

## Lesson 1: Interpreting Division of a Fraction by a Whole Number—Visual Models

### Classwork

#### Opening Exercise

A

Write a division sentence to solve each problem.

- 8 gallons of batter are poured equally into 4 bowls. How many gallons of batter are in each bowl?
- 1 gallon of batter is poured equally into 4 bowls. How many gallons of batter are in each bowl?

Write a division sentence *and* draw a model to solve.

- 3 gallons of batter are poured equally into 4 bowls. How many gallons of batter are in each bowl?

- $8 \div 4 = 2$  gal of batter in each bowl.
- $1 \div 4 = 0.25$  gal. are in each bowl.
- $3 \div 4 = 0.75$  gal. in each bowl



or

$$12 \text{ fourths} \div 4 = 3 \text{ fourths } \frac{3}{4}$$

B

Write a multiplication sentence to solve each problem.

- One fourth of an 8-gallon pail is poured out. How many gallons are poured out?
- One fourth of a 1-gallon pail is poured out. How many gallons are poured out?

Write a multiplication sentence *and* draw a model to solve.

- One fourth of a 3-gallon pail is poured out. How many gallons are poured out?

- $\frac{1}{4} \cdot 8 = \frac{8}{4} = 2$  gal are poured out.
- $\frac{1}{4} \cdot 1 = \frac{1}{4}$  gal. are poured out.
- $\frac{1}{4} \cdot 3 = \frac{3}{4}$  gal. are poured out.

## Example 1

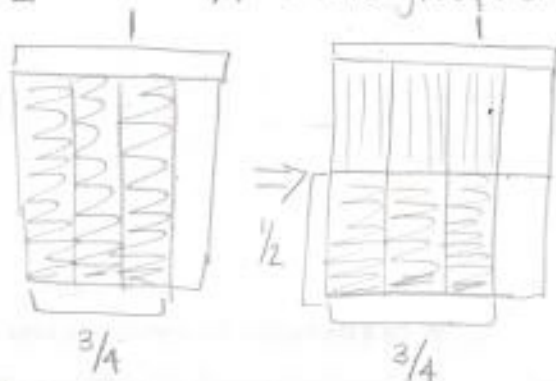
$\frac{3}{4}$  gallon of batter is poured equally into 2 bowls. How many gallons of batter are in each bowl?

$$\frac{3}{4} \div 2$$

$\frac{3}{4}$  is two groups of what?

$$\text{or } \frac{3}{4} \cdot \frac{1}{2} = \frac{3}{8}$$

$\frac{3}{4}$  is being  
shaved

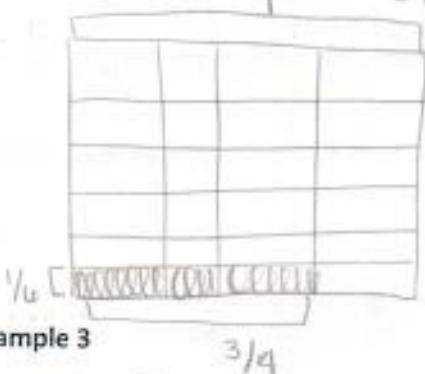


## Example 2

$\frac{3}{4}$  pan of lasagna is shared equally by 6 friends. What fraction of the pan will each friend get?

$$\frac{3}{4} \div 6$$

$$\text{or } \frac{3}{4} \cdot \frac{1}{6} = \frac{3}{24}$$

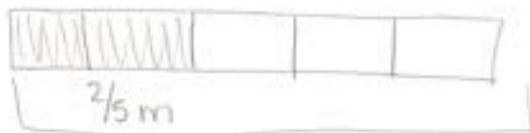


## Example 3

A rope of length  $\frac{2}{5}$  m is cut into 4 equal cords. What is the length of each cord?

$$\frac{2}{5} \div 4$$

$$\text{or } \frac{2}{5} \cdot \frac{1}{4} = \frac{2}{20} = \frac{1}{10} \text{ m}$$



S.2

Lesson 1:

Interpreting Division of a Fraction by a Whole Number—Visual Models

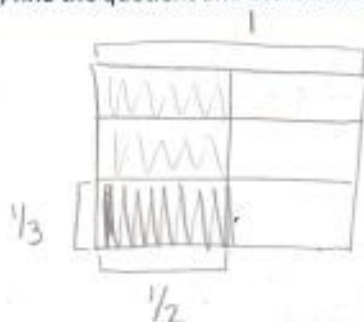
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## Exercises 1–6

Fill in the blanks to complete the equation. Then, find the quotient and draw a model to support your solution.

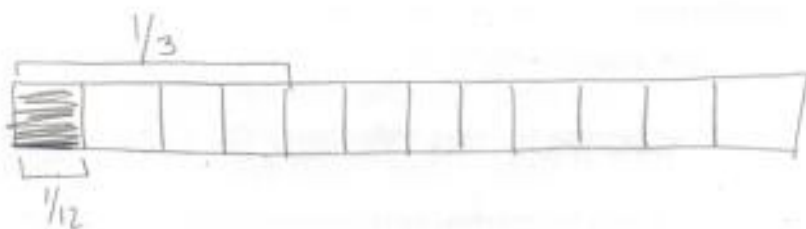
1.  $\frac{1}{2} \div 3 = \frac{\square}{3} \times \frac{1}{2}$

$\frac{1}{2} \div 3 = \frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$



2.  $\frac{1}{3} \div 4 = \frac{1}{4} \times \frac{1}{\square}$

$\frac{1}{3} \div 4 = \frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$



Find the value of each of the following.

3.  $\frac{1}{4} \div 5$

$\frac{1}{4} \cdot \frac{1}{5} = \frac{1}{20}$

$\frac{1}{4} \div 5 = \frac{1}{5}$  of  $\frac{1}{4} = \frac{1}{20}$

4.  $\frac{3}{5} \div 5$

$\frac{3}{5} \div 5 = \frac{1}{5}$  of  $\frac{3}{4} = \frac{3}{20}$

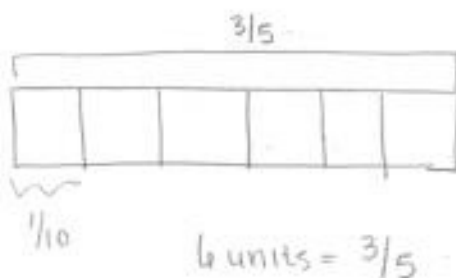
5.  $\frac{1}{5} \div 4$

$\frac{1}{5} \div 4 = \frac{1}{4}$  of  $\frac{1}{5} = \frac{1}{20}$

Solve. Draw a model to support your solution.

6.  $\frac{3}{5}$  pt. of juice is poured equally into 6 glasses. How much juice is in each glass?

$$1 \text{ unit } \frac{3}{5} \div 6 = \frac{1}{6} \cdot \frac{3}{5} = \frac{3}{30} = \frac{1}{10}$$



$$1 \text{ unit} = \frac{1}{10}$$

Each glass has  $\frac{1}{10}$  pint of juice.