

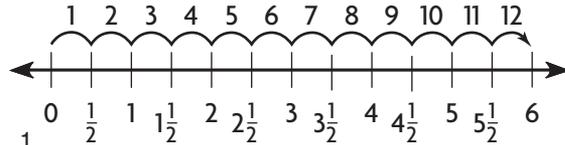
Name _____

Divide Fractions and Whole Numbers

You can use a number line to help you divide a whole number by a fraction.

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

Step 1 Draw a number line from 0 to 6. Divide the number line into halves. Label each half on your number line, starting with $\frac{1}{2}$.



Step 2 Skip count by halves from 0 to 6 to find $6 \div \frac{1}{2}$.

Step 3 Count the number of skips. It takes **12** skips to go from 0 to 6. So the quotient is 12.

$$6 \div \frac{1}{2} = \underline{12} \text{ because } \underline{12} \times \frac{1}{2} = 6.$$

You can use fraction strips to divide a fraction by a whole number.

Divide. $\frac{1}{2} \div 5$

Step 1 Place a $\frac{1}{2}$ strip under a 1-whole strip.

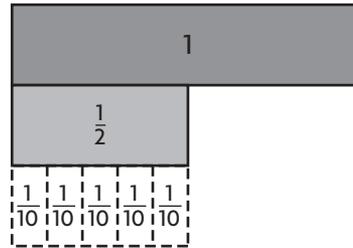
Step 2 Find 5 fraction strips, all with the same denominator, that fit exactly under the $\frac{1}{2}$ strip.

Each part is $\frac{1}{10}$ of the whole.

Step 3 Record and check the quotient.

$$\frac{1}{2} \div 5 = \frac{1}{10} \text{ because } \frac{1}{10} \times 5 = \frac{1}{2}.$$

So, $\frac{1}{2} \div 5 = \underline{\frac{1}{10}}$.



Divide. Draw a number line or use fraction strips.

1. $1 \div \frac{1}{2} =$ _____

2. $2 \div \frac{1}{3} =$ _____

3. $4 \div \frac{1}{4} =$ _____

4. $\frac{1}{5} \div 3 =$ _____

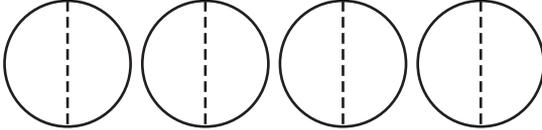
5. $\frac{1}{3} \div 2 =$ _____

6. $4 \div \frac{1}{5} =$ _____

Name _____

Problem Solving • Use Multiplication

Nathan makes 4 batches of soup and divides each batch into halves. How many $\frac{1}{2}$ -batches of soup does he have?

Read the Problem	Solve the Problem
<p>What do I need to find? I need to find <u>the number of</u> <u>$\frac{1}{2}$-batches of soup Nathan</u> <u>has</u>.</p>	<p>Since Nathan makes 4 batches of soup, my diagram needs to show 4 circles to represent the 4 batches. I can divide each of the 4 circles in half.</p> 
<p>What information do I need to use? I need to use the size of each <u>batch of</u> <u>soup</u> and the total number of <u>batches</u> of soup Nathan makes.</p>	
<p>How will I use the information? I can <u>make a diagram</u> to organize the information from the problem. Then I can use the diagram to find <u>the number</u> <u>of $\frac{1}{2}$-batches of soup</u> <u>Nathan has after he divides</u> <u>the 4 batches of soup</u>.</p>	<p>To find the total number of halves in the 4 batches, I can multiply 4 by the number of halves in each circle.</p> $4 \div \frac{1}{2} = 4 \times \underline{2} = \underline{8}$ <p>So, Nathan has <u>8</u> one-half-batches of soup.</p>

Draw a diagram to help you solve the problem.

- A nearby park has 8 acres of land to use for gardens. The park divides each acre into fourths. How many $\frac{1}{4}$ -acre gardens does the park have?
- Clarissa has 3 pints of ice tea that she divides into $\frac{1}{2}$ -pint servings. How many $\frac{1}{2}$ -pint servings does she have?

Name _____

Connect Fractions to Division

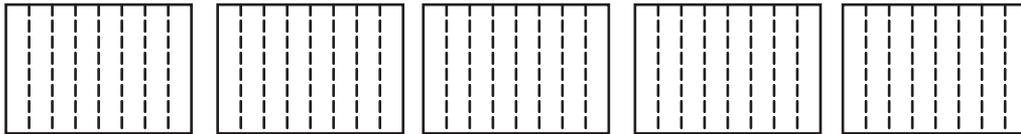
You can write a fraction as a division expression.

$$\frac{4}{5} = 4 \div 5 \qquad \frac{15}{3} = 15 \div 3$$

There are 8 students in a wood-working class and 5 sheets of plywood for them to share equally. What fraction of a sheet of plywood will each student get?

