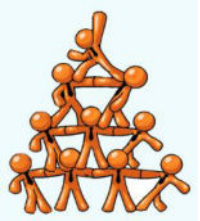
4-8: Learning Goals

- Let’s look at division problems that help us find the size of one group.

4-8-1: Inventing a Scenario

1. Think of a situation with a question that can be represented by $12 \div \frac{2}{3} = ?$ Write a description of that situation and the question.

2. Trade descriptions with your partner, and answer your partner's question.



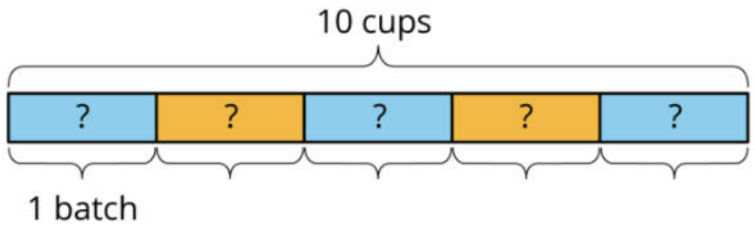
4-8-2: How Much in One Batch?

To make 5 batches of cookies, 10 cups of flour are required. How many cups of flour does each batch require?

We can write equations and draw a diagram to represent this situation. They help us see that each batch requires 2 cups of flour.

$5 \cdot ? = 10$

$10 \div 5 = ?$

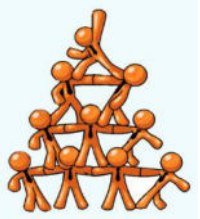


For each question, write a multiplication equation and a division equation, draw a diagram, and answer the question.

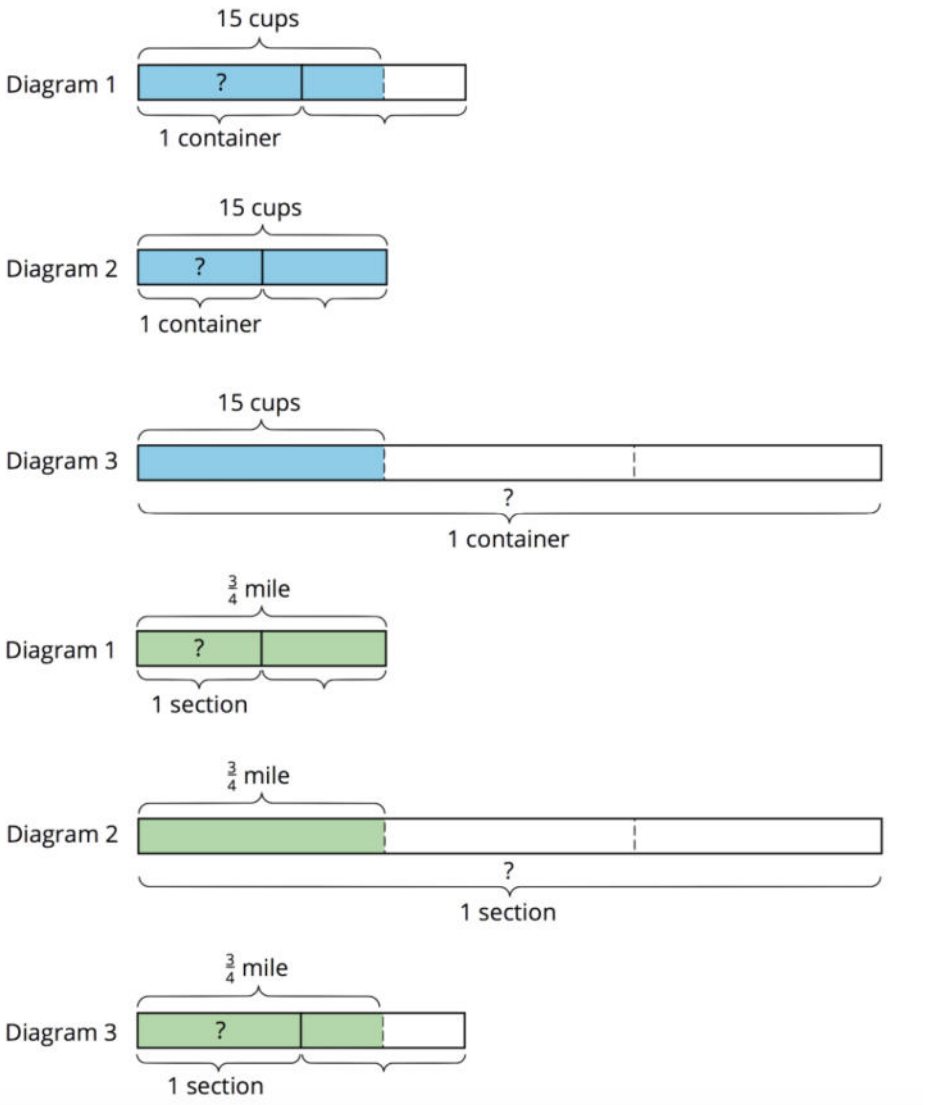
1. To make 4 batches of cupcakes, it takes 6 cups of flour. How many cups of flour are needed for 1 batch?

