UNDERSTANDING

MULTIPLICATION AND DIVISION

RELATE MULTIPLICATION AND DIVISION – PT. 2

LESSON 9

The Simplified Math Curriculum™

© One Stop Teacher Shop © Mr. Elementary Math

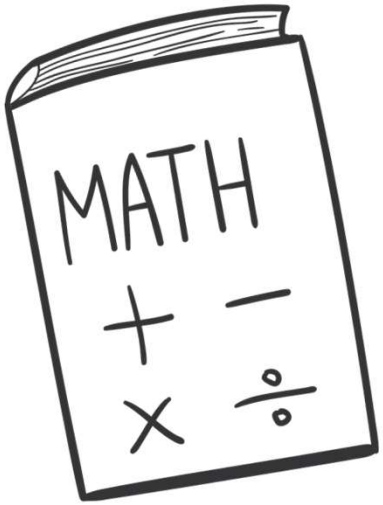
TODAY'S OBJECTIVE

Today we will use equal groups and array models to relate multiplication and division.

© One Stop Teacher Shop © Mr. Elementary Math

TAKE OUT YOUR

MATH JOURNALS



© One Stop Teacher Shop © Mr. Elementary Math

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Multiplication Fact

$$\underset{\text{factor}}{2} \times \underset{\text{factor}}{4} = \underset{\text{product}}{8}$$

Division Fact

$$\underset{\text{dividend}}{8} \div \underset{\text{divisor}}{4} = \underset{\text{quotient}}{2}$$

Let's examine these related facts.

The Simplified Math Curriculum™

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Multiplication Fact

$$\underset{\text{factor}}{2} \times \underset{\text{factor}}{4} = \underset{\text{product}}{8}$$

Division Fact

$$\underset{\text{dividend}}{8} \div \underset{\text{divisor}}{4} = \underset{\text{quotient}}{2}$$

The product in the multiplication fact is the dividend in the division fact.

The Simplified Math Curriculum™

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Multiplication Fact

$$\underset{\text{factor}}{2} \times \underset{\text{factor}}{4} = \underset{\text{product}}{8}$$

Division Fact

$$\underset{\text{dividend}}{8} \div \underset{\text{divisor}}{4} = \underset{\text{quotient}}{2}$$

The factors 2 and 4 in the multiplication fact are the quotient and the divisor in the related division fact.

The Simplified Math Curriculum™

© One Stop Teacher Shop © Mr. Elementary Math

Remember in division we are looking for either the…

The Number of Groups

OR

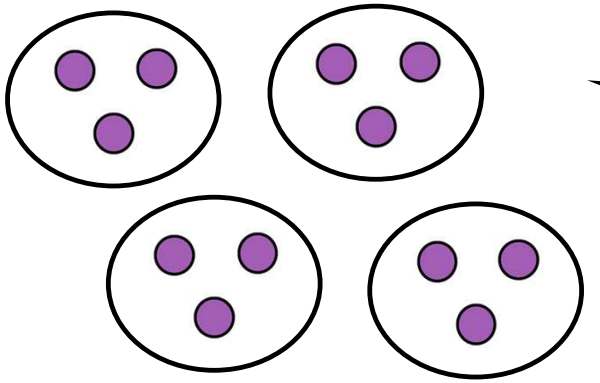
The Number in Each Group

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Watch me as I solve the problem.

If 12 grapes are divided into 4 equal groups, how many are in each group?



I'm going to create an equal groups model to solve.

There are 4 groups of 3 grapes.

Complete the multiplication equation.

$$4 \times ? = 12$$

Write the matching division equation.

$$? \div 4 = ?$$

What does the quotient represent?

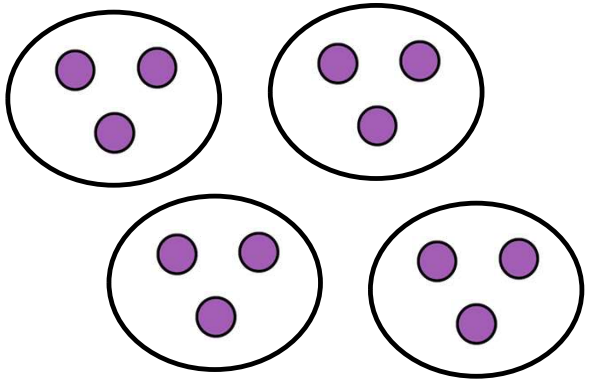
© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Use the model to answer each question.

