ cases of 100 in 3,000.

There are _____ cases of 100 in 200.

Add the cases. 30 + 2 = _____.

So, the factory will pack 32 cases of 100.

Math Talk Mathematical Practices

What if the factory had boxes of 1,000 and bags of 10 but no cases of 100? **Explain** how it could pack the order for 3,200 bolts.

Share and Show

MATH BOARD

1. The Thousand Bolts factory has an order for 3,140 bolts. How can it pack the order using the fewest packages?

_____

2. Suppose the bolt factory has only cases and bags. How can it pack the order for 3,140 bolts?

_____

3. Suppose the bolt factory has only boxes and bags. How can it pack the order for 3,140 bolts?

Remember

1 box = 1,000 bolts
1 case = 100 bolts
1 bag = 10 bolts

On Your Own

Complete the packing chart. Use the fewest packages possible. When there is a zero, use the next smaller size package.

	Number of Bolts Ordered	Crates (Ten Thousands)	Boxes (Thousands)	Cases (Hundreds)	Bags (Tens)	Single Bolts (Ones)
4.	5,267		5			
5.	2,709			7	0	
6.	5,619					
7.	8,416		0		1	6
8.	3,967		0		0	

Problem Solving

Real World

9. The Thousand Bolts factory used 9 boxes, 9 cases, and 10 bags to fill an order. How many bolts did they pack?

_____

Name _____

Read and Write Numbers to Ten Thousands

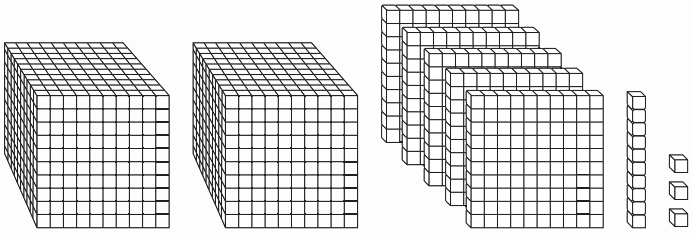
Essential Question What are some ways you can read and write numbers?

Unlock the Problem Real World

The ABC Block Factory receives an order for blocks. The base-ten blocks show the number of blocks ordered.

- How many blocks were ordered?

_____



Math Idea

The location of a digit in a number tells its value.

Each worker on the team checks the order by expressing the number in a different way. What way does each worker use?

Read and write numbers.

Word form is a way to write a number using words.

Sam gets the order and reads the number to Mary: two thousand, five hundred thirteen

Expanded form is a way to write a number by showing the value of each digit.

Mary uses the value of each digit to record the number of blocks that will be in each type of package:
2,000 + 500 + 10 + 3

Standard form is a way to write a number using the digits 0 to 9, with each digit having a place value.

When the order is complete, Kyle writes the total number of blocks on the packing slip: 2,513

So, Sam says the number using _____ form, Mary uses _____ form, and Kyle uses _____ form.

Math Talk Mathematical Practices

Explain how to find the value of the underlined digit in 7,521.

Share and Show

MATH BOARD

1. Write the number shown in expanded form.

TEN THOUSANDS	THOUSANDS	HUNDREDS	TENS	ONES
	7,	5	9	8

_____ + 500 + 90 + _____

Write the number in standard form.

2. 4,000 + 600 + 70 + 4 _____

3. eight thousand, two hundred sixty-one _____

Write the value of the underlined digit two ways.

4. 6,920

_____

5. 8,063

_____

On Your Own

Write the number in standard form.

6. 5,000 + 600 + 90 + 7 _____

7. two thousand, three hundred fifty-nine _____

8. one thousand, three hundred two _____

Write the value of the underlined digit two ways.

9. 6,818

_____

10. 9,342

_____

11. Rename 3,290 as hundreds and tens.

_____ hundreds _____ tens

12. Rename 2,934 as tens and ones.

_____ tens _____ ones

Problem Solving

Real World

13. The number of children who attended the fair on opening day is 351 more than the value of 4 thousands. How many children attended the fair on opening day?

_____

Name _____

Relative Size on a Number Line

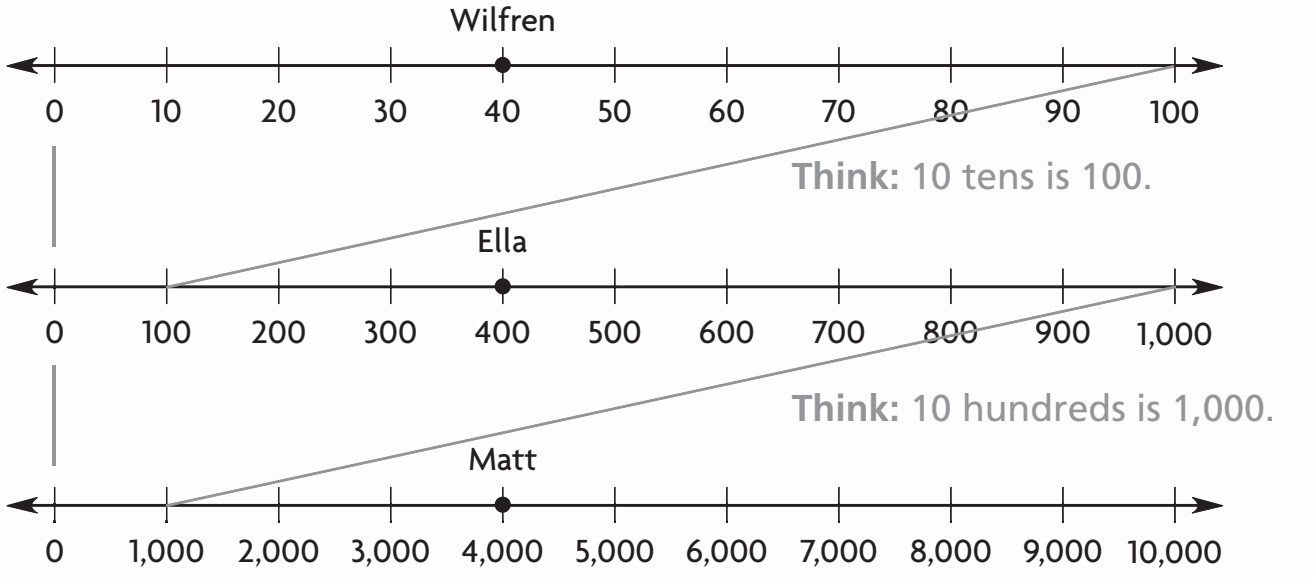
Essential Question How can you locate and name a point on a number line?

Unlock the Problem (Real World)

Wilfren has 40 pennies, Ella has 400 pennies, and Matt has 4,000 pennies. How do their amounts of pennies compare?

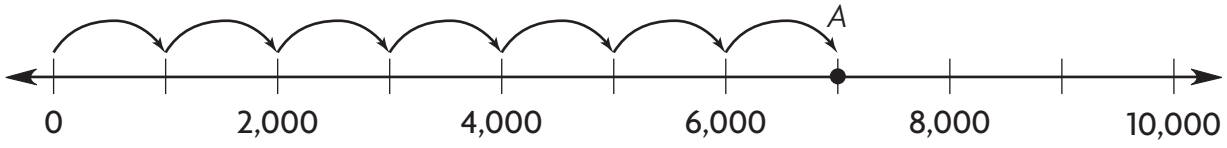
- Circle the amounts you need to compare.

Compare the relative sizes of the amounts of pennies.



So, Ella has _____ times as many pennies as Wilfren, and Matt has _____ times as many pennies as Ella.

Try This! **Find the number represented by the point.**



Start at 0. Skip count by 1,000s until you reach point A.

There are _____ jumps of 1,000. So, point A represents _____.

Math Talk — Mathematical Practices

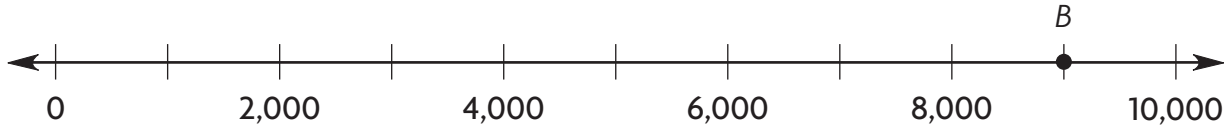
Explain how to locate and draw the point 3,000 on a number line.

Share and Show

MATH BOARD

Find the number that point *B* represents on the number line.

1.



_____

On Your Own

Find the number represented by the point.

2.

_____

3.

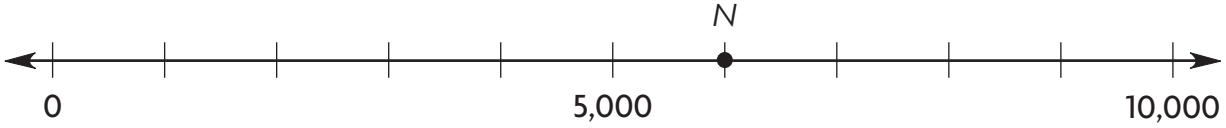
_____

Problem Solving

Real World

Use the number line for 4–5.

Nestor and Elliot are playing a number line game.



4. Nestor's score is shown by point *N* on the number line. What is his score?

_____

5. Elliot's score is 8,000. Is Elliot's score located to the right or to the left of Nestor's score? **Explain**.

_____

Name _____

Compare 3- and 4-Digit Numbers

Essential Question What are some ways you can compare numbers?

Unlock the Problem Real World

Cody collected 2,365 pennies. Jasmine collected 1,876 pennies. Who collected more pennies?

- What do you need to find?

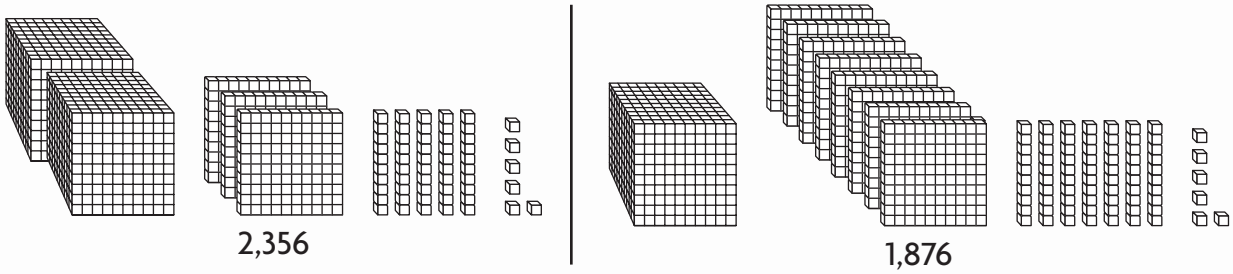
_____

_____

You can compare numbers in different ways to find which number is greater.

One Way Use base-ten blocks.

Compare the values of the blocks in each place-value position from left to right. Keep comparing the blocks until the values are different.



2 thousands is greater than 1 thousand. So, 2,365 ◯ 1,876.

So, Cody collected more pennies.

Read Math

Read < as *is less than*.
Read > as *is greater than*.
Read = as *is equal to*.

Another Way Use place value.

Compare 7,376 and 7,513.

Compare digits in the same place-value position from left to right.

THOUSANDS	HUNDREDS	TENS	ONES
7,	3	7	6
7,	5	1	3

STEP 1: Compare the thousands. The digits are the same.

STEP 2: Compare the hundreds. 3 ◯ 5

So, 7,376 ◯ 7,513.

Math Talk Mathematical Practices

Explain how you know that 568 is less than 4,786.

Share and Show

MATH BOARD

1. Compare 2,351 and 3,018. Which number has more thousands? Which number is greater?

_____

_____

Compare the numbers. Write <, >, or = in the ◯.

2. 835 ◯ 853
3. 7,891 ◯ 7,891
4. 809 ◯ 890
5. 3,834 ◯ 3,483

On Your Own

Compare the numbers. Write <, >, or = in the ◯.

6. 219 ◯ 2,119
7. 2,517 ◯ 2,715
8. 5,154 ◯ 5,154
9. 5,107 ◯ 5,105
10. 1,837 ◯ 837
11. 9,832 ◯ 9,328

Problem Solving

Real World

12. Nina has a dictionary with 1,680 pages. Trey has a dictionary with 1,490 pages. Use <, >, or = to compare the number of pages in the dictionaries.

_____

13. The odometer in Ed's car shows it has been driven 8,946 miles. The odometer in Beth's car shows it has been driven 5,042 miles. Which car has been driven more miles?

_____

14. Avery said that she is 3,652 days old. Tamika said that she is 3,377 days old. Who is younger?

_____

Name _____

Checkpoint

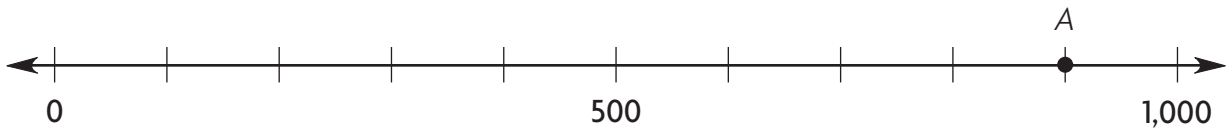
Concepts and Skills

Complete the packing chart. Use the fewest packages possible. When there is a zero, use the next smaller size package.

