Name _____

Numbers to Ten Thousand

The block factory puts a packing list in each order. Complete the chart. Use the fewest packages possible.

Number of Blocks Shipped	**Crates** (Ten Thousands)	**Boxes** (Thousands)	**Cases** (Hundreds)	**Stacks** (Tens)	**Single Blocks** (Ones)
1,000	0	1	0	0	0
3,700	0	3	7	0	0

Suppose the factory has no boxes? How can it pack the order for 1,000 blocks?

Think: 1 thousand = 10 hundreds

10 cases

Suppose the factory has only boxes and stacks. How can it pack the order for 3,700 blocks?

Think: 7 hundreds = 70 tens

3 boxes 70 stacks

1. The block factory has an order for 2,410 blocks. How can it pack the order using the fewest packages?

_____

2. What is one way you can pack 2,410 blocks without using boxes?

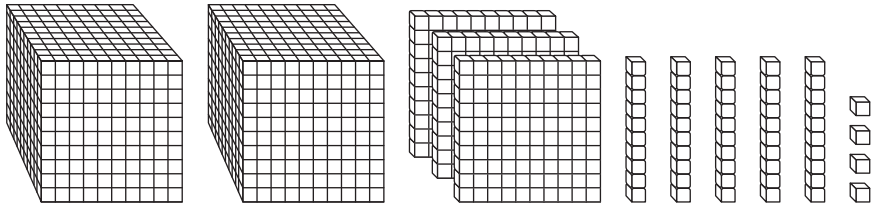
_____

3. Suppose the block factory has only boxes and stacks. How can it pack the order for 2,410 blocks?

_____

Name _____

Read and Write Numbers to Ten Thousands



Ten Thousands	Thousands	Hundreds	Tens	Ones
	2,	3	5	4

Standard form is a way to write numbers using digits.

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

2 thousands	3 hundreds	5 tens	4 ones
2,000	300	50	4

2,000 + 300 + 50 + 4

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

two thousand, three hundred fifty-four

Think: 2 thousands 3 hundreds 5 tens 4 ones. So, the standard form is written 2,354.

Write the number shown in expanded form.

1.

Ten Thousands	Thousands	Hundreds	Tens	Ones
	1,	8	9	4

_____ + 800 + 90 + _____

Write the number in standard form.

2. 8,000 + 500 + 30 + 4 _____

3. five thousand, seven hundred sixty-two _____

Write the value of the underlined digit two ways.

4. 7,318

5. 1,095

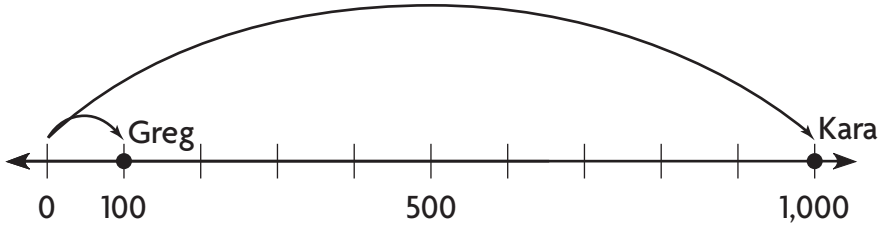
_____ _____

Name _____

Relative Size on a Number Line

Greg has 100 marbles. Kara has 1,000 marbles. How do their amounts of marbles compare?

Use a number line to compare the amounts.

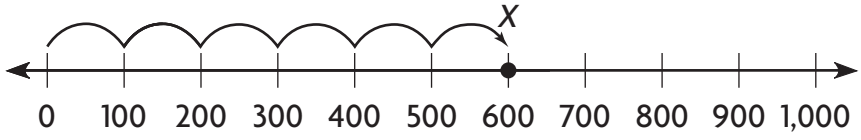


Think: 10 hundreds is 1,000.

So, Kara has **10** times as many marbles as Greg.

Find the number represented by the point *X* on the number line.