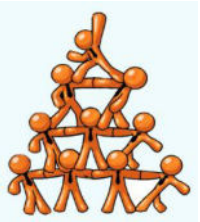
2. To make $\frac{1}{2}$ batch of rolls, it takes $\frac{5}{4}$ cups of flour. How many cups of flour are needed for 1 batch?

3. Two cups of flour make $\frac{2}{3}$ batch of bread. How many cups of flour make 1 batch?



4-8-3: One Container and One Section of Highway





4-8-3: One Container and One Section of Highway

Here are three tape diagrams and three descriptions of situations that include questions.

Match a diagram to each situation, then use the diagram to help you answer the question. Next, write multiplication and division equations to represent each situation.

Diagram 1

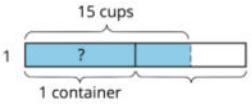


Diagram 2

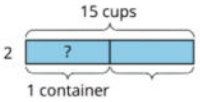
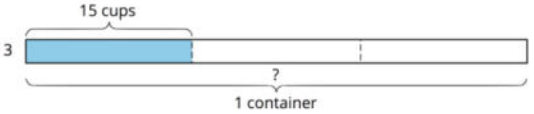


Diagram 3



1. Tyler poured 15 cups of water into 2 equal-sized bottles and filled each bottle. How much water was in each bottle?

   Diagram: Multiplication equation:

   Answer: Division equation:

2. Kiran poured 15 cups of water into equal-sized pitchers and filled $1\frac{1}{2}$ pitchers. How much water was in each pitcher?

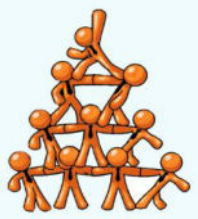
   Diagram: Multiplication equation:

   Answer: Division equation:

3. It takes 15 cups of water to fill $\frac{1}{3}$ pail. How much water is needed to fill 1 pail?

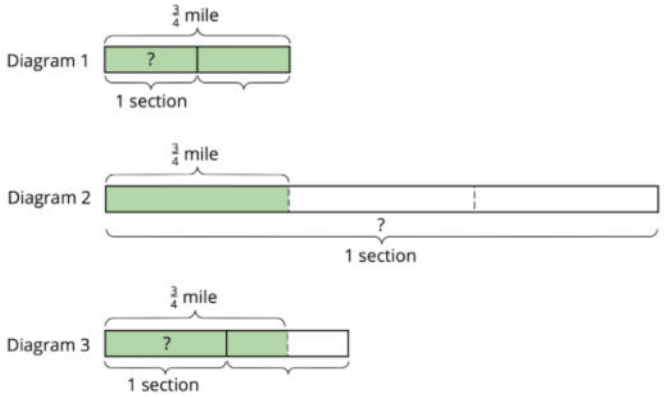
   Diagram: Multiplication equation:

   Answer: Division equation:



4-8-3: One Container and One Section of Highway

Here are three more diagrams and situations. Match a diagram to each situation, and use the diagram to help you answer the question. Next, write multiplication and division equations to represent each situation.



4. Priya's class has adopted two equal sections of a highway to keep clean. The combined length is $\frac{3}{4}$ of a mile. How long is each section?

   Diagram: Multiplication equation:

   Answer: Division equation:

5. Lin's class has also adopted some sections of highway to keep clean. If $1\frac{1}{2}$ sections are $\frac{3}{4}$ mile long, how long is each section?

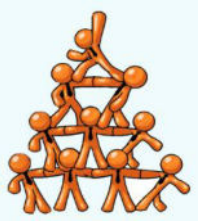
   Diagram: Multiplication equation:

   Answer: Division equation:

6. A school has adopted a section of highway to keep clean. If $\frac{1}{3}$ of the section is $\frac{3}{4}$ mile long, how long is the section?

   Diagram: Multiplication equation:

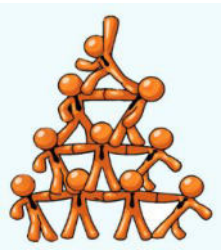
   Answer: Division equation:



4-8: Lesson Synthesis

There are two multiplication equations that correspond to $7 \div \frac{1}{2} = ?$. We can write:

- $? \cdot \frac{1}{2} = 7$, which can be interpreted as: "how many groups of $\frac{1}{2}$ are in 7?"
- $\frac{1}{2} \cdot ? = 7$, which can be interpreted as: "$\frac{1}{2}$ of what number is 7?"



4-8: Learning Targets

- I can tell when a question is asking for the amount in one group.
- I can use diagrams and multiplication and division equations to represent and answer "how much in each group?" questions.

4-8-4: Funding a Camping Trip

Students in a sixth-grade class are raising money for an end-of-year camping trip. So far, they have raised \$240. This is $\frac{2}{5}$ of the cost of the trip. How much does the trip cost?

Write multiplication and division equations and draw a diagram to represent the situation. Then answer the question and show your reasoning.