	Number of Bolts Ordered	Crates (Ten Thousands)	Boxes (Thousands)	Cases (Hundreds)	Bags (Tens)	Single Bolts (Ones)
1.	5,267		5			
2.	2,709			7	0	

Find the number that point *A* represents on the number line.

3.



_____

Compare the numbers. Write <, >, or = in the ◯.

4. 4,310 ◯ 4,023

5. 5,136 ◯ 5,136

6. 732 ◯ 6,532

7. 9,436 ◯ 4,963

Problem Solving Real World

8. The number of people who attended the Spring Festival is 799 more than 8 thousands. How many people attended the festival?

_____

9. There are 1,290 photos on Nadia's memory card. There are 1,450 photos on Trevor's memory card. Use <, >, or = to compare the number of photos on the memory cards.

_____

Fill in the bubble for the correct answer choice.

10. A marble factory ships marbles using bags of 10, cases of 100, cartons of 1,000, and boxes of 10,000. The factory has an order for 3,570 marbles. How can they pack the order if the factory is out of cartons?

Ⓐ 350 cases, 7 bags

Ⓑ 35 cases, 7 bags

Ⓒ 35 cases, 57 bags

Ⓓ 3 cases, 75 bags

11. The number of fans who attend the baseball game on opening day is 283 more than 4 thousands. How many fans are attending the baseball game on opening day?

Ⓐ 283

Ⓑ 4,000

Ⓒ 4,283

Ⓓ 4,823

Use the number line for 12–13.

12. Kam scored 6,000 points in a game. Which letter on the number line names the point that represents Kam's score?

Ⓐ *F*

Ⓑ *G*

Ⓒ *H*

Ⓓ *I*

13. Taissa scored 9,000 points in a game. Which letter on the number line names the point that represents Taissa's score?

Ⓐ *F*

Ⓑ *G*

Ⓒ *H*

Ⓓ *I*

Name _____

Multiply with 11 and 12

Essential Question What strategies can you use to multiply with 11 and 12?

Unlock the Problem Real World

It takes Bobby 11 minutes to walk to school each morning. How many minutes will Bobby spend walking to school in 5 days?

- What are the groups in this problem?

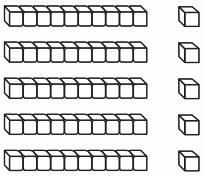
_____

_____

Multiply. $5 \times 11 = \square$

One Way Break apart an array.

Make 5 rows of 11. Use the 10s facts and the 1s facts to multiply with 11.



$5 \times (10 + 1)$

$5 \times 10 =$ _____ $5 \times 1 =$ _____

$5 \times 11 =$ _____ + _____

$5 \times 11 =$ _____

So, Bobby will spend _____ minutes walking to school.

Another Way Find a pattern.

Look at the list.

Notice the product has the same factor in the tens and ones places.

To find 5×11, write the first factor in the tens and ones places.

$5 \times 11 = 55$

$1 \times 11 = 11$
$2 \times 11 = 22$
$3 \times 11 = 33$
$4 \times 11 =$ _____
$5 \times 11 =$ _____
$6 \times 11 = 66$
$7 \times 11 = 77$
$8 \times 11 = 88$
$9 \times 11 = 99$

Try This! **What if** it took Bobby 12 minutes to walk to school? How many minutes will he spend walking to school in 5 days?

Break apart the factor 12.

$5 \times (10 + 2)$

$5 \times 10 = 50$ $5 \times 2 = 10$

$5 \times 12 =$ _____ + _____ = _____

Double a 6s fact.

Find the 6s product. $5 \times 6 = 30$

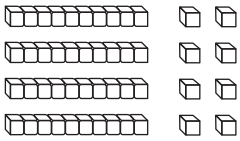
Double that product. _____ + _____ = _____

So, $5 \times 12 =$ _____. Bobby will spend _____ minutes walking to school.

Share and Show

MATH BOARD

1. How can you use the 10s facts and the 2s facts to find 4×12?



_____

_____

Find the product.

2. $9 \times 11 =$ _____

3. $7 \times 12 =$ _____

4. _____ $= 4 \times 11$

On Your Own

Find the product.

5. _____ $= 11 \times 6$

6. _____ $= 12 \times 2$

7. $0 \times 11 =$ _____

8. _____ $= 6 \times 12$

9. $8 \times 12 =$ _____

10. $7 \times 11 =$ _____

11. $12 \times 9 =$ _____

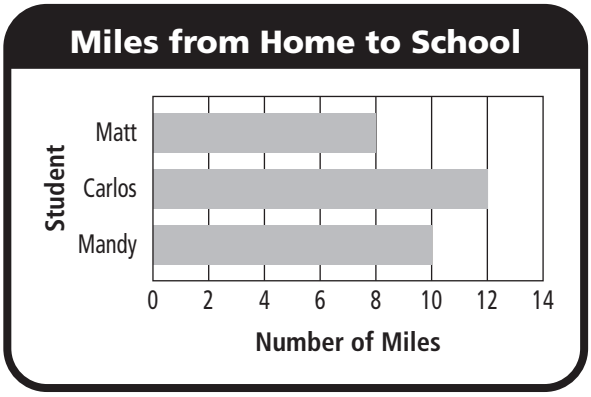
12. $3 \times 12 =$ _____

13. $1 \times 12 =$ _____

Problem Solving

Real World

Use the graph for 14–15.



14. The graph shows the number of miles some students travel to school each day. How many miles will Carlos travel to school in 5 days?

_____

15. Suppose that Mandy takes 9 trips to school, and Matt takes 11 trips to school. Who travels more miles? **Explain**.

_____

_____

Name _____

Divide with 11 and 12

Essential Question What strategies can you use to divide with 11 and 12?

Unlock the Problem Real World

Tara collects 60 postcards. She arranges them in 12 equal stacks. How many postcards are in each stack?

Divide. $60 \div 12 = \blacksquare$

- Do you need to find the number of groups or the number in each group?

_____

_____

One Way Use a multiplication table.

Since division is the inverse of multiplication, you can use a multiplication table to find a quotient.

Think of a related multiplication fact.

$$12 \times \blacksquare = 60$$

- Find the row for the factor 12.
- Look across to find the product, 60.
- Look up to find the unknown factor.
- The unknown factor is 5.

Since $12 \times 5 = 60$, then

$60 \div 12 =$ ____.

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Another Way Use repeated subtraction.

- Start with 60.
- Subtract 12 until you reach 0.
- Count the number of times you subtract 12.

$$\begin{array}{r} 60 \\ -\ 12 \\ \hline 48 \end{array} \quad \begin{array}{r} 48 \\ -\ 12 \\ \hline 36 \end{array} \quad \begin{array}{r} 36 \\ -\ 12 \\ \hline 24 \end{array} \quad \begin{array}{r} 24 \\ -\ 12 \\ \hline 12 \end{array} \quad \begin{array}{r} 12 \\ -\ 12 \\ \hline 0 \end{array}$$

You subtracted 12 five times.

$60 \div 12 =$ _____

So, there are 5 postcards in each stack.

Math Talk Mathematical Practices

What other strategies can you use to divide?

Share and Show

MATH BOARD

1. Use the multiplication table on page P271 to find 99 ÷ 11.

_____ **Think:** What is a related multiplication fact?

Find the unknown factor and quotient.

2. 11 × ■ = 66 66 ÷ 11 = ■
   ■ = _____ ■ = _____

3. 2 × ■ = 24 24 ÷ 2 = ■
   ■ = _____ ■ = _____

4. 3 × ■ = 33 33 ÷ 3 = ■
   ■ = _____ ■ = _____

5. 12 × ■ = 72 72 ÷ 12 = ■
   ■ = _____ ■ = _____

On Your Own

Find the unknown factor and quotient.

6. 11 × ■ = 55 55 ÷ 11 = ■
   ■ = _____ ■ = _____

7. 12 × ■ = 48 48 ÷ 12 = ■
   ■ = _____ ■ = _____

8. 8 × ■ = 96 96 ÷ 8 = ■
   ■ = _____ ■ = _____

9. 8 × ■ = 88 88 ÷ 8 = ■
   ■ = _____ ■ = _____

Find the quotient.

10. 11 ÷ 11 = _____
11. 77 ÷ 7 = _____
12. _____ = 60 ÷ 12
13. _____ = 22 ÷ 11
14. 108 ÷ 9 = _____
15. 84 ÷ 12 = _____
16. 36 ÷ 3 = _____
17. _____ = 96 ÷ 12
18. 12 ÷ 12 = _____

Compare. Write <, >, or = for each ◯.

19. 96 ÷ 8 ◯ 96 ÷ 12
20. 77 ÷ 11 ◯ 84 ÷ 12
21. 99 ÷ 11 ◯ 84 ÷ 7

Problem Solving

Real World

22. Justin printed 44 posters to advertise the garage sale. He gave 11 friends the same number of posters to display around the neighborhood. How many posters did Justin give each friend?

_____

Name _____

Multiplication and Division Relationships

Essential Question How can you write related multiplication and division equations for 2-digit factors?

Multiplication and division are inverse operations.

Unlock the Problem Real World

Megan has a rose garden with the same number of bushes planted in each of 4 rows. There are 48 bushes in the garden. How many bushes are in each row of Megan's garden?

- What do you need to find?

_____

_____

One Way

Make an array.

48 ÷ 4 = ■

Count 48 tiles. Make 4 rows by placing 1 tile in each row.

Continue placing 1 tile in each of the 4 rows until all the tiles are used.

Draw the array you made.

There are _____ tiles in each row.

_____ ÷ _____ = _____

So, there are _____ bushes in each row of Megan's garden.

Another Way

Write related equations.

48 ÷ 4 = ■

Think: 4 times what number equals 48?

4 × _____ = 48

You can check your answer using repeated addition.

_____ + _____ + _____ + _____ = _____

Write related equations.

_____ × _____ = 48

48 ÷ _____ = _____

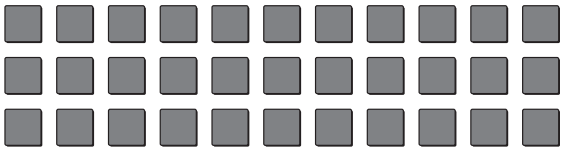
Math Talk Mathematical Practices

How can you tell if two equations are related?

Share and Show

MATH BOARD

1. Complete the related equations for this array.



$3 \times 11 = 33$ $\qquad$ $33 \div 3 = 11$

_____ $\qquad$ _____

Complete the related multiplication and division equations.

2. $1 \times 11 =$ _____

   _____ $\times 1 = 11$

   $11 \div 1 =$ _____

   _____ $\div 11 = 1$

3. $5 \times$ _____ $= 60$

   $12 \times 5 =$ _____

   _____ $\div 5 = 12$

   $60 \div$ _____ $= 5$

4. _____ $\times 11 = 77$

   _____ $\times 7 = 77$

   $77 \div$ _____ $= 11$

   _____ $\div 11 = 7$

On Your Own

Complete the related multiplication and division equations.

5. _____ $\times 12 = 84$

   _____ $\times 7 = 84$

   _____ $\div 7 = 12$

   $84 \div$ _____ $= 7$

6. $6 \times$ _____ $= 66$

   $11 \times$ _____ $= 66$

   $66 \div 6 =$ _____

   $66 \div 11 =$ _____

7. $12 \times 8 =$ _____

   $8 \times$ _____ $= 96$

   $96 \div$ _____ $= 8$

   $96 \div 8 =$ _____

Problem Solving

Real World

8. Megan cut 108 roses to make flower arrangements. She made 9 equal arrangements. How many roses were in each arrangement?

_____

9. Megan put 22 roses in a vase. She cut the same number of roses from each of 11 different bushes. How many roses did she cut from each bush?

_____

Name _____

Use Multiplication Patterns

Essential Question How can you multiply with 10, 100, and 1,000?

Unlock the Problem Real World

Mrs. Goldman ordered 4 boxes of yo-yos for her toy store. Each box had 100 yo-yos. How many yo-yos did Mrs. Goldman order?

- Circle the numbers you need to use.
- What operation can you use to find the total when you have equal groups?

_____

Use a basic fact and a pattern to multiply.

Factors		Products
4×1	=	4
4×10	=	40
4×100	=	400

Think: Use the basic fact $4 \times 1 = 4$. Look for a pattern of zeros.

So, Mrs. Goldman ordered 400 yo-yos.

Math Idea

As the number of zeros in a factor increases, the number of zeros in the product increases.