If 12 grapes are divided into 4 equal groups, how many are in each group?

The unknown in this equation is the number of objects in each group.



Complete the multiplication equation.

$4 \times ? = 12$

Write the matching division equation.

$? \div 4 = ?$

What does the quotient represent?

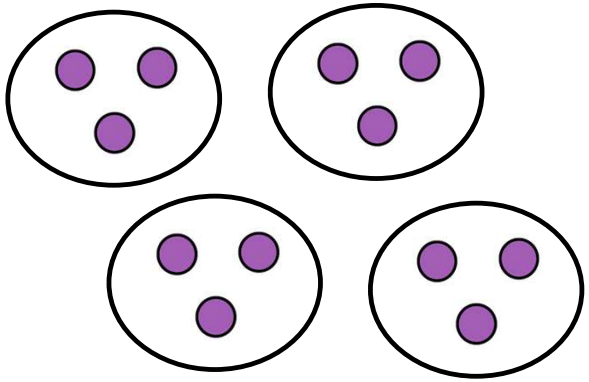
© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Use the model to answer each question.

If 12 grapes are divided into 4 equal groups, how many are in each group?

There are 3 grapes in each group, so the unknown number is 3.



Complete the multiplication equation.

$$4 \times 3 = 12$$

Write the matching division equation.

$$? \div 4 = ?$$

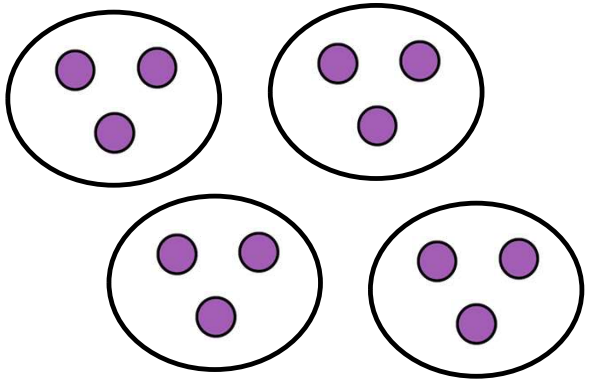
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Use the model to answer each question.

If 12 grapes are divided into 4 equal groups, how many are in each group?



Next, I'll use the multiplication equation to fill in the division equation and answer the question.

Complete the multiplication equation.

$4 \times 3 = 12$

Write the matching division equation.

$12 \div 4 = 3$

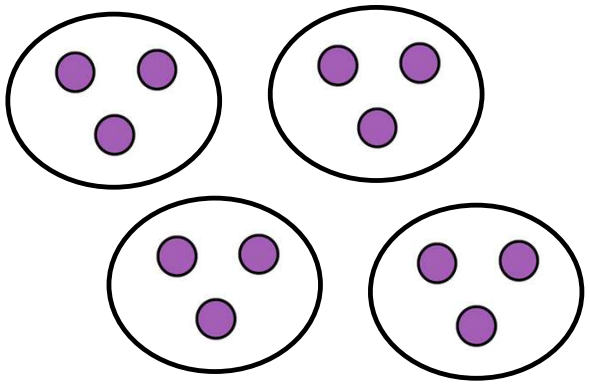
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

WATCH ME FIRST

Use the model to answer each question.

If 12 grapes are divided into 4 equal groups, how many are in each group?



The quotient is 3.

In this problem, the quotient represents the number of objects in a group.

Complete the multiplication equation.

$4 \times 3 = 12$

Write the matching division equation.

$12 \div 4 = 3$

What does the quotient represent?

3 represents the number of objects (grapes) in each group.