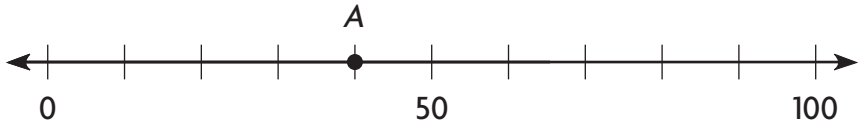
Start at 0. Skip count by 100s until you reach point *X*.



So, point *X* represents **600**.

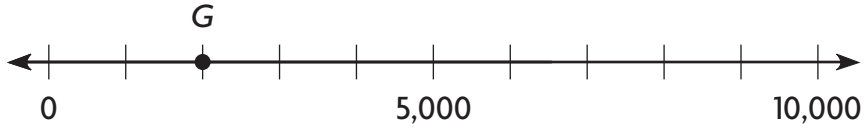
Find the number represented by the point.

1.



_____

2.



_____

Name _____

Compare 3- and 4-Digit Numbers

You can use symbols to show how two numbers compare.

Symbol	Meaning
>	is greater than
<	is less than
=	is equal to

Compare the numbers.

8,526 ● 8,601

Use a place-value chart to help you compare.

Step 1 For each number, write the digits in a place-value chart.

THOUSANDS	HUNDREDS	TENS	ONES
8,	5	2	6
8,	6	0	1

Step 2 Compare digits in the same place-value position, starting from the left. Compare until you find digits that are different.

THOUSANDS	HUNDREDS	TENS	ONES
8,	5	2	6
8,	6	0	1

$8 = 8$ $5 < 6$

Step 3 The thousands are the same, so compare the hundreds. Since 5 hundreds $<$ 6 hundreds, 8,526 $<$ 8,601.

So, 8,526 $<$ 8,601.

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

1. 519 ◯ 591

2. 6,883 ◯ 6,883

3. 4,709 ◯ 4,079

4. 687 ◯ 678

5. 8,141 ◯ 8,411

6. 9,989 ◯ 9,987

Name _____

Multiply with 11 and 12

You can use tens and ones to help multiply with 11 and 12.

Multiply. $3 \times 12 = \blacksquare$

Step 1

Break apart 12 into tens and ones.

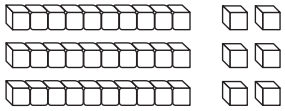
3×12

↑

$12 = 1$ ten 2 ones

Step 2

Make a model.
Show the tens and ones.



3 rows of 1 ten 2 ones

Step 3

Multiply the tens. Multiply the ones.

$3 \times 10 = 30$ $3 \times 2 = 6$

Step 4

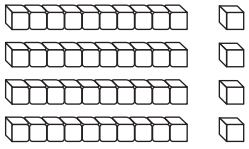
Add the products.

$30 + 6 = 36$

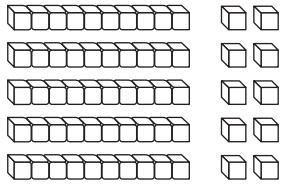
So, $3 \times 12 = 36$.

Find the product.

1. $4 \times 11 =$ _____



2. $5 \times 12 =$ _____



3. $4 \times 12 =$ _____

4. $6 \times 11 =$ _____

5. $3 \times 11 =$ _____

6. $6 \times 12 =$ _____

7. $8 \times 12 =$ _____

8. $7 \times 11 =$ _____

Name _____

Divide with 11 and 12

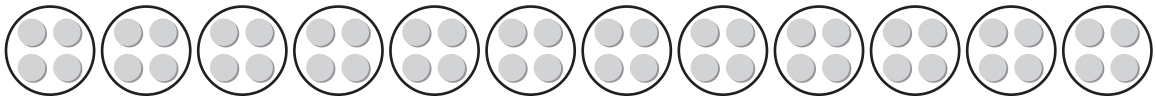
You can use models and related multiplication facts to divide with 11 and 12.

Elsa has 48 tomatoes. She puts the same number of tomatoes on each of 12 plates. How many tomatoes are on each plate?