Divide. $5 \div 8$ **Use a drawing.**

Step 1 Draw 5 rectangles to represent 5 sheets of plywood. Since there are 8 students, draw lines to divide each piece of plywood into eighths.



Each student's share of 1 sheet of plywood is $\frac{1}{8}$.

Step 2 Count the total number of eighths each student gets. Since there are 5 sheets of plywood, each student will get 5 of the eighths, or $\frac{5}{8}$.

Step 3 Complete the number sentence.

$$5 \div 8 = \frac{5}{8}$$

Step 4 Check your answer.

$$\text{Since } \frac{5}{8} \times 8 = 5, \text{ the quotient is correct.}$$

So, each student will get $\frac{5}{8}$ of a sheet of plywood.

Complete the number sentence to solve.

- Ten friends share 6 pizzas equally. What fraction of a pizza does each friend get?
- Four students share 7 sandwiches equally. How much of a sandwich does each student get?

$$6 \div 10 = \underline{\hspace{2cm}}$$

$$7 \div 4 = \underline{\hspace{2cm}}$$

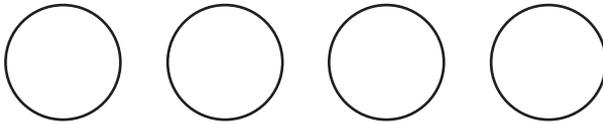
Name _____

Fraction and Whole-Number Division

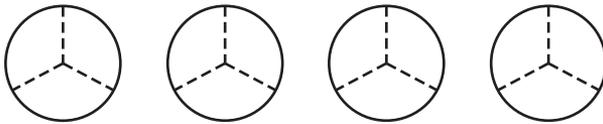
You can divide fractions by solving a related multiplication sentence.

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

Step 1 Draw 4 circles to represent the dividend, 4.



Step 2 Since the divisor is $\frac{1}{3}$, divide each circle into thirds.



Step 3 Count the total number of thirds.

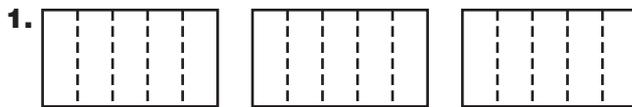
When you divide the 4 circles into thirds, you are finding the number of thirds in 4 circles, or finding 4 groups of 3.

There are 12 thirds.

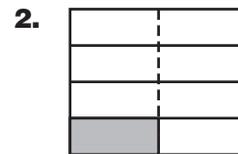
Step 4 Complete the number sentence.

$$4 \div \frac{1}{3} = 4 \times \underline{3} = \underline{12}$$

Use the model to complete the number sentence.



$$3 \div \frac{1}{5} = 3 \times \underline{\quad} = \underline{\quad}$$



$$\frac{1}{4} \div 2 = \frac{1}{4} \times \underline{\quad} = \underline{\quad}$$

Write a related multiplication sentence to solve.

3. $2 \div \frac{1}{5}$

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

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

6. $5 \div \frac{1}{4}$

Name _____

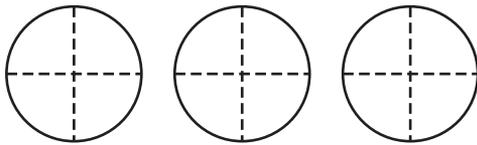
Interpret Division with Fractions

You can draw a diagram or write an equation to represent division with fractions.

Beatriz has 3 cups of applesauce. She divides the applesauce into $\frac{1}{4}$ -cup servings. How many servings of applesauce does she have?

One Way Draw a diagram to solve the problem.

Draw 3 circles to represent the 3 cups of applesauce. Since Beatriz divides the applesauce into $\frac{1}{4}$ -cup servings, draw lines to divide each “cup” into fourths.



To find $3 \div \frac{1}{4}$, count the total number of fourths in the 3 circles.

So, Beatriz has 12 one-fourth-cup servings of applesauce.

Another Way Write an equation to solve.

Write an equation.

$$3 \div \frac{1}{4} = n$$

Write a related multiplication equation.

$$3 \times \frac{4}{1} = n$$

Then solve.

$$\underline{12} = n$$

So, Beatriz has 12 one-fourth-cup servings of applesauce.

1. Draw a diagram to represent the problem. Then solve.

Drew has 5 granola bars. He cuts the bars into halves. How many $\frac{1}{2}$ -bar pieces does he have?

2. Write an equation to represent the problem. Then solve.

Three friends share $\frac{1}{4}$ pan of brownies. What fraction of the whole pan of brownies does each friend get?