© One Stop Teacher Shop © Mr. Elementary Math

LET'S WORK TOGETHER

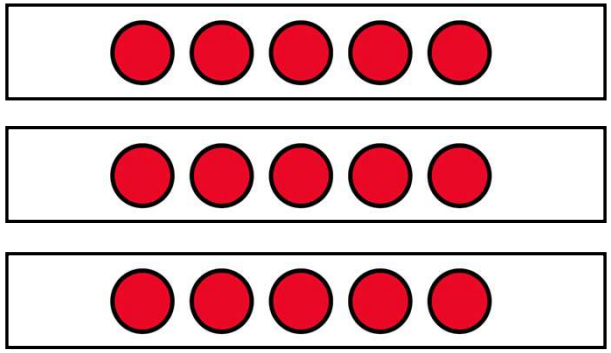
© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
LET'S WORK TOGETHER

Let's do this one together.

If 15 apples are divided into groups of 5, how many groups are there?

Draw an array to solve. How many groups did you draw? How many are in each group?



There are 3 groups of 5.

Complete the multiplication equation.

$_?_ \times _5_ = _15_$

Complete the matching division equation.

$_?_ \div _5_ = _?_$

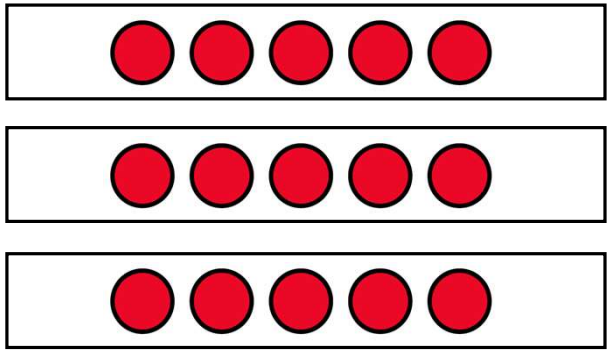
© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
LET'S WORK TOGETHER

Use the model to answer each question.

If 15 apples are divided into groups of 5, how many groups are there?

What number goes in the blank?



Complete the multiplication equation.

$$\underline{3} \times \underline{5} = \underline{15}$$

Complete the matching division equation.

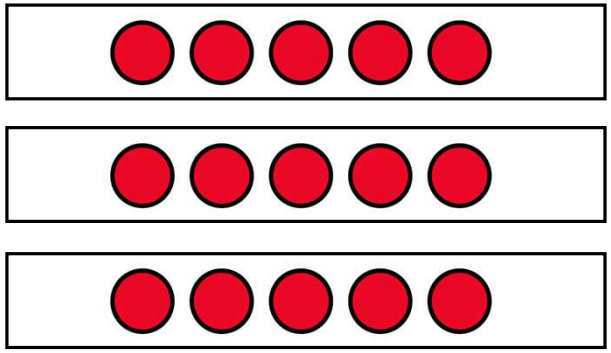
$$\underline{?} \div \underline{5} = \underline{?}$$

© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
LET'S WORK TOGETHER

Use the model to answer each question.

If 15 apples are divided into groups of 5, how many groups are there?



What numbers go in the blanks?

Complete the multiplication equation.

$$\underline{3} \times \underline{5} = \underline{15}$$

Complete the matching division equation.

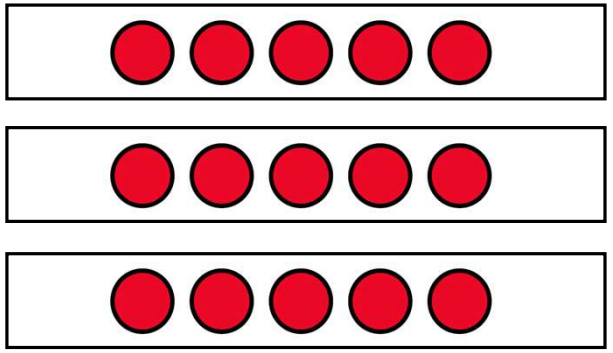
$$\underline{15} \div \underline{5} = \underline{3}$$

© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
LET'S WORK TOGETHER

Use the model to answer each question.

If 15 apples are divided into groups of 5, how many groups are there?



What does the number 3 represent in the equation?

Complete the multiplication equation.

$3 \times 5 = 15$

Complete the matching division equation.

$15 \div 5 = 3$

What does the quotient represent?

3 represents the number of groups. There are 3 groups of 5 (apples).