Try This! **Use a basic fact and a pattern to find the products.**

A. $1 \times 3 = 3$

$10 \times 3 =$ _____

B. $5 \times 1 = 5$

$5 \times 10 = 50$

$5 \times 100 =$ _____

$5 \times 1{,}000 =$ _____

Math Talk **Mathematical Practices**

When multiplying $9 \times 1{,}000$, how many zeros will be in the product? **Explain**

Share and Show

MATH BOARD

1. **Explain** how to use a basic fact and a pattern to find 6×100.

_____

_____

Use a basic fact and a pattern to find the products.

2. $7 \times 10 =$ _____
   $7 \times 100 =$ _____
   $7 \times 1{,}000 =$ _____

3. $10 \times 5 =$ _____
   $100 \times 5 =$ _____
   $1{,}000 \times 5 =$ _____

4. $3 \times 10 =$ _____
   $3 \times 100 =$ _____
   $3 \times 1{,}000 =$ _____

On Your Own

Use a basic fact and a pattern to find the products.

5. $2 \times 10 =$ _____
   $2 \times 100 =$ _____
   $2 \times 1{,}000 =$ _____

6. $10 \times 8 =$ _____
   $100 \times 8 =$ _____
   $1{,}000 \times 8 =$ _____

7. $9 \times 10 =$ _____
   $9 \times 100 =$ _____
   $9 \times 1{,}000 =$ _____

Find the product.

8. $10 \times 8 =$ _____
9. $6 \times 100 =$ _____
10. _____ $= 4 \times 100$
11. $1{,}000 \times 4 =$ _____
12. _____ $= 1{,}000 \times 3$
13. $9 \times 100 =$ _____

Problem Solving

Real World

Use the picture graph.

14. Patty has 20 fewer yo-yos in her collection than Chuck. Draw yo-yos in the picture graph. to show the number of yo-yos in Patty's collection. **Explain** your answer.

_____

_____

Yo-Yo Collections

Name	Number of Yo-Yos
Max	
Chuck	
Patty	

Key: Each = 10 Yo-Yos.

Name _____

Use Models to Multiply Tens and Ones

Essential Question How can you use base-ten blocks and area models to model multiplication with a 2-digit factor?

Unlock the Problem Real World

Three groups of 14 students toured the state capitol in Columbus, Ohio. How many students toured the capitol in all?

Multiply. $3 \times 14 = \blacksquare$

- What do you need to find?

  _____

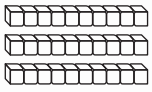
  _____

- Circle the numbers you need to use.

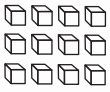
One Way

STEP 1

Model 3×14 with base-ten blocks.



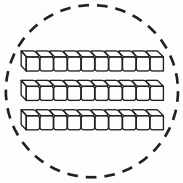
3 rows of 10



3 rows of 4

STEP 2

Multiply the tens and ones.
Record each product.



$3 \times 10 =$ _____ $3 \times 4 =$ _____

STEP 3

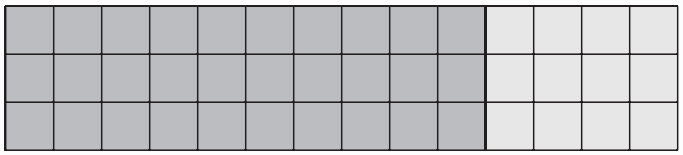
Add the products.
$30 + 12 = 42$

$3 \times 14 = 42$

Another Way

STEP 1

Model 3×14 with an area model.



3 rows of 10 3 rows of 4

STEP 2

Multiply the tens. Multiply the ones.

$3 \times 10 =$ _____ $3 \times 4 =$ _____

STEP 3

Add the products.
$30 + 12 = 42$

$3 \times 14 = 42$

Math Talk Mathematical Practices

How are the two ways to find a product alike?

So, 42 students toured the capitol.

Share and Show

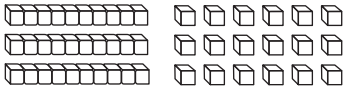
MATH BOARD

1. One way to model 18 is 1 ten 8 ones. How can knowing this help you find 4×18?

_____

_____

Find the product. Show your multiplication and addition.

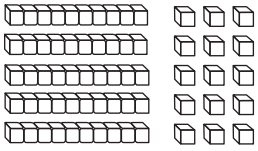
2. 

$3 \times 16 = \square$

_____

_____

_____

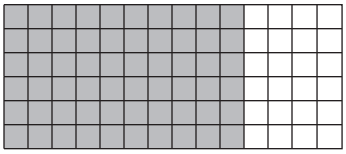
3. 

$5 \times 13 = \square$

_____

_____

_____

4. 

$6 \times 14 = \square$

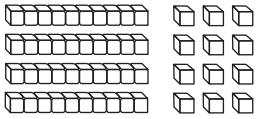
_____

_____

_____

On Your Own

Find the product. Show your multiplication and addition.

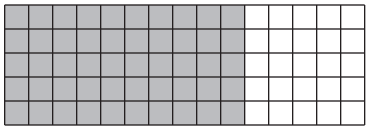
5. 

$4 \times 13 = \square$

_____

_____

_____

6. 

$5 \times 15 = \square$

_____

_____

_____

7. 

$3 \times 17 = \square$

_____

_____

_____

Problem Solving

Real World

8. Randy rakes yards for $5 an hour. How much money does he earn if he works for 12 hours? _____

Name _____

Model Division with Remainders

Essential Question How can you use counters to model division with remainders?

Unlock the Problem Real World

Madison has 13 seeds. She wants to put the same number of seeds in each of 3 pots. How many seeds can Madison put into each pot? How many seeds are left over?

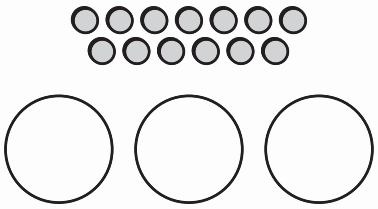
- How do you know how many groups to make?

_____

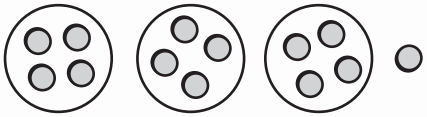
Activity **Materials** ■ counters

Use counters to find 13 ÷ 3.

STEP 1 Use 13 counters. Draw 3 circles for the 3 pots.



STEP 2 Place one counter in each group until there are not enough to put 1 more in each of the groups.



There are _____ counters in each circle.

There is _____ counter left over.

13 ÷ 3 is 4 with 1 left over.

The quotient is 4.

The remainder is 1.

So, Madison can put 4 seeds in each pot. There is 1 seed left over.

After dividing a group of objects into equal groups as large as possible, there may be some left over. The amount left over is called the **remainder**.

Math Talk Mathematical Practices

Explain why you cannot have a remainder of 3 when you divide by 3.

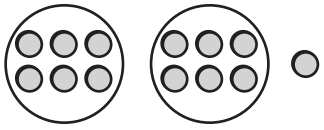
Try This! **What if** Madison wants to put 4 seeds in each pot. How many pots will Madison need? How many seeds will be left over?

_____

Share and Show

MATH BOARD

1. Divide 13 counters into 2 equal groups.



There are _____ counters in each group, and

_____ counter left over.

Complete.

2. April divided 17 counters into 4 equal groups.

   There were _____ counters in each group and _____ counter left over.

3. Divide 20 counters into groups of 6.

   There are _____ groups and _____ counters left over.

On Your Own

Complete.

4. Divide 14 pencils into 3 equal groups.

   There are _____ pencils in each group and _____ pencils left over.

5. Divide 60 pieces of chalk into groups of 8.

   There are _____ groups and _____ pieces of chalk left over.

Find the total number of objects.

6. There are 2 shoes in each of 6 groups and 1 shoe left over.

   There are _____ shoes in all.

7. There are 4 apples in each of 3 groups and 2 apples left over.

   There are _____ apples in all.

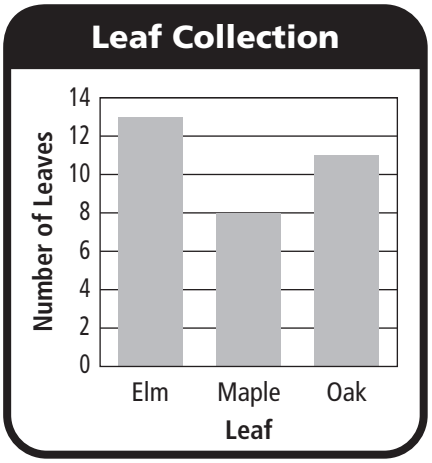
Problem Solving

Real World

Use the bar graph for 8.

8. If Hector divides the oak leaves evenly into 4 display boxes, how many leaves will be in each box? How many leaves will be left over?

   _____



Name _____

Use Models to Divide Tens and Ones

Essential Question How can you model division with a 2-digit quotient?

Unlock the Problem Real World

Emma baked 52 muffins. She wants to put an equal number of muffins on each of 4 trays. How many muffins can she put on each tray?

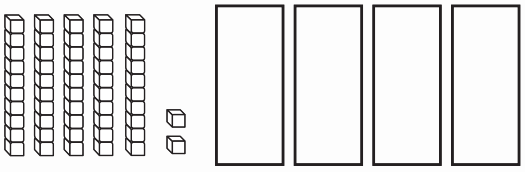
- Circle the numbers you need to use.
- How many equal groups are there?

_____

Find 52 ÷ 4.

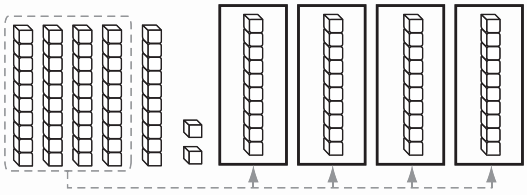
STEP 1

Use base-ten blocks to model the problem. Draw 4 rectangles to represent the 4 equal groups.



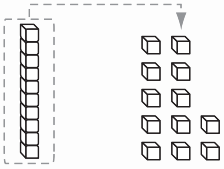
STEP 2

Share the tens. Place 1 ten in each group until there are not enough tens to put 1 more ten in each group.



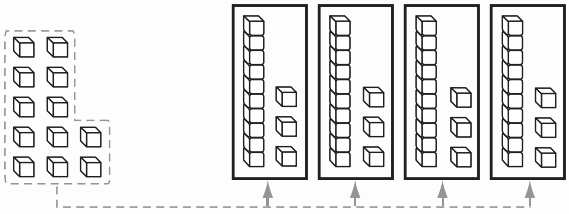
STEP 3

Regroup the remaining ten as ones. There are now 12 ones.



STEP 4

Share the ones. Place 1 one in each group until there are not enough ones to put 1 more one in each group.



So, Emma can put _____ muffins on each tray.

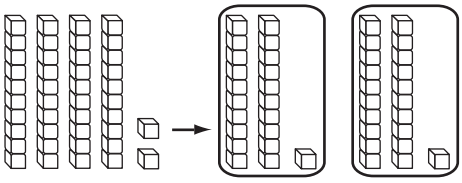
Math Talk Mathematical Practices

How you can check your answer.

Share and Show

MATH BOARD

1. Find 42 ÷ 2.



- How many equal groups are there? _____
- How many tens go in each group? _____
- How many ones go in each group? _____
- The quotient is _____.

Use base-ten blocks and your MathBoard to divide.

2. 65 ÷ 5 = _____

3. 90 ÷ 3 = _____

4. 88 ÷ 4 = _____

On Your Own

Use base-ten blocks and your MathBoard to divide.

5. 72 ÷ 2 = _____

6. 69 ÷ 3 = _____

7. 96 ÷ 6 = _____

Problem Solving

Real World

8. Roger has 84 trading cards. He wants to put an equal number in each of 3 boxes. How many cards will he put into each box?

_____

9. Riley has 78 postcards. She wants to put 6 on each poster board. How many poster boards will she need?

_____

Name _____

Checkpoint

Concepts and Skills

Find the product.

1. _____ $= 11 \times 5$

2. $12 \times 7 =$ _____

Find the unknown factor and quotient.

3. $4 \times \square = 44$ $\quad$ $44 \div 4 = \square$

$\square =$ _____ $\quad$ $\square =$ _____

4. Write the related multiplication and division equations for the numbers 5, 12, 60.

_____ _____ _____ _____

Use a basic fact and a pattern to find the products.

5. $3 \times 10 =$ _____

$3 \times 100 =$ _____

$3 \times 1{,}000 =$ _____

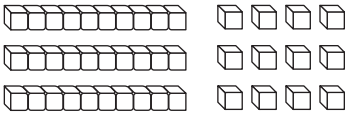
6. $10 \times 7 =$ _____

$100 \times 7 =$ _____

$1{,}000 \times 7 =$ _____

Find the product. Show your multiplication and division.

7.



$3 \times 14 = \square$

$3 \times 10 =$ _____ $\quad$ $3 \times 4 =$ _____

_____ + _____ = _____

$3 \times 14 =$ _____

Use base-ten blocks and your MathBoard to divide.