Divide. 48 ÷ 12 = ▢

Step 1 Use 48 counters to represent the tomatoes. Draw 12 circles for the 12 plates.

Place one counter in each group until all the counters are used.



1 counter on each plate $12 \times 1 = 12$

2 counters on each plate $12 \times 2 = 24$

3 counters on each plate $12 \times 3 = 36$

4 counters on each plate $12 \times 4 = 48$

Step 2 Record your answer.

$48 \div 12 = 4$

So, there are 4 tomatoes on each plate.

You can write a related multiplication fact.

Think: There are 12 groups of 4.

$12 \times 4 = 48$

Find the unknown factor and quotient.

1. $11 \times \_\_\_ = 44$ $44 \div 11 = \_\_\_$

2. $12 \times \_\_\_ = 36$ $36 \div 12 = \_\_\_$

3. $12 \times \_\_\_ = 72$ $72 \div 12 = \_\_\_$

4. $11 \times \_\_\_ = 99$ $99 \div 11 = \_\_\_$

Name _____

Algebra • Multiplication and Division Relationships

Multiplication and division are inverse operations. You can use a multiplication table to help you write related multiplication and division equations.

Write the related multiplication and division equations for the numbers 3, 12, and 36.

Step 1 Find the multiplication equations.

- Find the factor 3 in the left column of the multiplication table.
- Look right to find the product, 36. Look up to find the factor 12.

  So, 3 × 12 = 36.
- Find the factor 12 in the left column. Look right to find the product, 36. Look up to find the factor 3.

  So, 12 × 3 = 36.

×	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

Step 2 Use the multiplication equations to write the related division equations.

36 ÷ 3 = 12 36 ÷ 12 = 3

Complete the related multiplication and division equations.

1. _____ × 12 = 24

12 × 2 = _____

_____ ÷ 2 = 12

24 ÷ _____ = 2

2. 9 × _____ = 108

_____ × 9 = 108

108 ÷ 9 = _____

_____ ÷ 12 = 9

3. 5 × 11 = _____

11 × _____ = 55

55 ÷ _____ = 11

_____ ÷ 11 = 5

Use Multiplication Patterns

You can use a basic fact and a pattern to multiply with 10, 100, or 1,000.

Find 6 × 1,000.

	Factors	Product
Step 1 Start with the basic fact.	6 × 1	= 6
Step 2 Multiply with 10. **Think:** 6 × 1 ten = 6 tens	6 × 1**0**	= 6**0**
Step 3 Multiply with 100. **Think:** 6 × 1 hundred = 6 hundreds	6 × 1**00**	= 6**00**
Step 4 Multiply with 1,000. **Think:** 6 × 1 thousand = 6 thousands	6 × 1,**000**	= 6,**000**

Look at the pattern of zeros. The number of zeros in the product increases as the number of zeros in a factor increases.

So, 6 × 1,000 = **6,000**.

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

1. 1 × 1 = _____
1 × 10 = _____
1 × 100 = _____
1 × 1,000 = _____

2. 9 × 1 = _____
9 × 10 = _____
9 × 100 = _____
9 × 1,000 = _____

3. 7 × 1 = _____
7 × 10 = _____
7 × 100 = _____
7 × 1,000 = _____

4. 5 × 1 = _____
5 × 10 = _____
5 × 100 = _____
5 × 1,000 = _____

5. 3 × 1 = _____
3 × 10 = _____
3 × 100 = _____
3 × 1,000 = _____

6. 8 × 1 = _____
8 × 10 = _____
8 × 100 = _____
8 × 1,000 = _____

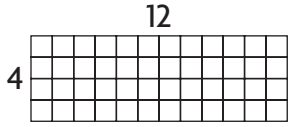
Name _____

Use Models to Multiply Tens and Ones

You can use an area model to model multiplication with a 2-digit factor.

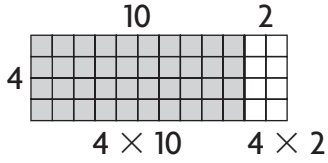
Multiply. 4 × 12 = ■

Step 1 Use an area model. Draw a rectangle with 4 rows of 12 to model 4 × 12.