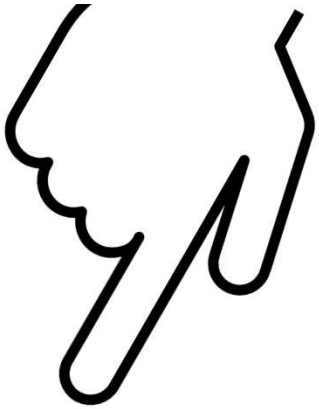
© One Stop Teacher Shop © Mr. Elementary Math

CHECK - IN

- ❑ What did you notice?
- ❑ Can you make a connection to anything else you already know? How?
- ❑ Do you have any questions?

© One Stop Teacher Shop © Mr. Elementary Math

© One Stop Teacher Shop © Mr. Elementary Math

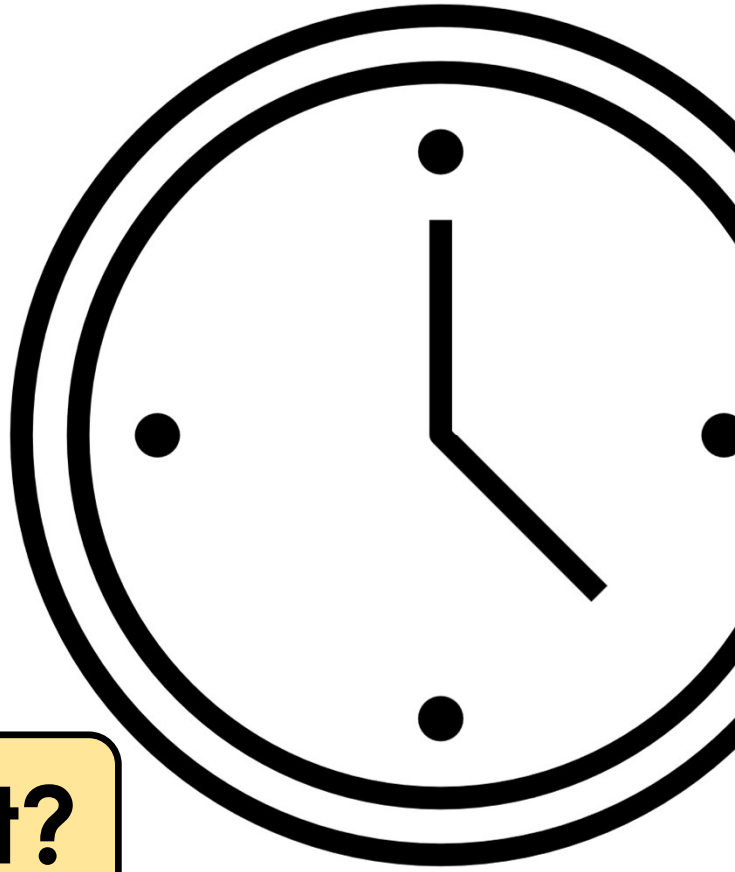


Now It's "YOUR TURN" to Solve

Don't forget to show your work!

© One Stop Teacher Shop © Mr. Elementary Math

Time to Discuss and Check Your Answers



How did you solve it?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
YOUR TURN

Draw an equal groups model. Answer the questions.

If 24 grapes are divided into 6 equal groups, how many are in each group?

Complete the multiplication equation.

$6 \times ? = 24$

Write the matching division equation.

$? \div 6 = ?$

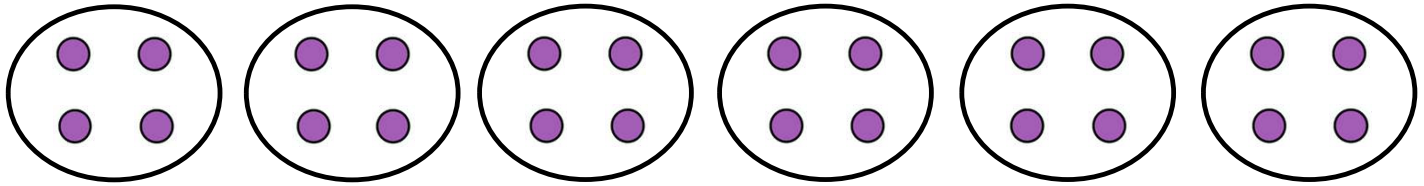
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #1
YOUR TURN

Draw an equal groups model. Answer the questions.

