



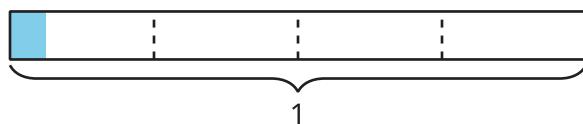
Represent Division of Unit Fractions by Whole Numbers

Let's use diagrams to represent division of a unit fraction by a whole number.

Warm-up

Estimation Exploration: How Much Is Shaded?

How much is shaded?



Record an estimate that is:

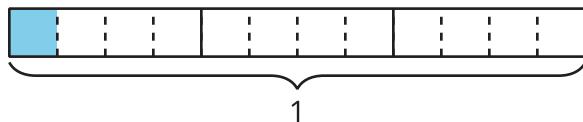
too low	about right	too high

Activity 1

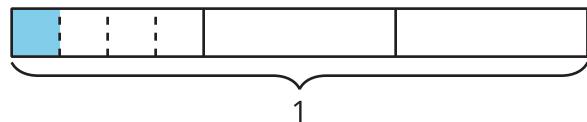
Diagrams, Equations, Situations

Priya and Mai use these diagrams to find the value of $\frac{1}{3} \div 4$.

Priya's diagram



Mai's diagram



1. How are the diagrams alike?

2. How are they different?

3. Find the value that makes the equation true.

$$\frac{1}{3} \div 4 = \underline{\quad}$$

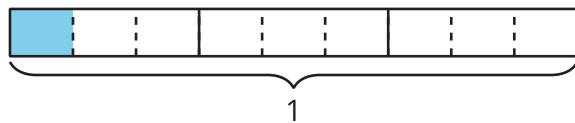
4. Han draws this diagram to represent

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

How does his diagram show

$$\frac{1}{3} \div 3?$$

Explain or show your reasoning.



5. Find the value that makes the equation true.

$$\frac{1}{3} \div 3 = \underline{\quad}$$

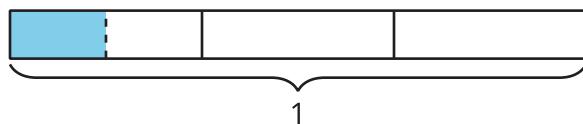
Explain or show your reasoning.

Activity 2

Noah's Work

- Find the value of $\frac{1}{3} \div 2$. Explain or show your reasoning.

- Noah is trying out Mai's diagram for this problem. Here is his work.



$\frac{1}{3} \div 2 = \frac{1}{2}$, because I divided $\frac{1}{3}$ into 2 equal parts and $\frac{1}{2}$ of $\frac{1}{3}$ is shaded in.

- What questions do you have for Noah?

- Noah's equation is incorrect. How can Noah revise his explanation?

Activity 3

Look for Patterns

1. Find the value that makes each equation true. Use a diagram if it is helpful.

a. $\frac{1}{4} \div 2 = \underline{\hspace{2cm}}$

b. $\frac{1}{4} \div 3 = \underline{\hspace{2cm}}$

c. $\frac{1}{4} \div 4 = \underline{\hspace{2cm}}$

2. What patterns do you notice?

3. How would you find the value of $\frac{1}{4}$ divided by any whole number? Explain or show your reasoning.