Step 2 Use facts that you already know to make two smaller rectangles.

Think: I know 4 × 10 and 4 × 2.



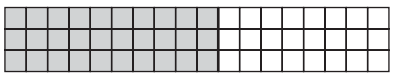
Step 3 Find the products for the smaller rectangles.
4 × 10 = **40** 4 × 2 = **8**

Step 4 Add the products.
40 + 8 = **48**

So, 4 × 12 = **48**.

Find the product. Show your multiplication and addition.

1.



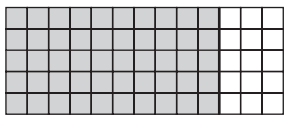
3 × 18 = ■

_____

_____

_____

2.



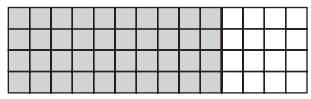
5 × 13 = ■

_____

_____

_____

3.



4 × 14 = ■

_____

_____

_____

Name _____

Model Division with Remainders

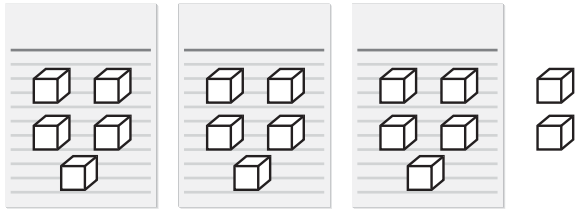
You can use cubes to model division with remainders.

Paul has 17 toy cars. He wants to put an equal number of cars on each of 3 shelves. How many cars can Paul put on each shelf? How many cars are left over?

Divide. 17 ÷ 3

Step 1 Use 17 cubes to stand for the cars. Use 3 sheets of paper to show the shelves.

Step 2 Place one cube at a time on each sheet of paper until there are not enough to put 1 more in each of the groups.



There are 5 cubes in each of the 3 groups.

There are 2 cubes left over. The **remainder** is 2.

So, Paul can put 5 toy cars on each shelf with 2 cars left over.

Complete.

1. Norah divided 19 cubes into 3 equal groups.

   There were ____ cubes in each group and ____ cube left over.

2. Evan divided 28 cubes into 5 equal groups.

   There were ____ cubes in each group and ____ cubes left over.

3. Divide 22 crayons into groups of 6.

   There are ____ groups and ____ crayons left over.

4. Divide 34 rocks into groups of 8.

   There are ____ groups and ____ rocks left over.

Name _____

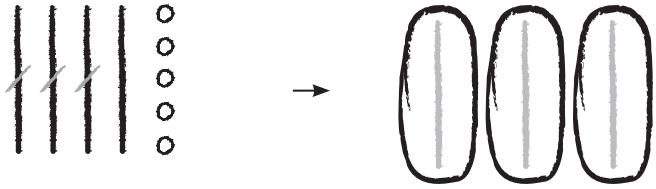
Use Models to Divide Tens and Ones

You can use quick pictures to help you divide.

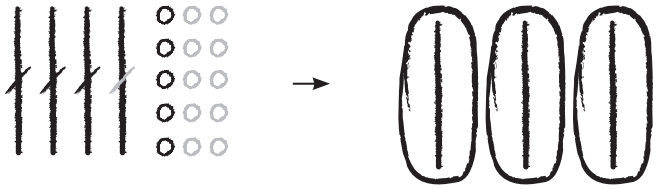
Find 45 ÷ 3

Step 1 Draw a quick picture to show 45 as 4 tens 5 ones. Draw 3 circles to represent equal groups.

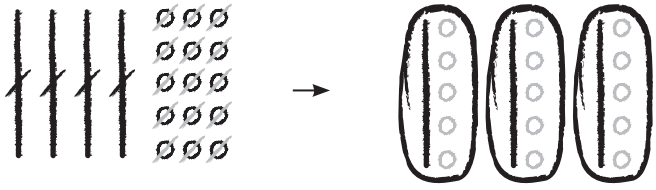
Step 2 Share the 4 tens equally among 3 groups. Cross out the tens you use.