8. $132 \div 6 =$ _____

9. $160 \div 8 =$ _____

Problem Solving Real World

10. Jerry printed 48 photos. He gave 4 friends the same number of photos. How many photos did each friend receive?

_____

11. Tina divides 17 crayons into 3 equal groups. How many crayons will be in each group? How many crayons will be left over?

_____

Fill in the bubble for the correct answer choice.

12. Marita cuts 72 daisies to make bouquets. She makes 6 equal bouquets. How many daisies are in each bouquet?

Ⓐ 6 Ⓒ 8

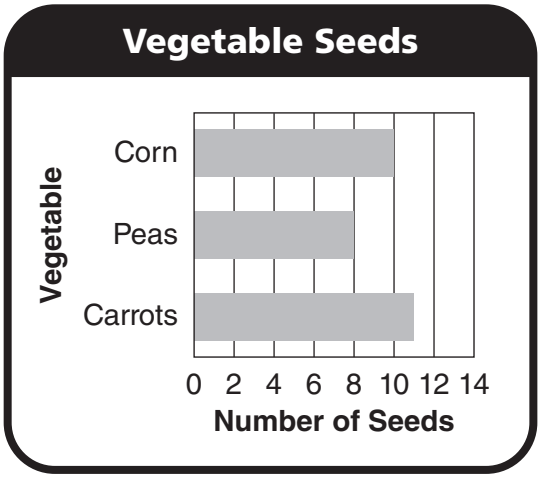
Ⓑ 7 Ⓓ 12

13. Christine charges $5 an hour to babysit. How much money does she earn in 16 hours?

Ⓐ $21 Ⓒ $64

Ⓑ $50 Ⓓ $80

14. Use the bar graph. Hector divides the carrot seeds evenly in 4 garden plots. How many carrot seeds will be left over?



Ⓐ 5

Ⓑ 4

Ⓒ 3

Ⓓ 2

15. Roberto has 39 model cars. He wants to display an equal number of model cars on each of 3 shelves. How many model cars will he put on each shelf?

Ⓐ 2 Ⓒ 13

Ⓑ 9 Ⓓ 39

Name _____

Model Tenths and Hundredths

Essential Question How can you model and write fractions in tenths and hundredths?

Unlock the Problem Real World

You can use models to represent fractions in tenths and hundredths.

- What do you need to find to write the fraction?

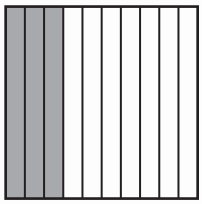
_____

Example

A

STEP 1

This model has 10 equal parts. Each part is one **tenth**.Shade three parts out of ten equal parts.



STEP 2

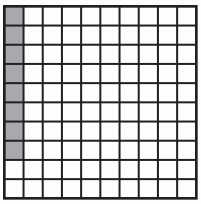
Write the fraction.
Think: Three tenths are shaded.

_____

B

STEP 1

This model has 100 equal parts. Each part is one **hundredth**.Shade eight of one hundred equal parts.



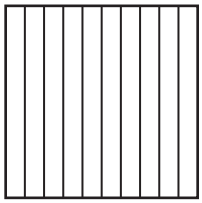
STEP 2

Write the fraction.
Think: Eight hundredths are shaded.

_____

Try This!

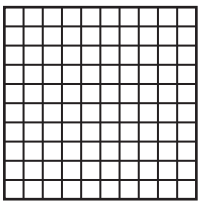
Shade the model to show nine of the ten equal parts.



Read: _____

Write: _____

Shade the model to show sixty-five of the hundred equal parts.



Math Talk Mathematical Practices

Which number in a fraction represents the number of parts being counted, and which represents the number of equal parts in the whole?

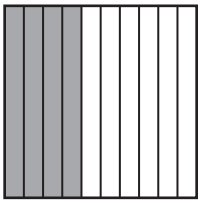
Read: _____

Write: _____

Share and Show

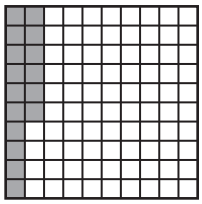
MATH BOARD

Write the fraction that names the shaded part.

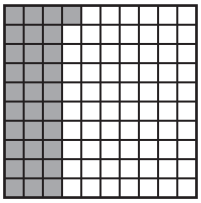
1. 

Think: How many equal parts are shaded?

_____

2. 

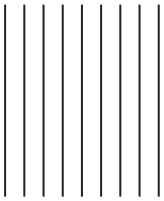
_____

3. 

_____

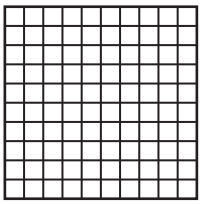
Shade to model the fraction. Then write the fraction in numbers.

4. three tenths



_____

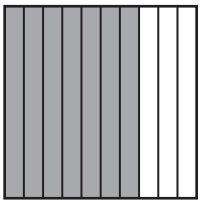
5. twenty-three hundredths



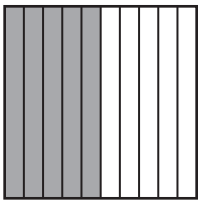
_____

On Your Own

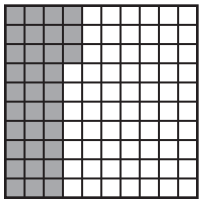
Write the fraction that names the shaded part.

6. 

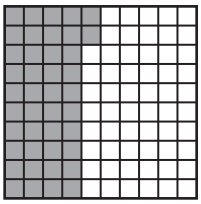
_____

7. 

_____

8. 

_____

9. 

_____

Problem Solving

Real World

10. Each player shot a basketball 10 times. Eric made 4 baskets. Write a fraction to represent the part of Eric's shots that were baskets.

_____

11. Nina asked 100 students if they have a pet. Of the students, $\frac{19}{100}$ have a cat. How many students have a cat?

_____

Name _____

Fractions Greater Than One

Essential Question When might you use a fraction greater than 1 or a mixed number?

Unlock the Problem Real World

Troy uses $\frac{1}{4}$ of a box of clay to make one model of a car. How many boxes of clay does he use to make 5 model cars?

- How much clay does Troy use to make each model car?

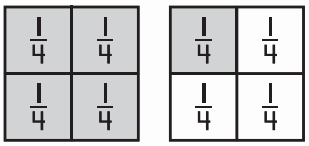
  _____

- How many model cars does Troy make?

  _____

Make a model.

- Draw squares divided into fourths to show the boxes of clay. Shade $\frac{1}{4}$ for the amount of clay Troy uses for each of the 5 model cars.
- Count the number of shaded parts. There are _____ shaded parts.
- Write the fraction.



Think: $\frac{4}{4} = 1$

One whole and one fourth are shaded.

Write: $1\frac{1}{4}$

$\frac{\square}{\square}$ shaded parts / parts in the whole

The number $\frac{5}{4}$ is a fraction greater than 1. A fraction greater than 1 can be written as a **mixed number**. A mixed number has a whole number and a fraction.

Read Math

Read $1\frac{1}{4}$ as *one and one fourth*.

So, Troy uses $\frac{5}{4}$ or $1\frac{1}{4}$ boxes of clay to make 5 model cars.

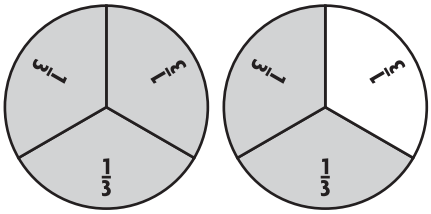
Math Talk Mathematical Practices

Why are $\frac{5}{4}$ and $1\frac{1}{4}$ equal?

Share and Show

MATH BOARD

1. Each fraction circle is 1 whole. Write a mixed number for the parts that are shaded.



There are _____ parts shaded.

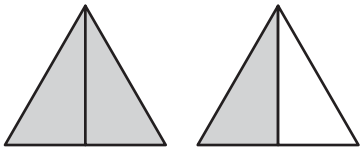
There are _____ equal parts in the whole.

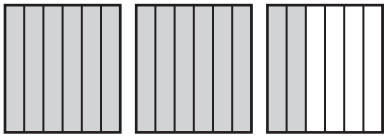
Fraction: $\frac{\square}{\square}$ shaded parts / parts in a whole

There is _____ whole shaded and _____ thirds shaded.

The mixed number is _____.

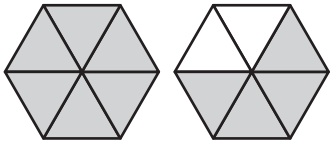
Each shape is 1 whole. Write a mixed number for the parts that are shaded.

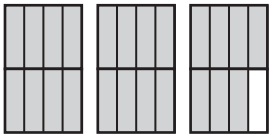
2.  _____

3.  _____

On Your Own

Each shape is 1 whole. Write a mixed number for the parts that are shaded.

4.  _____

5.  _____

Problem Solving

Real World

6. Luis played $\frac{6}{4}$ games of soccer this season. How can you write the number of games Luis played as a mixed number?

_____

7. Marci used $\frac{7}{3}$ packages of juice drinks. How can you write the number of packages of juice drinks Marci used as a mixed number?

_____

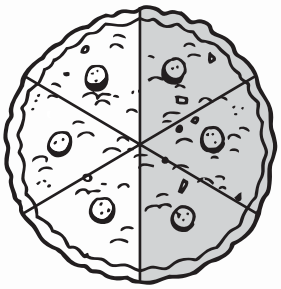
Name _____

Equivalent Fractions

Essential Question How can you use models to find equivalent fractions?

Unlock the Problem Real World

Bart brought an apple pie to the picnic. He cut the pie into 6 equal pieces and 3 pieces were eaten.



- What fraction names the amount of the pie that was eaten? _____
- What fraction names the amount of the pie that was left over? _____

Bart divided each of the leftover pieces into 2 equal pieces. Draw a dashed line on each piece to show how Bart divided it.

After you divide each sixth-size piece into 2 equal pieces, there will be 12 pieces in the whole pie. The pieces are called twelfths.

- What fraction names the total number of pieces Bart has left? _____

$\frac{\square}{6}$ and $\frac{\square}{12}$ are equivalent since they both name the same amount of the pie.

Math Talk Mathematical Practices

How do the size of the parts compare in the equivalent fractions? How do the number of parts compare?

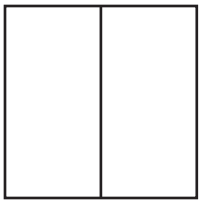
Share and Show

MATH BOARD

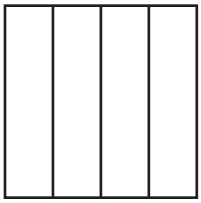
Use models to find the equivalent fraction.

1. $\frac{1}{2} = \frac{\square}{4}$

This model shows a whole divided into 2 equal parts. Shade the model to show the fraction $\frac{1}{2}$.



This model shows a whole divided into 4 equal parts. Shade the model to show a fraction equivalent to $\frac{1}{2}$.

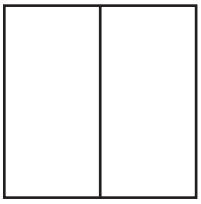


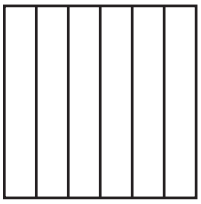
So, $\frac{\square}{2} = \frac{\square}{4}$.

On Your Own

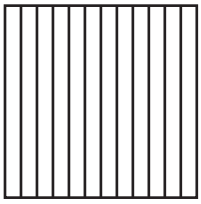
Use models to find the equivalent fraction.

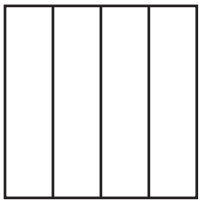
2. $\frac{1}{2} = \frac{\square}{6}$





3. $\frac{9}{12} = \frac{\square}{4}$





Problem Solving

Real World

4. A loaf of bread has 12 slices. Micky ate $\frac{1}{4}$ of the loaf. Write the fraction of the loaf Micky ate in twelfths.

_____

5. Sandra used $\frac{1}{4}$ of a meter of string to make a bracelet. Write the fraction of a meter of string Sandra used in eighths.

_____

Name _____

Equivalent Fractions on a Multiplication Table

Essential Question How can you generate equivalent fractions using a multiplication table?

CONNECT You can use a model to show the equivalent fractions $\frac{1}{2}$, $\frac{2}{4}$, and $\frac{3}{6}$.

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

Think: The same amount is shaded in the models; the second model and third model have more parts shaded.

Unlock the Problem Real World

You can use a multiplication table for other equivalent fractions for $\frac{1}{2}$.

- In a multiplication table, how are a product and the product below it related?

_____

_____

Activity What are some equivalent fractions for $\frac{1}{2}$?

Materials ■ multiplication table

- Shade the row for the numerator of the fraction $\frac{1}{2}$. The numerator is 1.
- Shade the row for the denominator of the fraction $\frac{1}{2}$. The denominator is 2.
- Look across the rows for numerator 1 and denominator 2.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

Write the products with the numerator 1 as a factor. Then write the products with the denominator 2 as a factor. The first three are done for you.

numerator ⟶ $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{\square}{8} = \frac{6}{\square}$

denominator ⟶

Math Talk Mathematical Practices

Why is the arrangement of factors and products in a multiplication table helpful in finding equivalent fractions?