If 24 grapes are divided into 6 equal groups, how many are in each group?



Complete the multiplication equation.

$6 \times 4 = 24$

Write the matching division equation.

$24 \div 6 = 4$

What does the quotient represent?

4 represents the number of objects (grapes) in each group.

© One Stop Teacher Shop © Mr. Elementary Math

Problem #2
YOUR TURN

Draw an equal groups model. Answer the questions.

If 36 grapes are divided into groups of 4, how many groups are there?

Complete the multiplication equation.

$_?_ \times _4_ = _36_$

Write the matching division equation.

$_?_ \div _4_ = _?_$

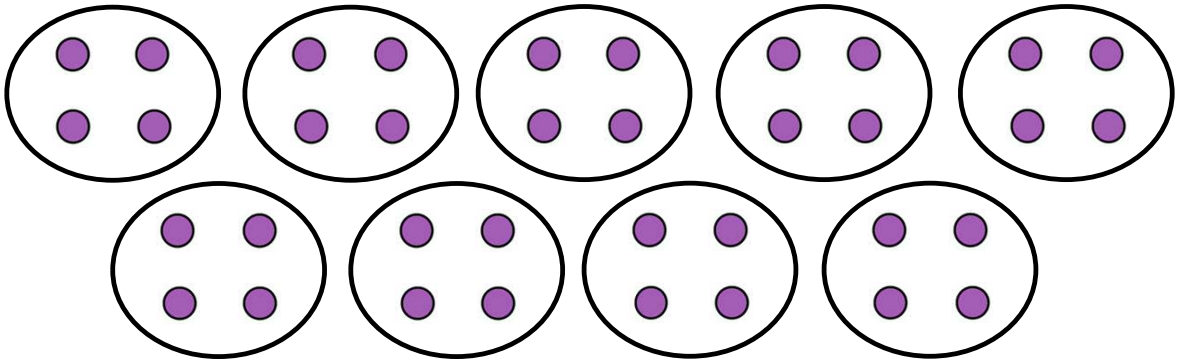
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #2
YOUR TURN

Draw an equal groups model. Answer the questions.

If 36 grapes are divided into groups of 4, how many groups are there?



Complete the multiplication equation.

$$\underline{9} \times \underline{4} = \underline{36}$$

Write the matching division equation.

$$\underline{36} \div \underline{4} = \underline{9}$$

What does the quotient represent?

9 represents the number of groups. There are 9 groups of 4 (grapes).

© One Stop Teacher Shop © Mr. Elementary Math

Problem #3
YOUR TURN

Draw an equal groups model. Answer the questions.

If 35 grapes are divided into groups of 5, how many groups are there?

Complete the multiplication equation.

$_?_ \times _5_ = _35_$

Write the matching division equation.

$_?_ \div _5_ = _?_$

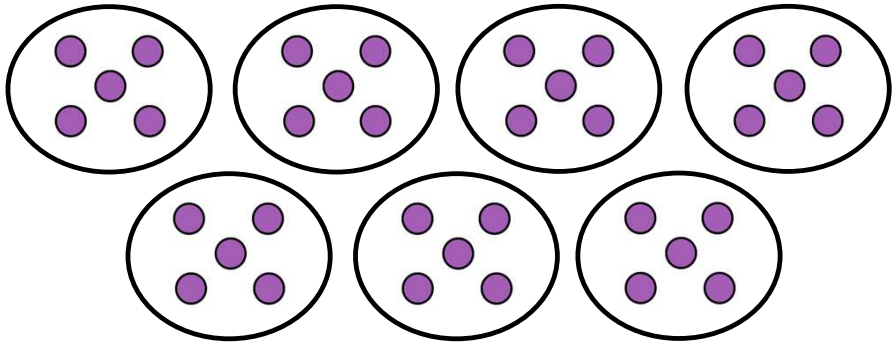
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #3
YOUR TURN

Draw an equal groups model. Answer the questions.

If 35 grapes are divided into groups of 5, how many groups are there?



Complete the multiplication equation.

$$\underline{7} \times \underline{5} = \underline{35}$$

Write the matching division equation.

$$\underline{35} \div \underline{5} = \underline{7}$$

What does the quotient represent?

7 represents the number of groups. There are 7 groups of 5 (grapes).