Step 3 Regroup the remaining ten by drawing 10 ones. Cross out the ten you regrouped.



Step 4 Share the 15 ones equally among 3 groups. Cross out the ones you use.



So, 45 ÷ 3 = 15.

Draw a quick picture to divide.

1. 52 ÷ 4 = ___

2. 60 ÷ 2 = ___

3. 98 ÷ 7 = ___

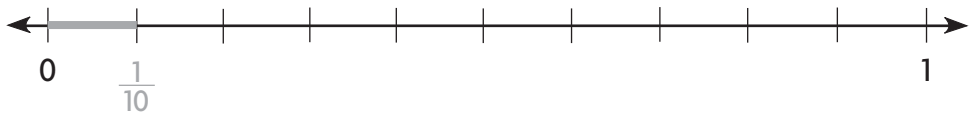
Name _____

Model Tenths and Hundredths

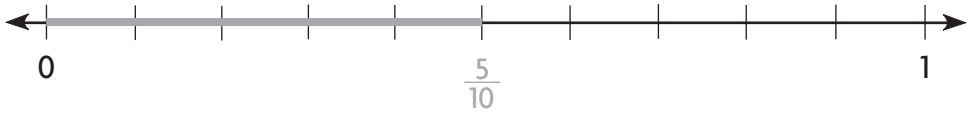
You can use a number line to show tenths and hundredths.

The number line is divided into 10 equal parts, or tenths.

Shade 1 part out of 10 equal parts to show 1 tenth.

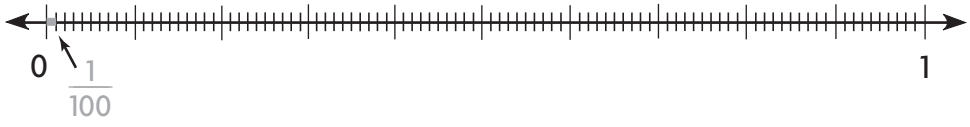


Show five tenths. Write the fraction. **Think:** $\frac{\text{5 equal parts shaded}}{\text{10 equal parts in the whole}}$

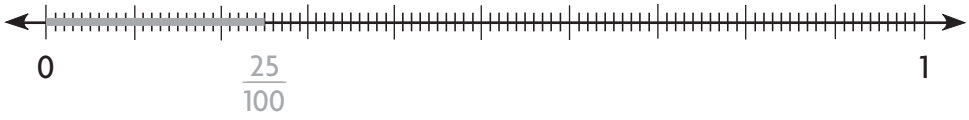


The number line is divided into 100 equal parts, or hundredths.

Shade 1 part out of 100 equal parts to show 1 hundredth.



Show 25 hundredths. Write the fraction. **Think:** $\frac{\text{25 equal parts shaded}}{\text{100 equal parts in the whole}}$



Write the fraction that names the shaded part.

1. _____ **Think:** How many equal parts are shaded?

2. _____

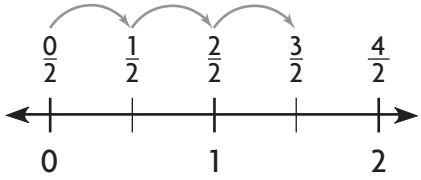
Name _____

Fractions Greater Than One

A fraction greater than 1 has a numerator that is greater than its denominator. A **mixed number** has a whole-number and a fraction.

Use the number line to write the fraction greater than 1 as a mixed number. $\frac{3}{2} =$ **?**

Step 1 Start at 0 and make 3 jumps of $\frac{1}{2}$.