- What do you notice about the products from the column for 1 to the column for 2?

  The numerator and denominator both increase by a factor of _____.

- What do you notice about the products from the column for 1 to the column for 3?

  The numerator and denominator both increase by a factor of _____.

- What do you notice about the products from the column for 1 to the column for 4?

  The numerator and denominator both increase by a factor of _____.

So, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, and $\frac{6}{12}$ are some equivalent fractions for $\frac{1}{2}$.

Math Idea

To find an equivalent fraction, you can multiply both the numerator and denominator by the same number.

Share and Show

MATH BOARD

Use a multiplication table to find equivalent fractions.

1. Write 3 equivalent fractions for $\frac{1}{3}$.

- Shade the row for the numerator of the fraction $\frac{1}{3}$. The numerator is _____.
- Shade the row for the denominator of the fraction $\frac{1}{3}$. The denominator is _____.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

- Look across the rows for numerator 1 and denominator 3.
  Write the products with the numerator 1 as a factor. Then write the products with the denominator 3 as a factor.

numerator ⟶
denominator ⟶ $\frac{1}{3} = \frac{\square}{6} = \frac{\square}{\square} = \frac{\square}{\square}$.

So, $\frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$

List 3 equivalent fractions.

2. $\frac{1}{6}$

_____

3. $\frac{1}{4}$

_____

On Your Own

Use a multiplication table to find three equivalent fractions.

4. $\frac{2}{5}$

_____

5. $\frac{3}{10}$

_____

Problem Solving

Real World

6. On Jan's soccer team, $\frac{1}{5}$ of the players are on the field. What are three equivalent fractions that name the part of the team on the field?

_____

7. Chen used $\frac{3}{4}$ of a carton of milk. What are three equivalent fractions that name the part of the carton of milk that Chen used?

_____

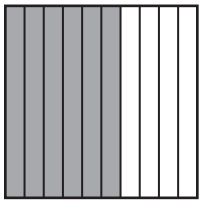
Name _____

Checkpoint

Concepts and Skills

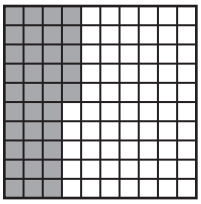
Write the fraction that names the shaded part.

1.



_____

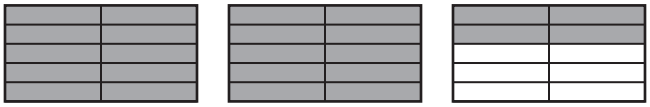
2.



_____

Each shape is 1 whole. Write a mixed number for the parts that are shaded.

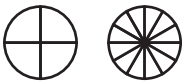
3.



_____

Use models to find the equivalent fraction.

4. $\frac{1}{4} = \frac{\square}{12}$



5. $\frac{5}{6} = \frac{\square}{12}$

Use a multiplication table to find three equivalent fractions.

6. $\frac{3}{4}$

_____

7. $\frac{4}{10}$

_____

Problem Solving Real World

8. Three friends shared 4 pies equally. Each person got $\frac{4}{3}$ pies. How can you write how much pie each person got as a mixed number?

_____

9. Bill bought a large submarine sandwich and cut it into 8 equal pieces. He ate $\frac{1}{4}$ of the sandwich. How can you write how much of the sandwich Bill ate as eighths?

_____

Fill in the bubble for the correct answer choice.

10. Each player hit a baseball 10 times. Linda batted 8 balls to the outfield. Write a fraction to show what part of 10 hits Linda batted to the outfield.

Ⓐ $\frac{18}{18}$

Ⓑ $\frac{10}{8}$

Ⓒ $\frac{9}{10}$

Ⓓ $\frac{8}{10}$

11. Vilma used $\frac{8}{3}$ packages of graham crackers to make piecrusts. How can you write the packages of crackers Vilma used as a mixed number?

Ⓐ $2\frac{1}{8}$

Ⓑ $2\frac{1}{3}$

Ⓒ $2\frac{2}{3}$

Ⓓ $3\frac{1}{3}$

12. Sam used $\frac{10}{12}$ of a meter of ribbon to decorate a picture frame. What fraction of a meter of ribbon, in sixths, did Sam use?

Ⓐ $\frac{2}{12}$

Ⓑ $\frac{5}{6}$

Ⓒ $\frac{6}{12}$

Ⓓ $\frac{12}{10}$

13. Leona used $\frac{3}{8}$ of a bottle of juice. Which is an equivalent fraction that names the part of the bottle of juice that Leona used?

Ⓐ $\frac{6}{16}$

Ⓑ $\frac{5}{8}$

Ⓒ $\frac{3}{4}$

Ⓓ $\frac{8}{3}$

Name _____

Same Size, Same Shape

Essential Question How can you identify shapes that have the same size and are shaped the same?

Unlock the Problem Real World

You can tell if two shapes have the same size and are shaped the same by comparing the matching parts of the shapes.

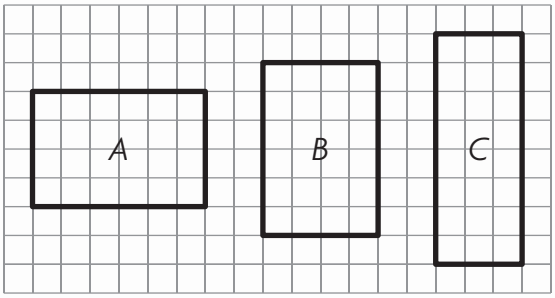
- What parts of the shapes do you need to compare?

_____

Activity Compare size and shape.

Materials ■ grid paper ■ scissors ■ ruler

STEP 1 Trace Shape *A* on grid paper. Cut out Shape *A*.



STEP 2 Move Shape *A* in any way to compare it to Shape *B*.

- Do the shapes match exactly? _____

Shape *A* and Shape *B* _____ the same size and _____ shaped the same.

STEP 3 Move Shape *A* in any way to compare it to Shape *C*.

- Do the shapes match exactly? _____

Shape *A* and Shape *C* _____ shaped the same.

Try This!

Since all the angles in Shapes *A* and *B* are the same, you can compare shapes by their matching sides.

The length of the shorter side of Shape *A* is _____ units.

The length of the shorter side of Shape *B* is _____ units.

The length of the longer side of Shape *A* is _____ units.

The length of the longer side of Shape *B* is _____ units.

So, Shape *A* and Shape *B* have the _____ size and are shaped the _____.

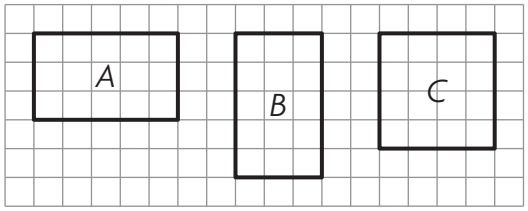
Math Talk Mathematical Practices

Explain how the size and shape of Shape A compares to the size and shape of Shape C.

Share and Show

MATH BOARD

1. Which shape appears to have the same size and the same shape as Shape *A*?



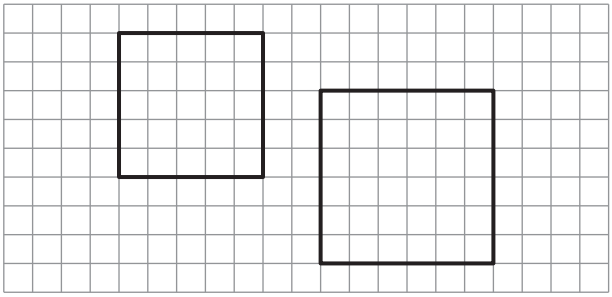
Think: If I trace Shape *A* and move it, which shape might it match exactly?

_____

On Your Own

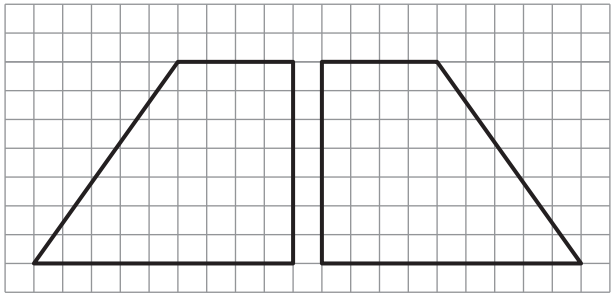
Look at the first shape. Tell if it appears to have the same size and shape as the second shape. Write *yes* or *no*.

2.



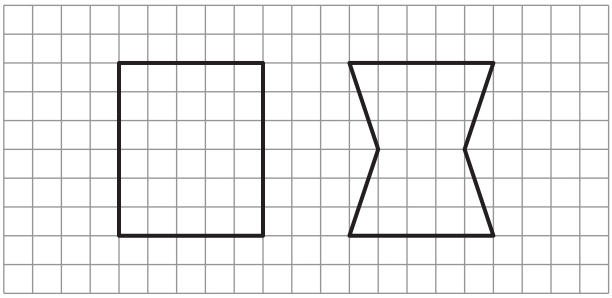
_____

3.



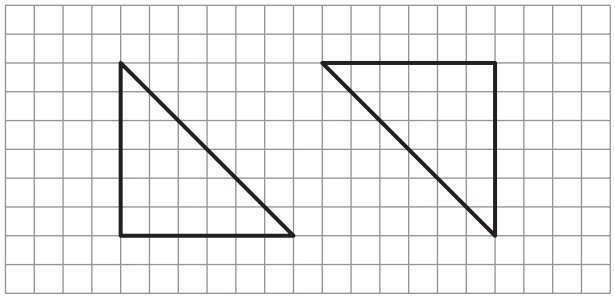
_____

4.



_____

5.



_____

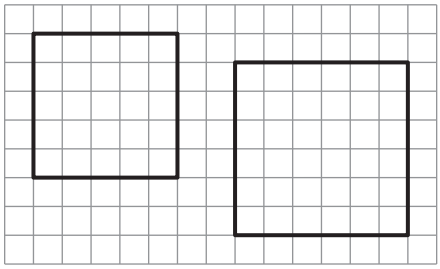
Problem Solving

Real World

6. Kyra says that these shapes have the same size and same shape. Is she correct? **Explain**.

_____

_____



Name _____

Change Customary Units of Length

Essential Question How can you change feet to inches?

Unlock the Problem Real World

You can use different units to name the same length.

Erin has a shelf that is 2 feet long. How many inches long is Erin's shelf?

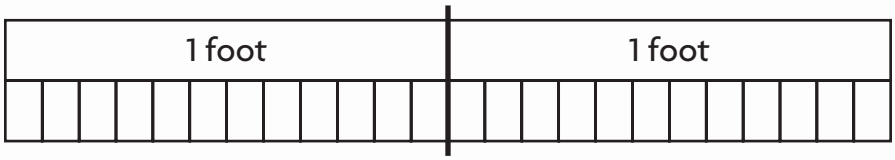
- What do you need to find?

_____

_____

One Way Draw a picture.

2 feet



Remember
1 foot = 12 inches

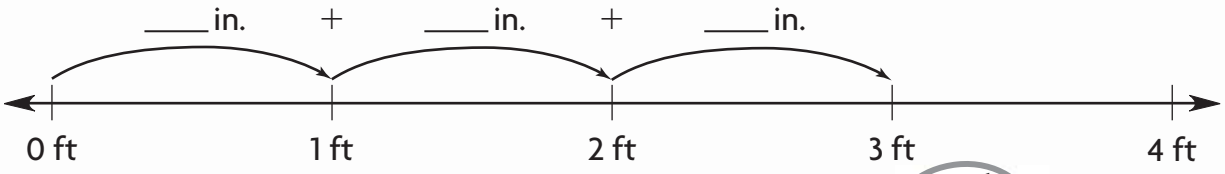
Draw one box to show each foot. Below each foot, draw 12 small boxes to show the number of inches in 1 foot. Count the total number of small boxes.

There are 24 small boxes in all. 2 feet = _____ inches.

So, Erin's shelf is _____ inches long.

Another Way Use a number line.

Erin has a table that is 3 feet long. How many inches long is her table? Draw a number line and label it in feet.



Draw a 12-inch jump for each foot. Add the lengths of the jumps to find the total number of inches.

3 feet = _____ inches.

So, Erin's table is _____ inches long.

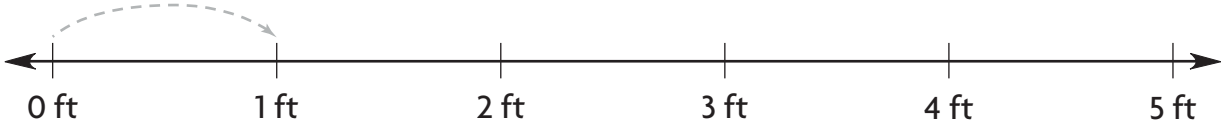
Math Talk Mathematical Practices

Why do you count by 12s when you rename feet as inches?

