Interpreting Division Situations

Lesson # 3

Addressing	**6.NS.A.1** Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because 3/4 of 8/9 is 2/3. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?

Let’s explore situations that involve division.

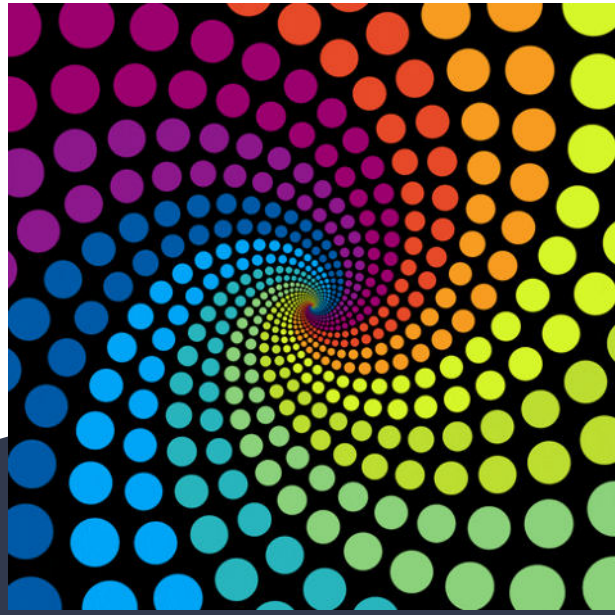
Today's Goals

- ❏ I can create a diagram or write an equation that represents division and multiplication questions.
- ❏ I can decide whether a division question is asking "how many groups?" or "how many in each group?"

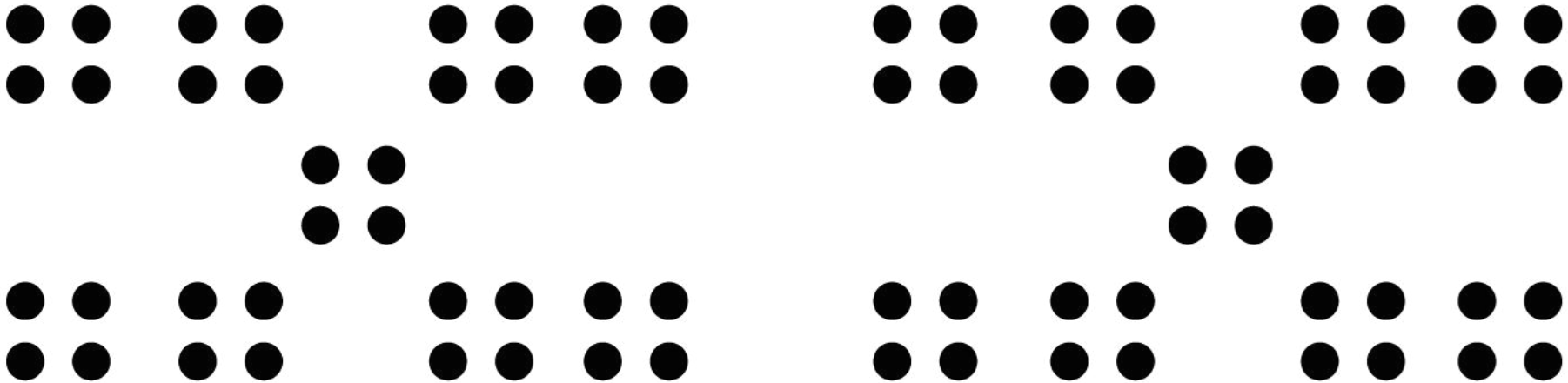
Students, write your response!

Dot Image: Properties of Multiplication

Warm Up 3.1



I am going to show you an image of dots for 3 seconds. You need to determine how many dots there are and explain how you saw them.



Homemade Jams

Activity 3.2

- Notice & Wonder
- Anticipate, Monitor, Select, Sequence, Connect
- MLR6: Three Reads

Listen as I read you these story problems.

1. Mai had 4 jars. In each jar, she put $2\frac{1}{4}$ cups of homemade blueberry jam. Altogether, how many cups of jam are in the jars?
2. Priya filled 5 jars, using a total of $7\frac{1}{2}$ cups of strawberry jam. How many cups of jam are in each jar?
3. Han had some jars. He put $\frac{3}{4}$ cup of grape jam in each jar, using a total of $6\frac{3}{4}$ cups. How many jars did he fill?