© One Stop Teacher Shop © Mr. Elementary Math

Problem #4
YOUR TURN

Draw an array model. Answer the questions.

If 32 blueberries are divided into 4 equal groups, how many are in each group?

Complete the multiplication equation.	Write the matching division equation.
$4 \times ? = 32$	$? \div 4 = ?$

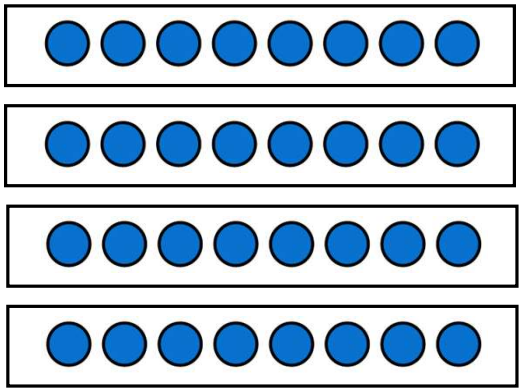
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #4
YOUR TURN

Draw an array model. Answer the questions.

If 32 blueberries are divided into 4 equal groups, how many are in each group?



Complete the multiplication equation.

$4 \times 8 = 32$

Write the matching division equation.

$32 \div 4 = 8$

What does the quotient represent?

8 represents the number of objects (blueberries) in each group.

© One Stop Teacher Shop © Mr. Elementary Math

Problem #5
YOUR TURN

Draw an array model. Answer the questions.

If 21 blueberries are divided into groups of 7, how many groups are there?

Complete the multiplication equation.	**Write the matching division equation.**
? × 7 = 21	? ÷ 7 = ?

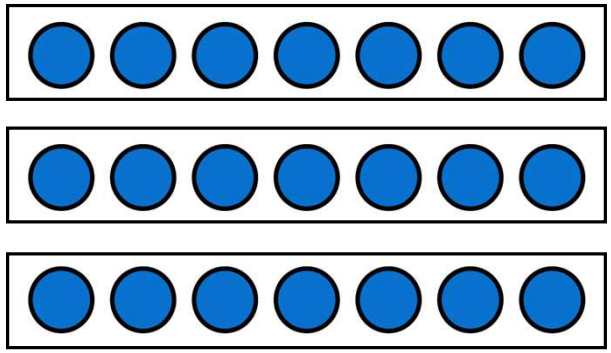
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #5
YOUR TURN

Draw an array model. Answer the questions.

If 21 blueberries are divided into groups of 7, how many groups are there?



Complete the multiplication equation.

$$3 \times 7 = 21$$

Write the matching division equation.

$$21 \div 7 = 3$$

What does the quotient represent?

3 represents the number of groups. There are 3 groups of 7 (blueberries).

© One Stop Teacher Shop © Mr. Elementary Math

Problem #6
YOUR TURN

Draw an array model. Answer the questions.

If 40 blueberries are divided into 4 equal groups, how many are in each group?

Complete the multiplication equation.	Write the matching division equation.
$4 \times ? = 40$	$? \div 4 = ?$

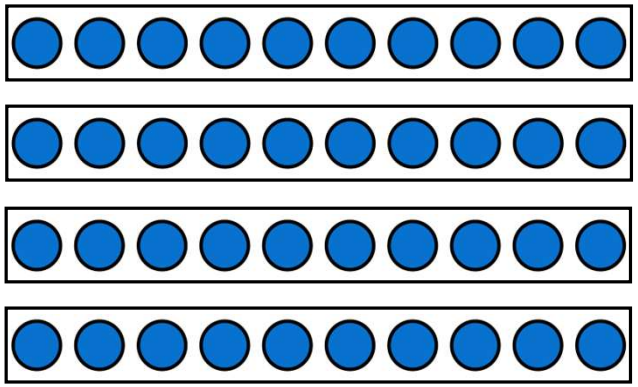
What does the quotient represent?

© One Stop Teacher Shop © Mr. Elementary Math

Problem #6
YOUR TURN

Draw an array model. Answer the questions.

If 40 blueberries are divided into 4 equal groups, how many are in each group?



Complete the multiplication equation.

$4 \times 10 = 40$

Write the matching division equation.