Share and Show

MATH BOARD

1. Use the number line. Rename 4 feet using inches.



4 feet = _____ inches

On Your Own

Draw a picture.

2. Rename 7 feet using inches.

7 feet = _____ inches

3. Rename 6 feet using inches.

6 feet = _____ inches

4. Use the number line. Rename 8 feet using inches.

8 feet = _____ inches

Problem Solving

Real World

5. Ella has a rope that is 10 feet long. How many inches long is the rope?

_____

6. Jose is 5 feet tall. How many inches tall is he?

_____

Name _____

Change Metric Units of Length

Essential Question How can you change meters to centimeters?

CONNECT You have learned to change feet to inches. In this lesson, you will change meters to centimeters.

Unlock the Problem (Real World)

Gina needs a piece of wood that is 4 meters long to make a bench. How many centimeters of wood does Gina need?

- What do you need to do to answer the question?

_____

Complete the table to show how the units are related.

STEP 1 Look for a pattern to complete the table. Describe the relationship.

Remember

1 meter = 100 centimeters

Meters	1	2	3	4	5
Centimeters	100	200	300	400	

To find the number of centimeters, add _____ centimeters for each meter.

STEP 2 Use the relationship to find the number of centimeters in 4 meters.

4 meters = _____ centimeters

So, Gina needs _____ centimeters of wood to make a bench.

Example

A. Change 6 meters to centimeters.

Add 100 to _____ centimeters.

So, 6 meters = _____ centimeters.

B. Change 8 meters to centimeters.

Multiply 100 centimeters by _____.

So, 8 meters = _____ centimeters.

Math Talk Mathematical Practices

What do you need to know in order to change from one unit of length to another?

Share and Show

MATH BOARD

1. How can you change 3 meters to centimeters?
Complete the table to show how the units are related.

Meters	1	2	3	4
Centimeters	100	200		400

To find the number of centimeters, add _____ centimeters for each meter.

So, 3 meters = _____ centimeters.

Find the unknown number.

2. 2 meters = _____ centimeters

3. 5 meters = _____ centimeters

On Your Own

Complete the table.

4.

Meters	3	4	5	6	7	8	9	10
Centimeters	300	400	500				900	

Find the unknown number.

5. 8 meters = _____ centimeters

6. 3 meters = _____ centimeters

Problem Solving Real World

7. Jorge needs 7 meters of wire for a garden fence. The wire is sold in centimeters. How many centimeters of wire does Jorge need?

_____

8. Wanda needs 9 meters of fabric to make curtains. She has 1,000 centimeters of fabric. Does Wanda have enough fabric to make the curtains? **Explain**.

_____

_____

Name _____

Estimate and Measure Liquid Volume

Essential Question How are cups, pints, quarts, and gallons related?

Unlock the Problem Real World

You can use customary units to measure the amount of liquid a container will hold. Some customary units are **cup (c)**, **pint (pt)**, **quart (qt)**, and **gallon (gal)**.

			
1 cup (c)	1 pint (pt)	1 quart (qt)	1 gallon (gal)

Activity Show how cups, pints, quarts, and gallons are related.

Materials ■ cup, pint, quart, gallon containers ■ water

STEP 1 Estimate the number of cups it will take to fill the pint container. Record your estimate in the table.

STEP 2 Fill a cup and pour it into the pint container. Repeat until the pint container is full. Record the number of cups it took to fill the pint container.

STEP 3 Repeat Steps 1 and 2 for the quart and gallon containers.

Number of Cups			
	Number of Cups in a Pint	Number of Cups in a Quart	Number of Cups in a Gallon
Estimate			
Liquid Volume			

Math Talk Mathematical Practices

Which unit would you use to measure the amount of water needed to fill an aquarium? **Explain** your choice.

Share and Show

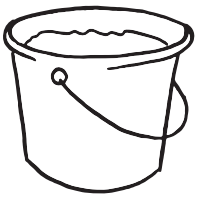
MATH BOARD

Choose the unit you would use to measure the amount of liquid the container will hold. Write *cup, pint, quart*, or *gallon*.

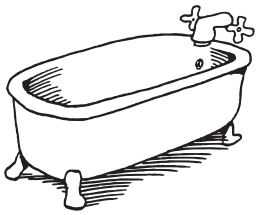
1. 

Think: A cup is small.

cup

2. 

bucket

3. 

bathtub

4. 

glass

On Your Own

Choose the unit you would use to measure the amount of liquid the container will hold. Choose the better unit of measure.

5. a dog's water bowl: 2 cups or 2 gallons

6. a juice box: 1 cup or 1 quart

Problem Solving

Real World

7. Lila made 3 quarts of lemonade. How many cups of lemonade did she make?

8. Richard made 2 gallons of fruit punch for a party. How many 1-cup servings can he make?

Name _____

Estimate and Measure Weight

Essential Question How are ounces and pounds related?

Unlock the Problem Real World

Weight is the measure of how heavy an object is. Customary units of weight include **ounce (oz)** and **pound (lb)**.

1 slice of bread weighs about 1 ounce.

1 loaf of bread weighs about 1 pound.

Customary Units of Weight

1 pound = 16 ounces

Activity Show how ounces and pounds are related.

Materials ■ spring scale ■ classroom objects

STEP 1 Estimate the weight of the object shown in the table. Record your estimate.

STEP 2 Use a scale to measure the weight of the object to the nearest ounce or pound. Record the weight.

STEP 3 Repeat Steps 1 and 2 for each object.

Remember

Include the unit when you record each estimate and measurement in your table.

Weight of Objects		
Object	Estimate	Weight
apple		
book		
pencil box		
tape dispenser		

Math Talk Mathematical Practices

How do your estimates compare to the actual weights?

Share and Show

MATH BOARD

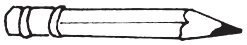
1. Which unit would you use to measure the weight of a grape? Write *ounce* or *pound*.

ounce

Think: A grape is a small, light object.

Choose the unit you would use to measure the weight. Write *ounce* or *pound*.

2. 

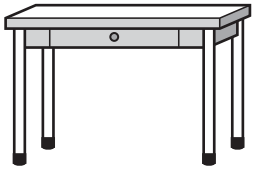
3. 

4 

On Your Own

Choose the unit you would use to measure the weight. Write *ounce* or *pound*.

5. 

6. 

7 

Problem Solving

Real World

8. Duane bought some oregano to use in a batch of pasta sauce. Which is a more likely weight for the oregano, 1 ounce or 1 pound?

9. Erin bought a bag of flour to use for baking dinner rolls. Did she buy 5 ounces of flour or 5 pounds of flour?

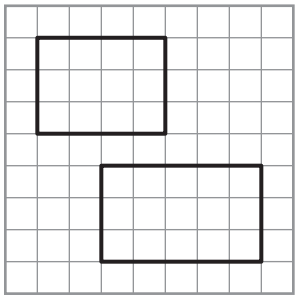
Name _____

Checkpoint

Concepts and Skills

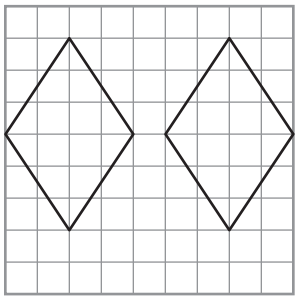
Look at the first shape. Tell if it appears to have the same size and shape as the second shape. Write *yes* or *no*.

1.



_____

2.



_____

3. Use the number line. Rename 5 feet using inches.

5 feet = _____ inches

Find the unknown number.

4. 6 meters = _____ centimeters

5. 8 meters = _____ centimeters

Choose the unit you would use to measure the amount of liquid the container will hold. Choose the better unit of measure.

6. a pitcher of iced tea: 1 cup or 1 gallon

Problem Solving Real World

7. A tea pot holds 4 quarts of tea. How many 1-cup servings of tea does it hold?

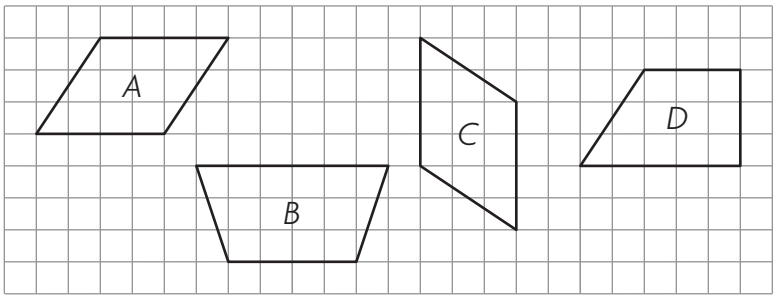
_____

8. Evan bought a large bag of dry dog food for his dog. Did Evan buy 6 ounces or 6 pounds of dog food?

_____

Fill in the bubble for the correct answer choice.

9. Which shapes appear to have the same size and shape?



Ⓐ *A* and *B* Ⓒ *B* and *D*

Ⓑ *B* and *C* Ⓓ *A* and *C*

10. Trey's desk is 3 feet wide. How many inches wide is the desk?

Ⓐ 3 inches Ⓒ 36 inches

Ⓑ 24 inches Ⓓ 48 inches

11. Juana needs 2 meters of yarn for a friendship bracelet. How many centimeters of yarn does she need?

Ⓐ 2,000 centimeters Ⓒ 20 centimeters

Ⓑ 200 centimeters Ⓓ 2 centimeters

12. Lana made 3 quarts of soup. How many pints of soup did she make?

Ⓐ 6 pints Ⓒ 18 pints

Ⓑ 12 pints Ⓓ 24 pints

13. Which object weighs about 1 ounce?

Ⓐ a loaf of bread Ⓒ a strawberry

Ⓑ a watermelon Ⓓ a chair

Name _____

Numbers to Ten Thousand

Complete the packing chart. Use the fewest packages possible. When there is a zero, use the next smaller size package.

	Number of Blocks Ordered	Crates (Ten Thousands)	Boxes (Thousands)	Cases (Hundreds)	Stacks (Tens)	Single Blocks (Ones)
1.	1,492	0	1	4	9	2
2.	3,016				1	
3.	2,804					
4.	4,675					
5.	1,727	0	0		2	7
6.	2,351		0		0	
7.	5,008		0		0	
8.	4,976		0		0	

Problem Solving Real World

9. A worker at the block factory packed blocks in 3 boxes of 1,000, 4 cases of 100, and 9 single blocks. How many blocks did the worker pack?

_____

_____

_____

10. Matt needs to pack an order for 1,816 blocks. How can Matt pack the blocks without using boxes of 1,000?

_____

_____

_____

Name _____

Read and Write Numbers to Ten Thousands

Write the number in standard form.

1. 2,000 + 600 + 30 + 5 2,635
2. five thousand, three hundred sixty _____
3. 8,000 + 800 + 90 + 9 _____
4. one thousand, fifty-one _____
5. three thousand, six hundred nine _____

Write the value of the underlined digit two ways.

6. 5,<u>8</u>96

   _____

7. 4,4<u>9</u>2

   _____

8. <u>1</u>,350

   _____

9. 3,<u>4</u>13

   _____

10. Rename 4,180 as hundreds and tens.

    _____ hundreds _____ tens

11. Rename 7,168 as tens and ones.

    _____ tens ___ ones

Problem Solving Real World

12. The population of a town is 4,951 people. What is the value of the digit 4 in the number?

    _____

13. The number of tourists who visited a national park in one day was nine thousand, four hundred twelve. Write this number in two other ways.

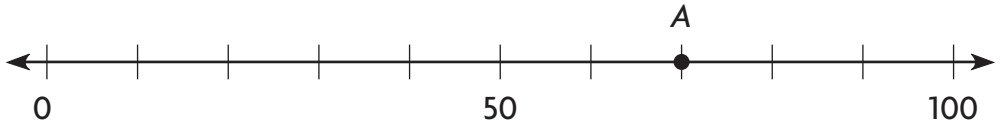
    _____

    _____

Name _____

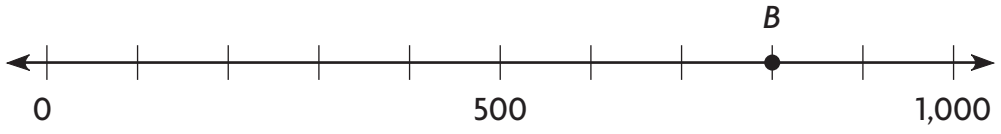
Relative Size on a Number Line

Find the number represented by the point.

1. 

7 tens is 70

70

2. 

_____

Problem Solving Real World

For 3–4, use the number line below.

Colin and Sophia score points in a game.
They show their score on a number line.

3. Colin's score is shown by point *D* on the number line. How many points has he scored?

_____

4. Sophia scored 3,000 points more than Colin. Draw a point on the number line to show Sophia's score. What is her score?

_____

_____

Name _____

Compare 3- and 4-Digit Numbers

Compare the numbers. Write <, >, or = in the ◯.

