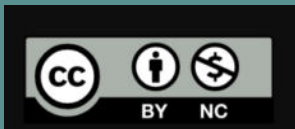




Meanings of Division

Lesson # 2



2019 Open Up Resources | Download for free at openupresources.org.

**Let's explore
ways to think
about
division.**





Today's Goals

- ☐ I can explain how multiplication and division are related.
- ☐ I can explain two ways of interpreting a division expression such as $24 \div 3$.
- ☐ When given a division equation, I can write a multiplication equation that represents the same situation.

A Division Expression

Warm Up 2.1

- Think Pair Share





A Division Expression

Here is an expression: $20 \div 4$.

What are some ways to think about this expression? Describe at least two meanings you think it could have.

Bags of Almonds

Activity 2.2

- MLR6: Three Reads





A baker has 12 lbs of almonds. She puts them in bags, so that each bag has the same weight. In terms of pounds and bags of almonds, what would $12 \div 6$ mean?

1st Read: Shared Reading

What is this situation about?

2nd Read: Team Reading

What is countable or measureable in this story?

3rd Read: Team Reading

How might you begin to solve this task?

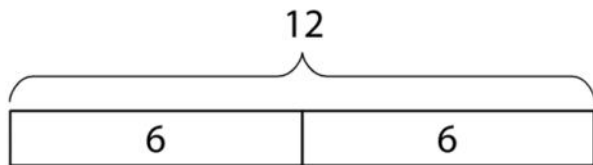
Start working on your own.

Then we'll discuss your thinking as a class!



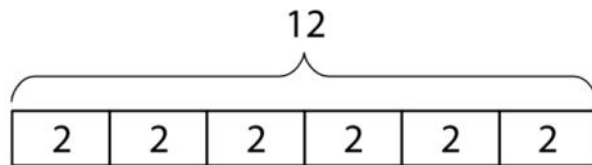
A baker has 12 pounds of almonds. She puts them in bags, so that each bag has the same weight.

1. Clare and Tyler drew diagrams and wrote equations to show how they were thinking about $12 \div 6$.



$$\underline{\quad} \cdot 6 = 12$$

Clare's diagram and equation



$$6 \cdot \underline{\quad} = 12$$

Tyler's diagram and equation

How do you think Clare and Tyler thought about $12 \div 6$? Explain what each diagram and each part of each equation (especially the missing number) might mean in the context of the bags of almonds.

Pause here for a class discussion.



A baker has 12 pounds of almonds. She puts them in bags, so that each bag has the same weight.

2. Explain what each division expression could mean in the context of the bags of almonds. Then draw a diagram and write a multiplication equation to show how you are thinking about the expression.

a. $12 \div 4$

b. $12 \div 2$

c. $12 \div \frac{1}{2}$

Are you ready for more?



A loaf of bread is cut into slices.

1. If each slice is $\frac{1}{2}$ of a loaf, how many slices are there?
2. If each slice is $\frac{1}{5}$ of a loaf, how many slices are there?
3. What happens to the number of slices as each slice gets smaller?
4. Interpret the meaning of dividing by 0 in the context of slicing bread.

Lesson Synthesis

- How can we interpret $20 \div 8$?
- Suppose we interpret it as 'how many groups of 8 are in 20?'. How might we draw a diagram to show this? What multiplication equation could we write?
- If we think of it as 'how much is in each group', how would the diagram be different? What multiplication equation could we write?



Today's Goals

- ☐ I can explain how multiplication and division are related.
- ☐ I can explain two ways of interpreting a division expression such as $24 \div 3$.
- ☐ When given a division equation, I can write a multiplication equation that represents the same situation.

Groups on a Field Trip

Cool Down 2.3



Cool Down

1. During a field trip, 60 students are put into equal-sized groups.
 - a. Describe two ways to interpret $60 \div 5$ in this context.
 - b. Find the quotient.
 - c. Explain what the quotient would mean in each of the two interpretations you described.
2. Consider the division expression $7\frac{1}{2} \div 2$. Select **all** multiplication equations that correspond to this division expression.
 - a. $2 \cdot ? = 7\frac{1}{2}$
 - b. $7\frac{1}{2} \cdot ? = 2$
 - c. $2 \cdot 7\frac{1}{2} = ?$
 - d. $? \cdot 7\frac{1}{2} = 2$
 - e. $? \cdot 2 = 7\frac{1}{2}$