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!

Homemade Jams

Draw a diagram and write a multiplication equation to represent each of the following situations. Then answer the question.

1. Mai had 4 jars. In each jar, she put $2\frac{1}{4}$ cups of homemade blueberry jam. Altogether, how many cups of jam are in the jars?

Homemade Jams

Draw a diagram and write a multiplication equation to represent each of the following situations. Then answer the question.

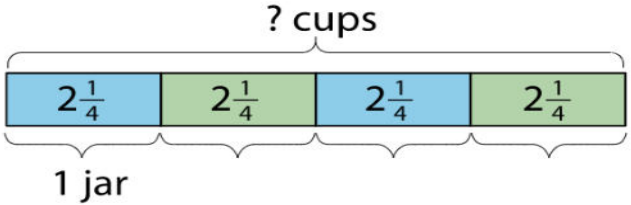
2. Priya filled 5 jars, using a total of $7\frac{1}{2}$ cups of strawberry jam. How many cups of jam are in each jar?

Homemade Jams

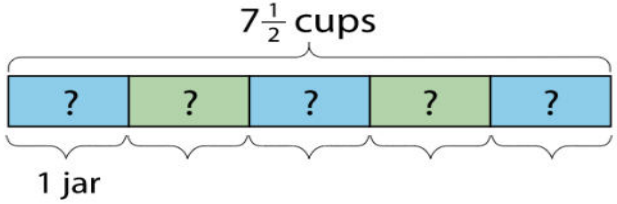
Draw a diagram and write a multiplication equation to represent each of the following situations. Then answer the question.

3. Han had some jars. He put $\frac{3}{4}$ cup of grape jam in each jar, using a total of $6\frac{3}{4}$ cups. How many jars did he fill?

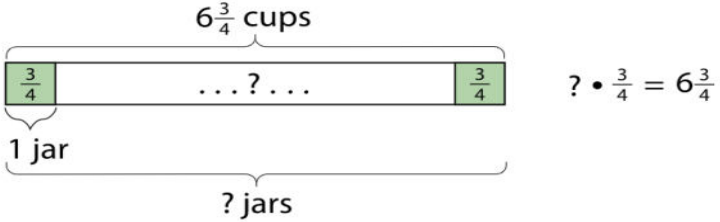
Let’s Talk About It



$4 \bullet 2\frac{1}{4} = ?$



$5 \bullet ? = 7\frac{1}{2}$



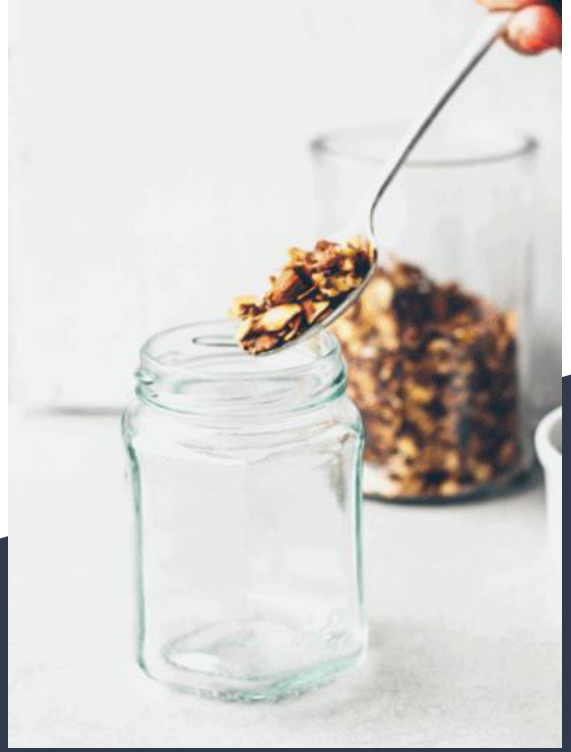
$? \bullet \frac{3}{4} = 6\frac{3}{4}$

- In each diagram, what does the ‘?’ represent?
- What does each rectangular part represent?
- What does the number in each rectangle represent?
- How do the three parts of each multiplication equation relate to the diagram?
- The last diagram doesn't represent all the jars and shows a question mark in the middle of the tape. Why might that be?