1. 576 > 567
2. 9,876 ◯ 9,886
3. 490 ◯ 409
4. 7,245 ◯ 7,245
5. 2,145 ◯ 2,245
6. 9,304 ◯ 9,034
7. 8,691 ◯ 8,691
8. 245 ◯ 254
9. 1,807 ◯ 807
10. 5,247 ◯ 5,247
11. 3,485 ◯ 3,548
12. 1,953 ◯ 9,351
13. 6,310 ◯ 6,310
14. 589 ◯ 5,890
15. 760 ◯ 1,760
16. 5,123 ◯ 5,321
17. 7,645 ◯ 7,546
18. 5,612 ◯ 5,622

Problem Solving Real World

19. On Saturday, 4,567 people saw the new animal movie. On Sunday, 4,078 people saw the movie. Use <, >, or = to compare the number of people who saw the movie on the two days.

_____

20. Captain Fry flies 1,764 miles. Captain Hale flies 764 miles. Who flies more miles?

_____

21. Adam says he is 1,352 millimeters tall. Bobby says that he is 1,452 millimeters tall. Who is shorter?

_____

Name _____

Multiply with 11 and 12

Find the product.

1. 99 $= 9 \times 11$

Think: $9 \times 10 = 90$ and

$9 \times 1 = 9$

So, $9 \times 11 = 90 + 9 = 99$.

2. $12 \times 9 =$ _____

3. _____ $= 1 \times 11$

4. $2 \times 11 =$ _____

5. _____ $= 12 \times 0$

6. _____ $= 5 \times 11$

7. _____ $= 7 \times 12$

8. $4 \times 11 =$ _____

9. _____ $= 12 \times 4$

10. $8 \times 11 =$ _____

11. _____ $= 3 \times 12$

12. _____ $= 9 \times 12$

Problem Solving Real World

Use the table for 13–14.

Supplies	
Item	Number in Each Pack
Pencils	12
Pens	8
Erasers	9

13. Mr. Wang buys 6 packs of pencils. How many pencils does Mr. Wang buy?

_____

14. Mr. Wang buys 12 packs of pens and 11 packs of erasers. Does Mr. Wang buy more pens or erasers? **Explain**.

_____

_____

_____

Name _____

Divide with 11 and 12

Find the unknown factor and quotient.

1. $11 \times ■ = 88$ $\quad$ $88 \div 11 = ■$

$■ =$ 8 $\quad$ $■ =$ 8

2. $11 \times ■ = 55$ $\quad$ $55 \div 11 = ■$

$■ =$ _____ $\quad$ $■ =$ _____

3. $12 \times p = 36$ $\quad$ $36 \div 12 = p$

$p =$ _____ $\quad$ $p =$ _____

4. $12 \times g = 84$ $\quad$ $84 \div 12 = g$

$g =$ _____ $\quad$ $g =$ _____

Find the quotient.

5. _____ $= 96 \div 8$

6. $44 \div 4 =$ _____

7. _____ $= 60 \div 5$

8. $55 \div 5 =$ _____

9. _____ $= 66 \div 6$

10. _____ $= 48 \div 4$

11. $72 \div 6 =$ _____

12. $88 \div 8 =$ _____

13. _____ $= 108 \div 9$

14. _____ $= 12 \div 1$

15. _____ $= 24 \div 2$

16. $33 \div 3 =$ _____

Compare. Write <, >, or = for each ◯.

17. $60 \div 12$ ◯ $55 \div 11$

18. $22 \div 2$ ◯ $48 \div 4$

19. $96 \div 8$ ◯ $84 \div 12$

Problem Solving Real World

20. Mrs. Green bought 72 pencils for her class. There were 12 pencils in each box. How many boxes of pencils did Mrs. Green buy?

_____

21. Henry baked 33 cookies. He put the same number of cookies in each of 11 bags. How many cookies did he put in each bag?

_____

Name _____

Multiplication and Division Relationships

Complete the related multiplication and division equations.

1. $4 \times 12 =$ 48
12 $\times 4 = 48$
$48 \div$ 4 $= 12$
48 $\div 12 = 4$

2. $5 \times$ _____ $= 55$
$11 \times 5 =$ _____
_____ $\div 5 = 11$
$55 \div$ _____ $= 5$

3. _____ $\times 12 = 72$
_____ $\times 6 = 72$
$72 \div$ _____ $= 12$
_____ $\div 12 = 6$

4. _____ $\times 11 = 88$
_____ $\times 8 = 88$
_____ $\div 8 = 11$
$88 \div$ _____ $= 8$

5. $3 \times$ _____ $= 36$
$12 \times$ _____ $= 36$
$36 \div 3 =$ _____
$36 \div 12 =$ _____

6. $4 \times 11 =$ _____
$11 \times$ _____ $= 44$
$44 \div$ _____ $= 11$
$44 \div 11 =$ _____

7. $8 \times 12 =$ _____
_____ $\times 8 = 96$
$96 \div$ _____ $= 12$
_____ $\div 12 = 8$

8. _____ $\times 11 = 22$
$11 \times 2 =$ _____
$22 \div$ _____ $= 11$
$22 \div 11 =$ _____

9. $1 \times$ _____ $= 12$
_____ $\times 1 = 12$
_____ $\div 1 = 12$
$12 \div$ _____ $= 1$

Problem Solving Real World

10. Lisa put 66 flowers in vases. She put the same number of flowers in each of 6 vases. How many flowers did Lisa put in each vase?

_____

11. Lisa used 84 flowers to make bouquets. She used 7 flowers in each bouquet. How many bouquets did Lisa make?

_____

Name _____

Use Multiplication Patterns

Use a basic fact and a pattern to find the products.

1. $3 \times 10 =$ 30
$3 \times 100 =$ 300
$3 \times 1{,}000 =$ 3,000

2. $10 \times 2 =$ _____
$100 \times 2 =$ _____
$1{,}000 \times 2 =$ _____

3. $8 \times 10 =$ _____
$8 \times 100 =$ _____
$8 \times 1{,}000 =$ _____

4. $10 \times 6 =$ _____
$100 \times 6 =$ _____
$1{,}000 \times 6 =$ _____

5. $5 \times 10 =$ _____
$5 \times 100 =$ _____
$5 \times 1{,}000 =$ _____

6. $10 \times 7 =$ _____
$100 \times 7 =$ _____
$1{,}000 \times 7 =$ _____

Find the product.

7. $10 \times 3 =$ _____

8. $9 \times 100 =$ _____

9. _____ $= 6 \times 100$

10. $1{,}000 \times 9 =$ _____

11. _____ $= 5 \times 10$

12. $4 \times 100 =$ _____

13. _____ $= 2 \times 10$

14. _____ $= 1{,}000 \times 1$

15. $7 \times 1{,}000 =$ _____

Problem Solving Real World

Use the picture graph for 16–17.

Rock Collections

Name	Number of Rocks
Eva	⬭ ⬭ ⬭ ⬭ ⬭ ⬭ ⬭
Tim	⬭ ⬭ ⬭ ⬭
Sam	

Key: Each ⬭ = 10 rocks.

16. How many rocks does Eva have? **Explain** how you found your answer.

_____

_____

17. Sam has 30 more rocks in his collection than Tim. Draw rocks in the picture graph to show the number of rocks in Sam's collection. **Explain** your answer.

_____

_____

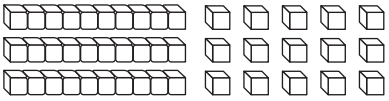
_____

Name _____

Use Models to Multiply Tens and Ones

Find the product. Show your multiplication and addition.

1.



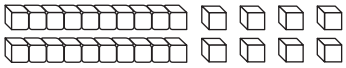
$3 \times 15 = \blacksquare$

$3 \times 10 = 30$

$3 \times 5 = 15$

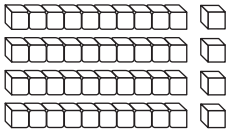
$30 + 15 = 45$

2.



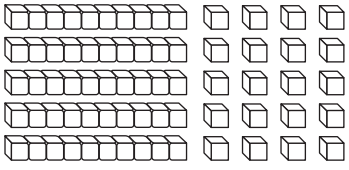
$2 \times 14 = \blacksquare$

3.



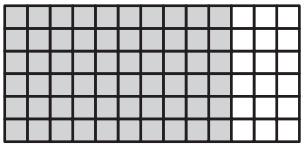
$4 \times 11 = \blacksquare$

4.



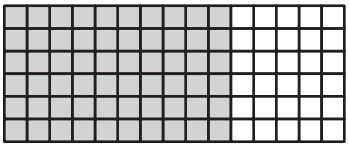
$5 \times 14 = \blacksquare$

5.



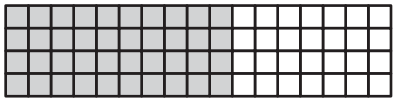
$6 \times 13 = \blacksquare$

6.



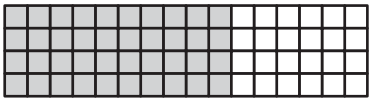
$6 \times 15 = \blacksquare$

7.



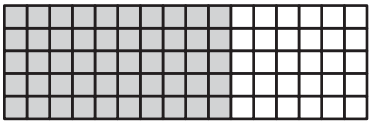
$4 \times 17 = \blacksquare$

8.



$4 \times 16 = \blacksquare$

9.



$5 \times 16 = \blacksquare$

Problem Solving Real World

10. Mia babysits for $4 an hour. How much money does she earn if she works for 12 hours?

_____

Name _____

Model Division with Remainders

Complete.

1. Divide 15 hats into 4 equal groups.

   There are 3 hats in each group and 3 hats left over.

2. Divide 50 forks into 6 equal groups.

   There are _____ forks in each group and _____ forks left over.

3. Divide 29 cookies into groups of 3.

   There are _____ groups and _____ cookies left over.

4. Divide 46 paper cups into groups of 5.

   There are _____ groups and _____ paper cup left over.

Find the total number of objects.

5. There are 8 books in each of 3 groups and 4 books left over.

   There are _____ books in all.

6. There are 7 muffins in each of 5 groups and 1 muffin left over.

   There are _____ muffins in all.

Problem Solving Real World

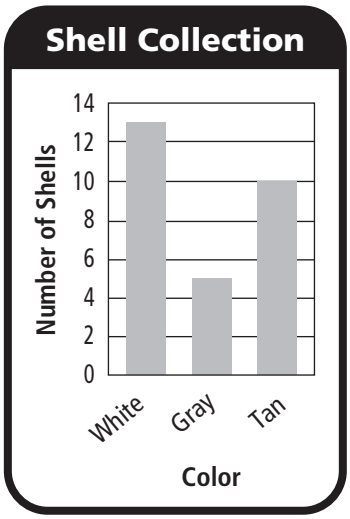
Use the bar graph for 7–8.

7. If Sarah divides the white shells evenly onto 2 shelves, how many shells will be on each shelf? How many shells will be left over?

   _____

8. If Sarah puts an equal number of tan shells into some boxes and has 1 shell left over, how many boxes will she use? How many shells will be in each box?

   _____

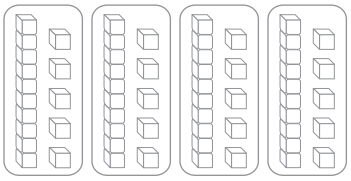


Name _____

Use Models to Divide Tens and Ones

Use base-ten blocks and your MathBoard to divide.

1. $60 \div 4 =$ 15



2. $65 \div 5 =$ _____

3. $54 \div 3 =$ _____

4. $90 \div 5 =$ _____

5. $74 \div 2 =$ _____

6. $98 \div 7 =$ _____

7. $75 \div 5 =$ _____

8. $60 \div 3 =$ _____

9. $78 \div 6 =$ _____

10. $84 \div 4 =$ _____

11. $96 \div 6 =$ _____

12. $95 \div 5 =$ _____

Problem Solving Real World

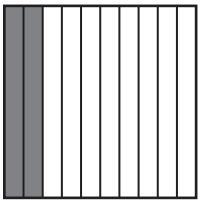
13. The third-grade students collected 90 cans of food for a food drive. They want to put an equal number of cans into each of 6 boxes. How many cans will they put into each box?

_____

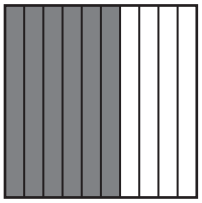
Name _____

Model Tenths and Hundredths

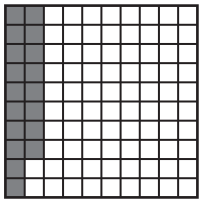
Write the fraction that names the shaded part.

1. 

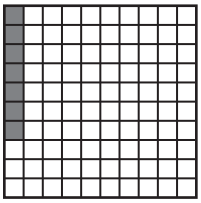
$\frac{2}{10}$

2. 

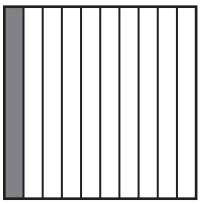
_____

3. 

