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Math Activities

Grade 5, Week 9

Division
By Jennifer Bay-Williams

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Day 1	<u>Division as Sharing</u>	3-4
Day 2	<u>Sharing Parts</u>	5-6
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The Answer Key for this week's lessons can be found at:



**Printable
Answer Key**

hand2mind-link.com/M5-AK-W9



Jennifer Bay-Williams is a passionate mathematics educator at the University of Louisville, Kentucky. She has written many books, including *Math Fact Fluency*, *Elementary and Middle School Mathematics: Teaching Developmentally* and *Teaching Student-Centered Mathematics*, all of which take different angles at trying to ensure mathematics teaching engages every student.

Bay-Williams is involved with many organizations related to mathematics teaching. She is a member of the National Council of Teachers of Mathematics (NCTM) Board of Directors, a former president of the Association of Mathematics Teacher Education (AMTE), and active in TODOS: Mathematics for All.



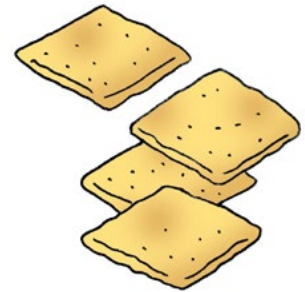
For each of these situations, determine each person's fair share. Use any method to determine the fair share. Show your work in the blank space. Then, write an equation to match the situation.

1. Nicolas and his friend share 11 bananas.



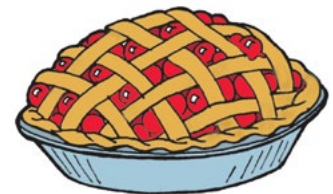
Equation: _____

2. 6 friends share 9 graham crackers.



Equation: _____

3. 8 friends share 10 pies.

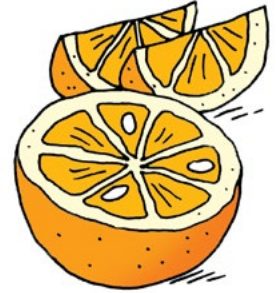


Equation: _____



Day 1 (continued)

4. 3 friends share 8 oranges.



Equation: _____

5. 6 friends share 4 pizzas.



Equation: _____

6. 6 friends share 20 apples.

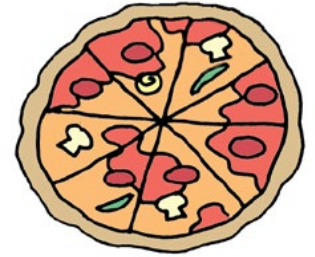


Equation: _____



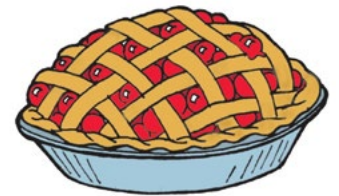
For each of these situations, determine each person's fair share. Use any method to determine the fair share. Show your work in the blank space. Then, write an equation to match the situation.

1. One-half of a pizza is shared with 5 friends.



Equation: _____

2. One-third of a pie is shared with 3 friends.



Equation: _____

3. One-fourth of a bag of popcorn is shared with 2 friends.



Equation: _____

4. One-half of \$40 is shared with 4 friends.



Equation: _____



Day 2 (continued)

Tell a story to fit each expression and then find the answer.
Use illustrations or solve it mentally by reasoning.

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

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

2. $\frac{1}{3} \div 6 =$ _____

6. $\frac{1}{15} \div 4 =$ _____

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

7. $\frac{1}{8} \div 6 =$ _____

4. $\frac{1}{8} \div 4 =$ _____

8. $\frac{1}{10} \div 4 =$ _____

Explain a pattern you noticed that helps you to solve these types of problems in your head:



Use a number line to model each problem and write an equation.

1. Sally was giving out $\frac{1}{2}$ cup servings of ice cream. She had 6 cups of ice cream to serve. How many servings did Sally give out?



2. Raul walked a total of 12 miles. He walked $\frac{1}{4}$ mile every day. How many days did it take him to walk the 12 miles?



3. Olivia has 4 yards of ribbon to make bows. Each bow takes $\frac{1}{3}$ of a yard. How many bows can Olivia make?



4. Sal makes pizzas. He has 4 cups of cheese and each pizza takes $\frac{1}{3}$ cup of cheese. How many pizzas can Sal make?



5. The factory says it takes $\frac{1}{3}$ of an hour to make a set of headphones. How many sets of headphones can be made in 8 hours?





Day 3 (continued)

Write the quotient for each problem below.

1. $2 \div \frac{1}{4} =$ _____

1				1			
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

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

1					1				
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$

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

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

Complete the drawing of the model. Then, write the quotient.

4. $2 \div \frac{1}{8} =$ _____

1				1			

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

1			1		

How would you help a friend understand how to figure out these types of problems (whole number divided by a unit fraction)?



The tables below are called a PICS Page. Each box is a different representation. Notice that the first 1 has all 4 representations as an example. Complete the other 3 tables.

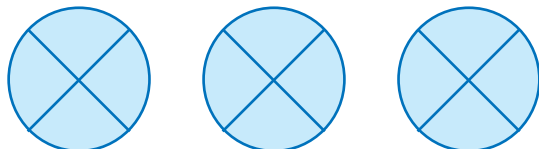
<p>Procedure (and/or Equation)</p> $5 \div \frac{1}{4} = 20$	<p>Illustration</p>
<p>Concept</p> <p>I am finding how many fourths are in 5.</p> <p>It is division as measurement (how many servings).</p>	<p>Situation</p> <p>Nico bought a 5-pound bag of dog food. Each day he feeds his dog $\frac{1}{4}$ pound of dog food. How many days will this 1 bag of dog food last?</p>

<p>Procedure (and/or Equation)</p>	<p>Illustration</p>
<p>Concept</p>	<p>Situation</p> <p>Jonna's relay team ran 2 miles. Each person ran $\frac{1}{2}$ mile. How many people are on Jonna's team?</p>



Day 4 (continued)

Fill in the tables below.

<p>Procedure (and/or Equation)</p>	<p>Illustration</p> 
<p>Concept</p>	<p>Situation</p>

<p>Procedure (and/or Equation)</p> $4 \div \frac{1}{8} = \underline{\hspace{2cm}}$	<p>Illustration</p>
<p>Concept</p>	<p>Situation</p>



Fill in the blanks of the sentence frames to describe the meaning of each problem. Then, solve it. Use a mental strategy or draw a picture.

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

I am sharing $\frac{1}{3}$ of a pizza among 4 people.

This means that I am dividing $\frac{1}{3}$ into 4 equal shares.

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

I am sharing _____ among _____ people.

This means that I am dividing _____ into _____ equal shares.

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

I am sharing _____ among _____ people.

This means that I am dividing _____ into _____ equal shares.

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

I am sharing _____ among _____ people.

This means that I am dividing _____ into _____ equal shares.



Day 5 (continued)

Fill in the blanks of the sentence frames to describe the meaning of each problem. Then, solve it. Use a mental strategy or draw a picture.

1. $10 \div \frac{1}{4} =$ 10

I am finding out how many $\frac{1}{4}$'s are in 10.

This means that I am counting how many $\frac{1}{4}$'s are in 10 wholes.

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

I am finding out how many _____ are in _____.

This means that I am counting how many _____ are in _____ wholes.

3. $6 \div \frac{1}{2} =$ _____

I am finding out how many _____ are in _____.

This means that I am counting how many _____ are in _____ wholes.

4. $12 \div \frac{1}{5} =$ _____

I am finding out how many _____ are in _____.

This means that I am counting how many _____ are in _____ wholes.