

Lesson 9-1

Monday, February 3, 2020 1:45 PM

Name _____



Solve & Share

Four people want waffles for breakfast. There are 6 waffles left. How can 6 waffles be shared equally among 4 people? How much does each person get? Draw a picture and write a division expression to model the problem.

Model with Math

You can use a circle to model each waffle.

Lesson 9-1 Fractions and Division

I can ...
understand how fractions are related to division.

Content Standard 5.NF.B.3
Mathematical Practices MP.1, MP.2, MP.3, MP.4

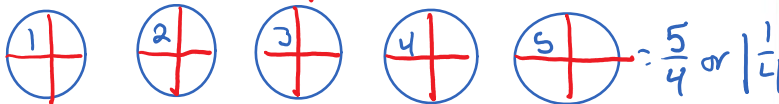
$$6 \div 4 = w$$



$$\frac{6}{4} = 1\frac{2}{4} \text{ or } 1\frac{1}{2} \text{ waffles}$$

Look Back! **MP.3 Construct Arguments** One of the waffles was burnt. Explain how they can share 5 waffles equally.

$$5 \div 4 = \frac{5}{4} = 1\frac{1}{4}$$



Essential Question How Are Fractions Related to Division?

Tom, Joe, and Sam made clay pots using a total of two rolls of clay. If they shared the clay equally, how much clay did each friend use?



Divide 2 by 3 to find what fraction of the clay each person used.

B One Way

Think about sharing 2 rolls of clay equally among 3 people. Partition each roll into 3 equal parts. Each part is $1 \div 3$, or $\frac{1}{3}$.



Each person used one part from each roll of clay for a total of 2 parts. This is the same as $\frac{2}{3}$ of one roll of clay.

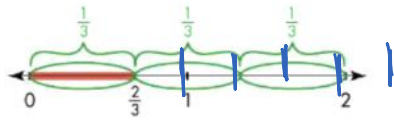
So, $2 \div 3 = \frac{2}{3}$. Each friend used $\frac{2}{3}$ of a roll of clay.

C Another Way

Finding each friend's share when 2 rolls of clay are shared equally among 3 people is the same as finding $\frac{1}{3}$ of 2 wholes.

$$2 \div 3 = \frac{1}{3} \times 2$$

You can find $\frac{1}{3} \times 2$ using a number line.

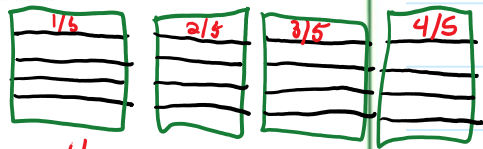


So, $2 \div 3 = \frac{2}{3}$. Each friend used $\frac{2}{3}$ of a roll of clay.

3

Convince Me! **MP.2 Reasoning** Amelia is sharing 4 slices of cheese with 5 friends. How much cheese will each person get? Explain how you decided.

$$4 \div 5 = \frac{4}{5}$$



$\frac{4}{5}$ of a slice.

★ Guided Practice ★

Do You Understand?

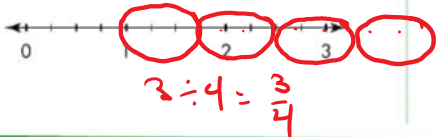
1. Explain how to write $\frac{3}{10}$ as a division expression.

Numerator is the dividend
denominator is the divisor:
 $3 \div 10$

2. Explain how to write $2 \div 5$ as a fraction.

Dividend is the numerator,
Divisor is the denominator:
 $\frac{2}{5}$

3. **MP.4 Model with Math** Use the number line below to show $3 \div 4$.



Do You Know How?

In 4 and 5, write a division expression for each fraction.

4. $\frac{1}{9}$

$1 \div 9$

5. $\frac{7}{8}$

$7 \div 8$

In 6 and 7, tell what fraction each person gets when they share equally.

6. Five friends share 8 apples.

$8 \div 5 = \frac{8}{5} = 1\frac{3}{5}$ apples

7. Two friends share 1 bagel.

$1 \div 2 = \frac{1}{2}$ (1/2 bagel)

Complete 8, 12, 13, 17, 19, 20, 24 & 26

★ Independent Practice ★

In 8–12, write a division expression for each fraction.

8. $\frac{6}{7}$

$6 \div 7 = \frac{6}{7}$

10. $\frac{6}{11}$

11. $\frac{4}{9}$

12. $\frac{8}{15}$

$8 \div 15$

In 13–17, write each division expression as a fraction.

13. $9 \div 11$

$\frac{9}{11}$

14. $1 \div 10$

15. $7 \div 13$

16. $11 \div 17$

17. $25 \div 75$

$\frac{25}{75} = \frac{25 \div 25}{75 \div 25} = \frac{1}{3}$

In 18–21, tell what fraction each person gets when they share equally.

18. 8 students share 6 breakfast bars.

19. 6 soccer players share 5 oranges.

$5 \div 6 = \frac{5}{6}$ orange

20. 10 friends share 7 dollars

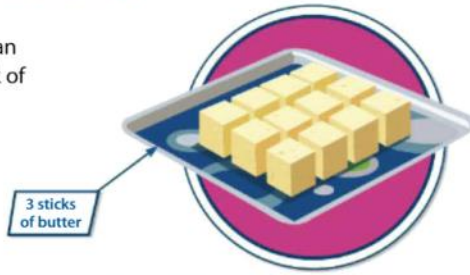
21. 8 friends share 8 muffins

$7 \div 10 = \frac{7}{10}$ dollar

*For another example, see Set A on page 577.

Math Practices and Problem Solving

22. Four friends are baking bread. They equally share 3 sticks of butter. Write an equation to find the fraction of a stick of butter that each friend uses.



23. **MP.2 Reasoning** A group of friends went to the movies. They shared 2 bags of popcorn equally. If each person got $\frac{2}{3}$ of a bag of popcorn, how many people were in the group?

24. **Higher Order Thinking** Missy says that $\frac{5}{6}$ equals $6 \div 5$. Is she correct? Why or why not?

No $\frac{5}{6}$ is less than 1 and is the expression $5 \div 6$
 $\frac{6}{5}$ is greater than 1 and is the expression $6 \div 5$.

25. **MP.1 Make Sense and Persevere** The table shows the food and drinks Tabitha bought for herself and 4 friends for her party. How much did Tabitha spend for each person? Show your work.

Item	Number Bought	Cost Each
Sandwiches	5	\$2.89
French Fries	5	\$1.99
Pitcher of Juice	2	\$4.95

Common Core Assessment

26. Choose Yes or No to tell if the number 5 will make each equation true.

$2 \div \square = \frac{2}{5}$ 5 Yes No
 $4 \div 20 = \square$ $\frac{4}{20} = \frac{1}{5}$ Yes No
 $\square \div 5 = \frac{3}{5}$ $3 \div 5 = \frac{3}{5}$ Yes No
 $\square \div 6 = \frac{5}{6}$ Yes No

27. Choose Yes or No to tell if the number 3 will make each equation true.

$\square \div 3 = \frac{1}{3}$ Yes No
 $2 \div \square = \frac{2}{3}$ Yes No
 $\square \div 8 = \frac{3}{8}$ Yes No
 $3 \div 9 = \square$ Yes No