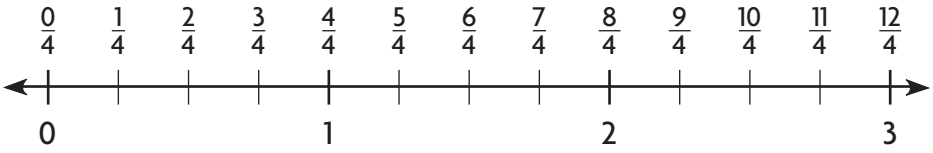


Step 2 Find the last whole number you jumped past. 1
Then find how much of the distance to the next whole number you jumped. $\frac{1}{2}$
So, three jumps of $\frac{1}{2}$ on the number line is 1 whole and $\frac{1}{2}$.

You can say the jumps end at $\frac{3}{2}$ or $1\frac{1}{2}$ on the number line.

So, $\frac{3}{2} = 1\frac{1}{2}$.

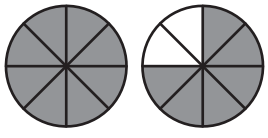
Use the number line for 1–4. Write a mixed number for each fraction greater than 1.



1. $\frac{6}{4}$ _____ **2.** $\frac{11}{4}$ _____ **3.** $\frac{10}{4}$ _____ **4.** $\frac{7}{4}$ _____

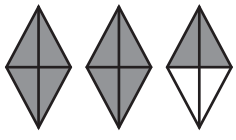
Each shape is 1 whole. Write a mixed number for the parts that are shaded.

5.



_____

6.



_____

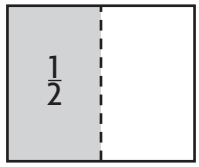
Name _____

Equivalent Fractions

You can use models to find equivalent fractions.

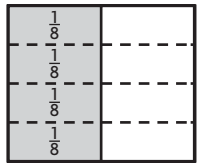
$\frac{1}{2} = \frac{\square}{8}$

Step 1 Fold a sheet of paper. Make equal parts to show the given fraction $\frac{1}{2}$. Shade and label the fraction.



$\frac{1}{2}$ ← Number of shaded parts
← Number of equal parts in the whole

Step 2 Fold the paper again two times to make the new number of equal parts, eighths.



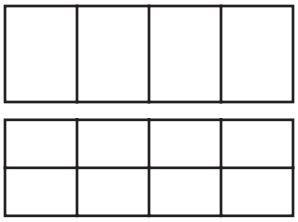
Write the new fraction for the shaded part.

$\frac{4}{8}$ **Think:** 4 shaded parts / 8 equal parts in the whole

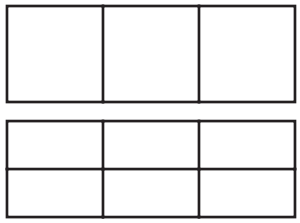
So, $\frac{1}{2} = \frac{4}{8}$.

Use models to find the equivalent fraction.

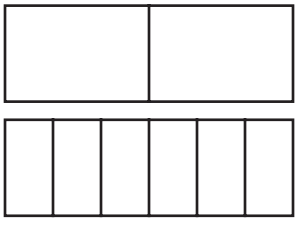
1. $\frac{1}{4} = \frac{\square}{8}$



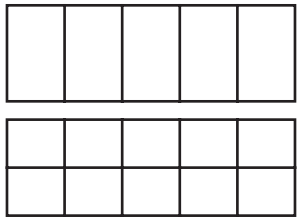
2. $\frac{1}{3} = \frac{\square}{6}$



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

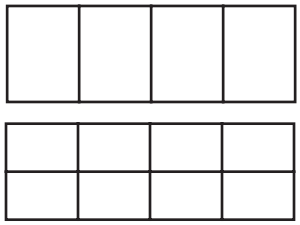


4. $\frac{3}{5} = \frac{\square}{10}$



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

6. $\frac{3}{4} = \frac{\square}{8}$



Name _____

Equivalent Fractions on a Multiplication Table

You can use a multiplication table to find equivalent fractions.

What is an equivalent fraction for $\frac{2}{5}$?

Step 1 Shade the row for the numerator.

$\frac{2}{5}$ ← numerator
$\frac{2}{5}$ ← denominator

The numerator is **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

Choose one of the products in the row.

$\frac{4}{\blacksquare}$ ← Write the product as the numerator.