Making Granola

Activity 3.3

- MLR6: Three Reads
- Think Pair Share
- MLR3: Clarify, Critique, Correct



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!

Making Granola

1. To make 1 batch of granola, Kiran needs 26 ounces of oats. The only measuring tool he has is a 4-ounce scoop. How many scoops will it take to measure 26 ounces of oats?

    a. Will the answer be more than 1 or less than 1?

    b. Write a multiplication equation and a division equation that represent this situation. Use “?” to represent the unknown quantity.

    a. Find the unknown quantity. If you get stuck, draw a diagram.

Mixed Nuts

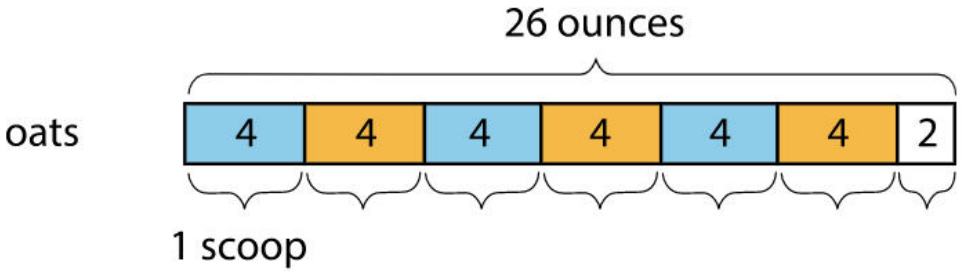
1. The recipe calls for 14 ounces of mixed nuts. To get that amount, Kiran uses 4 bags of mixed nuts.

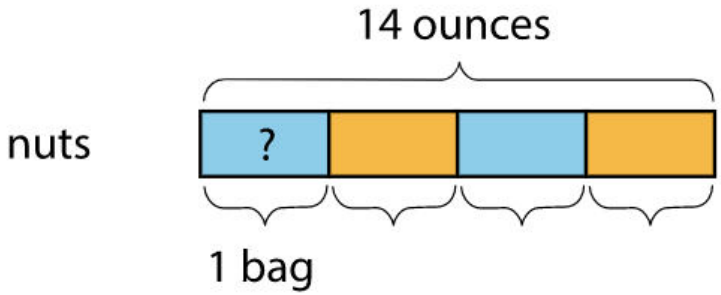
    a. Write a mathematical question that might be asked about this situation.

    b. What might the equation 14÷4=? represent in Kiran's situation?

    a. Find the quotient. Show your reasoning. If you get stuck, draw a diagram.

Let’s Talk About It





Lesson Synthesis

What information is unknown in each situation?

- Flour is sold in 3-pound bags. How many pounds are in 7 bags?
- Five tickets to a play cost $38. What does each ticket cost if they all cost the same?
- One quart is equal to 32 ounces. How many quarts are in 128 ounces?

What multiplication equation can we write?

What diagram can we draw to represent the quantities?

Students, write your response!

Today's Goals

- ❏ I can create a diagram or write an equation that represents division and multiplication questions.
- ❏ I can decide whether a division question is asking "how many groups?" or "how many in each group?"

Students, drag the icons! ✓ ✓ ? ?

Rice and Beans

Cool Down 3.4

Cool Down

1. Here are three problems. Select **all** problems that can be solved using division.

   a. Jada cut 4 pieces of ribbon that were equal in length. She used a total of 5 feet of ribbon. How long, in feet, was each piece of ribbon she cut?

   b. A chef bought 3 bags of beans. Each bag contains $1\frac{2}{5}$ kilograms of beans. How many kilograms of beans did she buy?

   c. A printer takes $2\frac{1}{2}$ seconds to print a flyer. It took 75 seconds to print a batch of flyers without stopping. How many flyers were in the batch?

2. Andre poured 27 ounces of rice into 6 containers. If all containers have the same amount of rice, how many ounces are in each container?

   a. Write an equation to represent the situation. Use a "?" to represent the unknown quantity.

   b. Find the unknown quantity. Show your reasoning.

Students, draw anywhere on this slide!