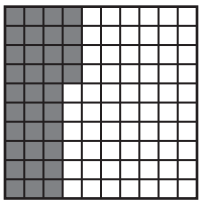
_____

4. 

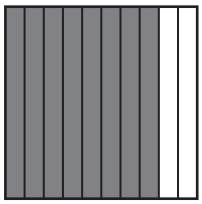
_____

5. 

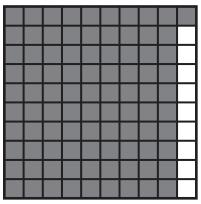
_____

6. 

_____

7. 

_____

8. 

_____

Problem Solving Real World

9. Pedro spins the pointer of a spinner 10 times. The pointer lands on the color blue 7 times. Write a fraction to represent the part of Pedro's spins that were blue.

_____

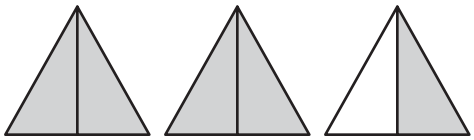
10. Anya asks 100 students if they walk to school. Of the students, $\frac{83}{100}$ say they walk to school. How many students walk to school?

_____

Name _____

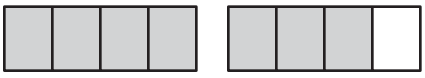
Fractions Greater Than One

Each shape is 1 whole. Write a mixed number for the parts that are shaded.

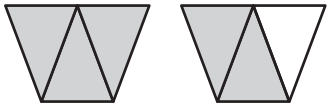
1. 

$2\frac{1}{2}$

_____

2. 

_____

3. 

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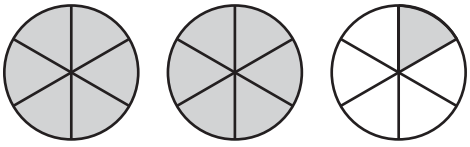
4. 

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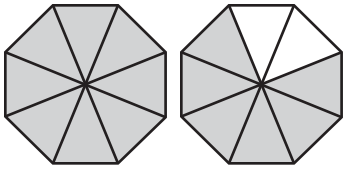
5. 

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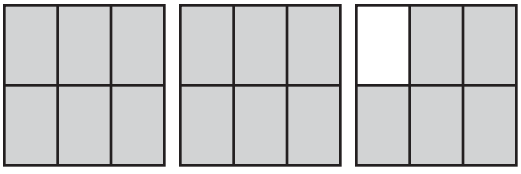
6. 

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Problem Solving Real World

7. Rachel and her friends eat $\frac{5}{4}$ pizzas. How can you write the amount of pizza they ate as a mixed number?

_____

8. Ms. Fuller has $\frac{8}{3}$ pies left over from her party. How can you write the number of pies she has left over as a mixed number?

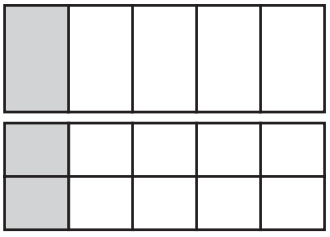
_____

Name _____

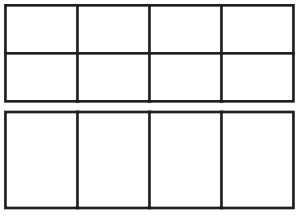
Equivalent Fractions

Use models to find the equivalent fraction.

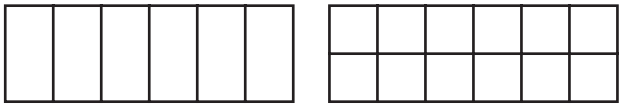
1. $\frac{1}{5} = \frac{2}{10}$



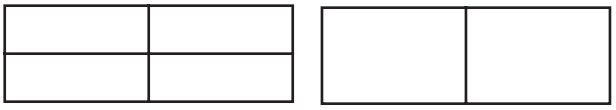
2. $\frac{2}{8} = \frac{\quad}{4}$



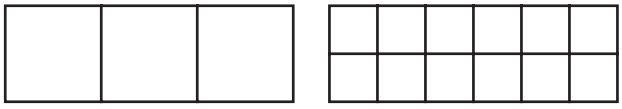
3. $\frac{1}{6} = \frac{\quad}{12}$



4. $\frac{2}{4} = \frac{\quad}{2}$

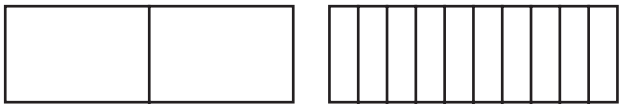


5. $\frac{1}{3} = \frac{\quad}{12}$

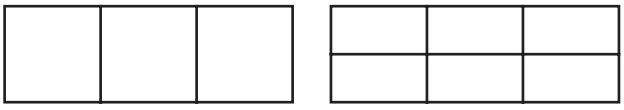


6. $\frac{3}{6} = \frac{\quad}{12}$

7. $\frac{1}{2} = \frac{\quad}{10}$



8. $\frac{2}{3} = \frac{\quad}{6}$



Problem Solving Real World

9. Jamie uses $\frac{1}{3}$ of a package of juice boxes. There were 6 juice boxes in the package to start with. Write the fraction of the package Jamie used in sixths.

_____

10. Luis colors $\frac{1}{4}$ of a spinner using a red crayon. Write the fraction of the spinner Luis colored red in twelfths.

_____

Name _____

Equivalent Fractions on a Multiplication Table

Use a multiplication table to find three equivalent fractions.

1. $\frac{1}{2}$

   $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}$

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

3. $\frac{1}{10}$ _____

4. $\frac{2}{3}$ _____

5. $\frac{2}{8}$ _____

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

7. $\frac{3}{10}$ _____

8. $\frac{5}{6}$ _____

Problem Solving Real World

9. Nicki eats $\frac{1}{4}$ of a cereal bar. What are three equivalent fractions that name the part of the cereal bar that Nicki eats?

   _____

10. In a crate of apples, $\frac{3}{5}$ of the apples are green apples. What are three equivalent fractions that name the part of the apples in the crate that are green?

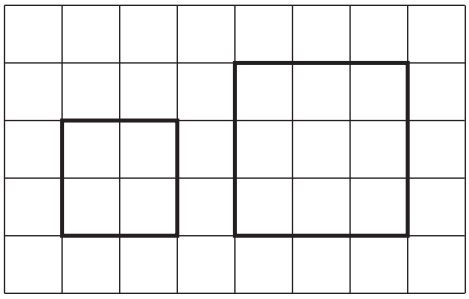
    _____

Name _____

Same Size, Same Shape

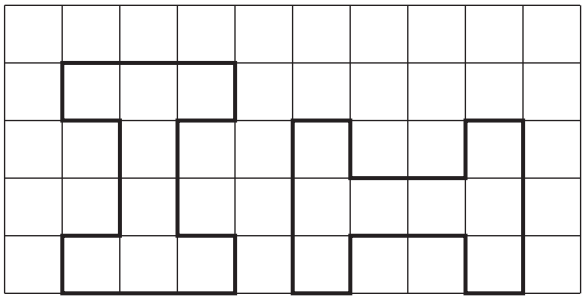
Look at the first shape. Tell if it appears to have the same size and shape as the second shape. Write *yes* or *no*.

1.



no

2.



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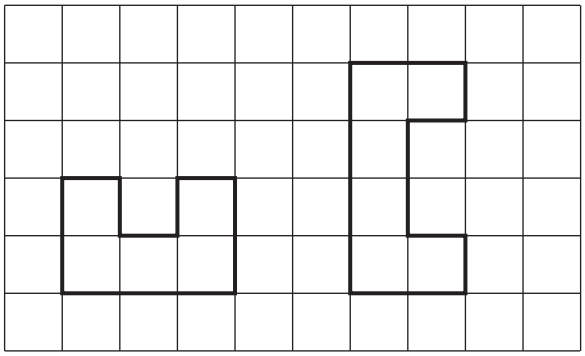
3.



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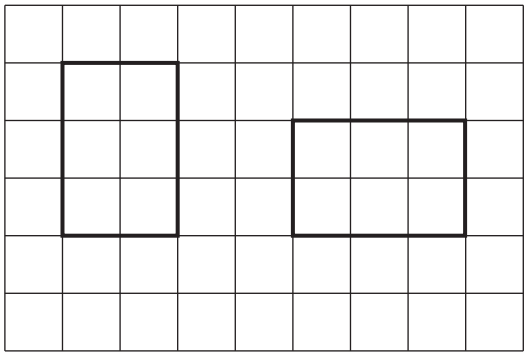
4.



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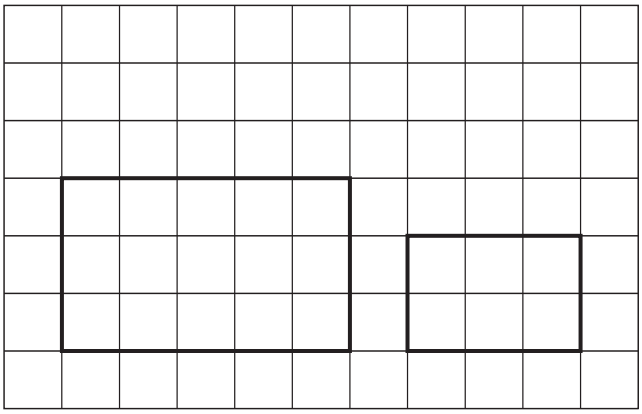
Problem Solving Real World

5. Juanita draws the rectangles shown. Do the rectangles have the same size and are they shaped the same? **Explain.**



_____

_____

_____

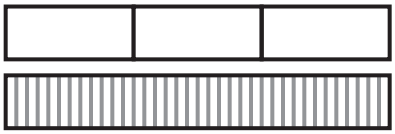
_____

Name _____

Change Customary Units of Length

Draw a picture.

1. Rename 3 feet using inches.



3 feet = 36 inches

2. Rename 5 feet using inches.

5 feet = _____ inches

3. Draw a number line. Rename 8 feet using inches.

8 feet = _____ inches

4. Use the number line. Rename 9 feet using inches.

9 feet = _____ inches

Problem Solving Real World

5. Robbie has a piece of rope that is 6 feet long. How many inches long is the rope?

_____

6. A fence is 4 feet tall. How many inches tall is the fence?

_____

Name _____

Change Units for Length

Complete the table.

1.

Meters	1	2	3	4	5
Centimeters	100	200	300	400	500

Think: To find the number of centimeters, add 100 centimeters for each meter.

2.

Meters	6	7		9	
Centimeters	600	700	800		

Find the unknown number.

3. 1 meter = _____ centimeters

4. 5 meters = _____ centimeters

5. 4 meters = _____ centimeters

6. 8 meters = _____ centimeters

7. 3 meters = _____ centimeters

8. 7 meters = _____ centimeters

9. 2 meters = _____ centimeters

10. 6 meters = _____ centimeters

11. 9 meters = _____ centimeters

12. 10 meters = _____centimeters

Problem Solving Real World

13. Ben paints 5 meters of fence before stopping for lunch. Then he paints 3 more meters of fence. How many centimeters of fence does Ben paint in all?

_____

14. Dana needs 6 meters of ribbon to make bows. She has 160 centimeters of ribbon. Does Dana have enough ribbon to make the bows? **Explain**.

_____

_____

Name _____

Estimate and Measure Liquid Volume

Choose the unit you would use to measure the amount of liquid the container will hold. Choose the better unit of measure.

1. a bath tub: 40 cups or 40 gallons

2. a drinking mug: 1 cup or 1 quart

3. a soup bowl: 2 cups or 2 quarts

4. a water bucket: 1 cup or 1 gallon

Problem Solving Real World

5. Jay made 4 quarts of fruit juice. How many cups of fruit juice did he make?

_____

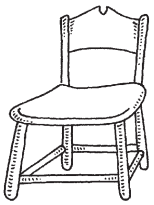
6. Vanessa will pour 2 gallons of milk into cups. How many cups will she fill?

_____

Name _____

Estimate and Measure Weight

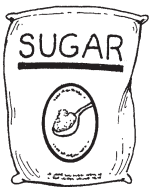
Choose the unit you would use to measure the weight.
Write *ounce* or *pound*.

1. 

pound

2. 

3. 

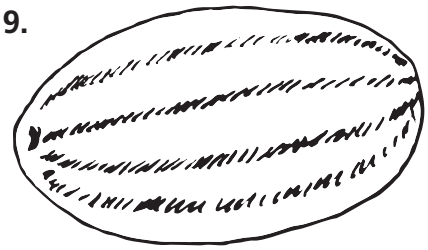
4. 

5. 

6. 

7. 

8. 

9. 

Problem Solving Real World

10. Scott picks some apples to use for a batch of applesauce. Which is a more likely weight for the apples he picks, 5 ounces or 5 pounds?

_____

11. Ms. Mott measures some sugar to make muffins. Does the sugar weigh 4 ounces or 4 pounds?

_____