$40 \div 4 = 10$

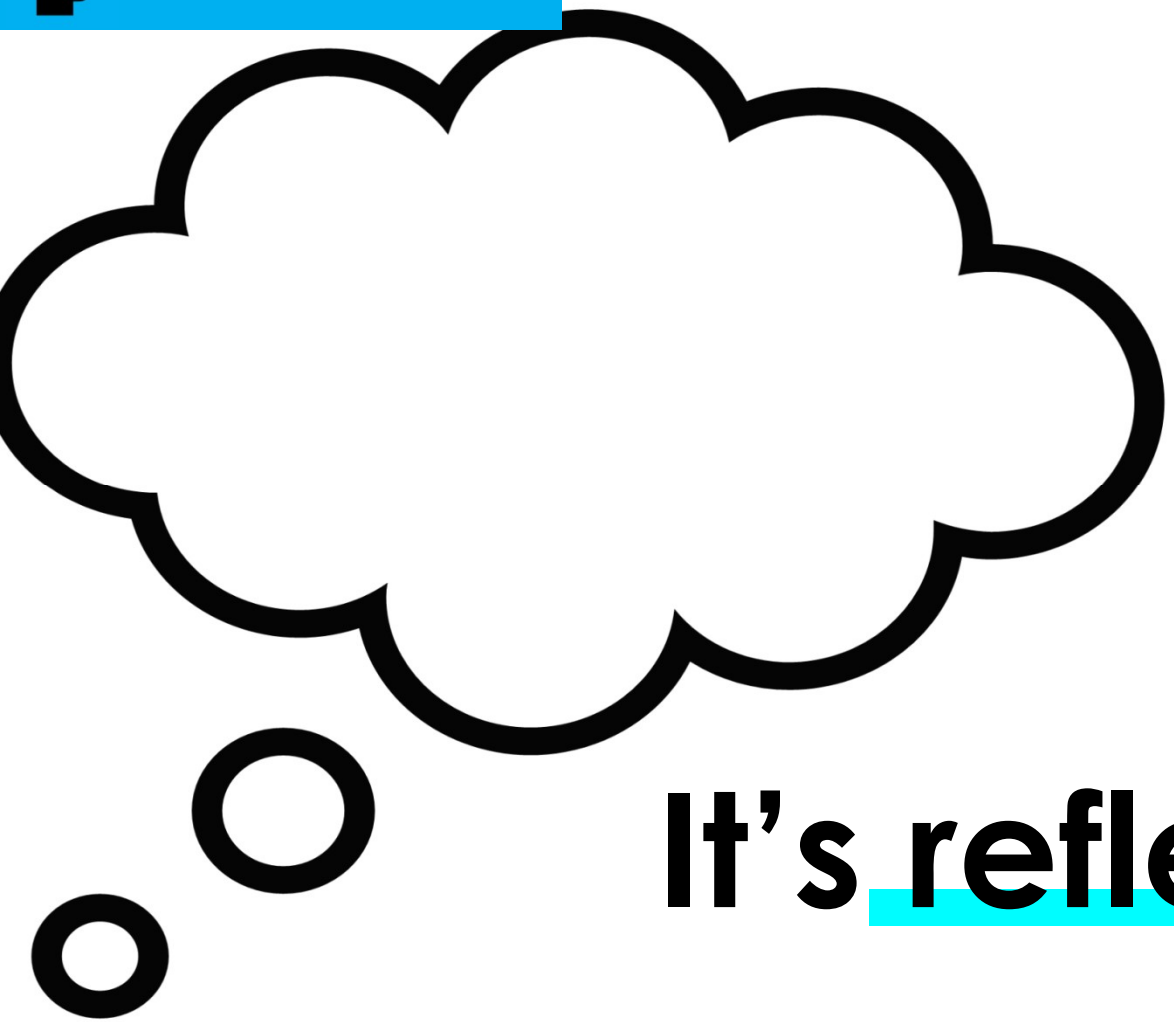
What does the quotient represent?

10 represents the number of objects (blueberries) in each group.

The Simplified Math Curriculum™

© One Stop Teacher Shop © Mr. Elementary Math

Let's Reflect



It's reflection time!

© One Stop Teacher Shop © Mr. Elementary Math