Step 2 Shade the row for the denominator.

The denominator is **5**.

Find the product that is in the same column as the product of the numerator, 4.

$\frac{4}{10}$ ← Write the product as the denominator.

×	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
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50

So, $\frac{2}{5} = \frac{4}{10}$.

Use a multiplication table to find three equivalent fractions.

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

3. $\frac{5}{8}$ _____ **4.** $\frac{3}{5}$ _____

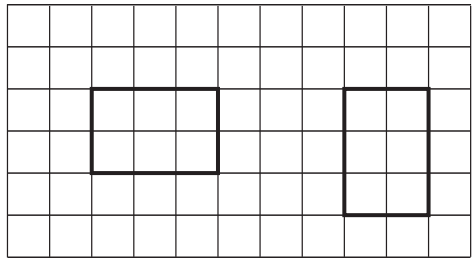
5. $\frac{4}{10}$ _____ **6.** $\frac{3}{4}$ _____

Name _____

Same Size, Same Shape

Some shapes have the same size and the same shape.

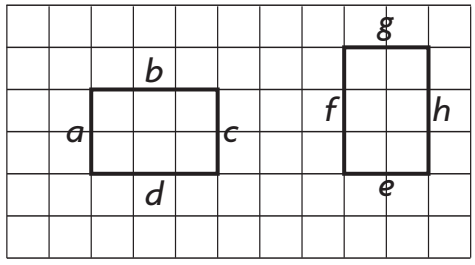
One way to find if shapes have the same size and shape is by comparing them on grid paper.



Look at these shapes.

Step 1 Do they have the same shape? **yes**

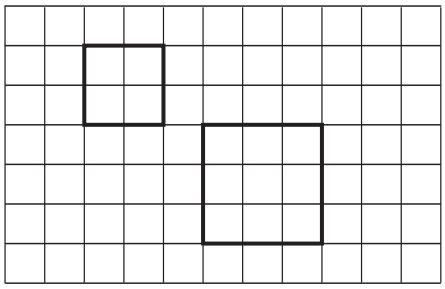
Step 2 Compare the sides.
Side *a* is the same length as side **e**.
Side *b* is the same length as side ***f***.
Side *c* is the same length as side ***g***.
Side *d* is the same length as side ***h***.
Are they the same size? **yes**



So, these two shapes have **the same size and 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.



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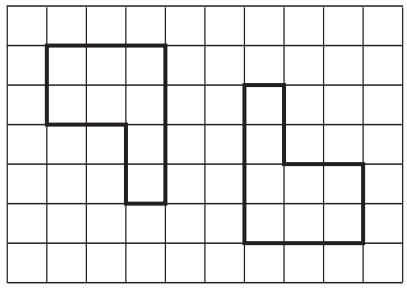
2.



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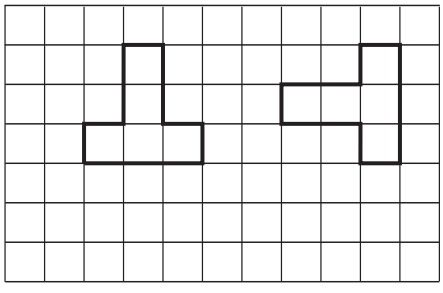
3.



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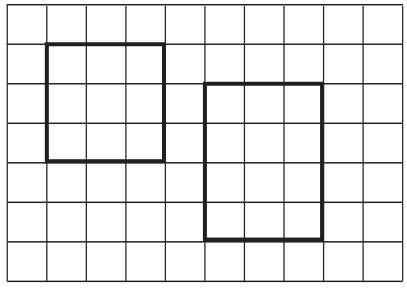
4.



_____

Name _____

Algebra • Change Customary Units of Length

There are 12 inches in 1 foot. You can use this relationship and make a table to change feet to inches.

For each additional 1 foot, add 12 to get the number of inches.

Feet	1	2	3	4	5	6	7	8	9	10
Inches	12	24	36	48	60	72	84	96	108	120

Tim has a dog leash that is 5 feet long. How many inches long is the leash?

Use the table. Find the column for 5 feet. Read the number of inches below it.

5 feet = 60 inches

So, the leash is 60 inches long.

Use the table to rename the number of feet as inches.

1. Rename 2 feet using inches.

2 feet = _____ inches

2. Rename 6 feet using inches.

6 feet = _____ inches

3. Rename 3 feet using inches.

3 feet = _____ inches

4. Rename 4 feet using inches.

4 feet = _____ inches

5. Rename 7 feet using inches.

7 feet = _____ inches

6. Rename 8 feet using inches.

8 feet = _____ inches

Name _____

Algebra • Change Metric Units of Length

How can you change 3 meters to centimeters?

You can skip count to change metric units of length.

Skip count by 100 three times:

100, **200**, **300**.

So, 3 meters = **300** centimeters.

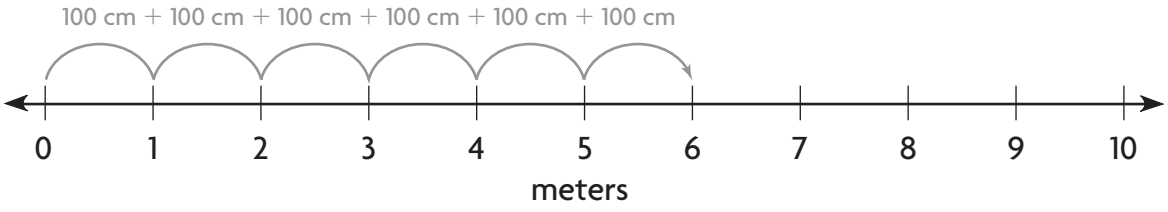
Metric Units of Length

1 meter = 100 centimeters

How many centimeters are in 6 meters?

You can use a number line to change from meters to centimeters.

Draw a number line and label it in centimeters.



Draw one 100-centimeter jump for each meter.
Read the number of centimeters.

So, 6 meters = **600** centimeters.

Use the number line to find the unknown number.

1. 7 meters = _____ centimeters

2. 4 meters = _____ centimeters

3. 5 meters = _____ centimeters

4. 2 meters = _____ centimeters

5. 8 meters = _____ centimeters

6. 9 meters = _____ centimeters

Name _____

Estimate and Measure Liquid Volume

You can use customary units to measure the amount of liquid a container will hold.

Customary Units	
cup (c) 	pint (pt) 
quart (qt) 	gallon (g) 

Choose the unit you would use to measure how much liquid it will take to fill the mug.

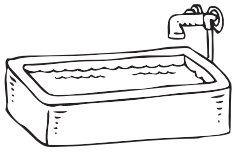
Step 1 Think about how a mug compares to the containers shown.

A mug holds about 1 cup.

Step 2 Choose a customary unit.

A **cup** is a good unit for measuring how much liquid it will take to fill the mug.


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

1. 

_____

2. 

_____

3. 

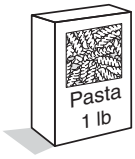
_____

Name _____

Estimate and Measure Weight

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

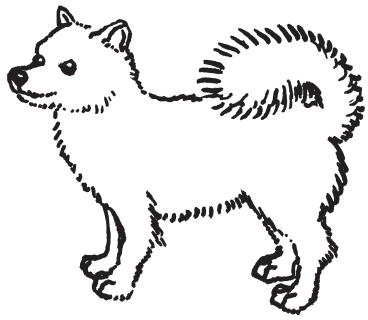
A box of pasta weighs about 1 pound.



Nine pennies weigh about 1 ounce.

1 pound = 16 ounces

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



Step 1 Think about whether a dog is light or heavy.

A dog weighs more than 9 pennies, or 1 ounce.
A dog might weigh as much as several pasta boxes.

Step 2 Choose a unit of weight.

A **pound** is a good unit for measuring the weight of a dog.

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

1. 

_____

2. 

_____

3. 

_____

4. 

_____

5. 

_____

6. 

_____