Unit 3, Lesson 5

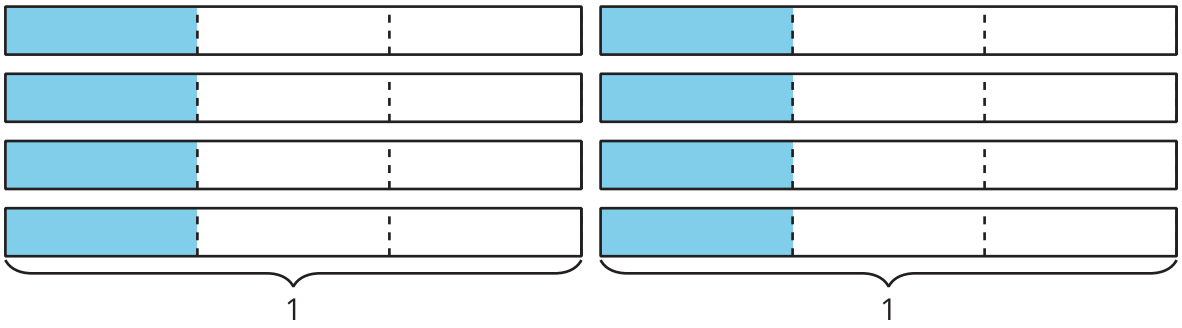
Equivalent Multiplication Expressions

Let's write multiplication expressions in different ways.

Warm-up

How Many Do You See: Thirds

How many thirds do you see? How do you see them?



Activity 1

Complete the Equations

1. Find the number that makes each equation true. Draw a diagram if it is helpful.

   $\frac{12}{5} = 12 \times$ _____ $\frac{12}{5} = 3 \times$ _____

   $\frac{12}{5} = 6 \times$ _____ $\frac{12}{5} = 2 \times$ _____

   $\frac{12}{5} = 4 \times$ _____ $\frac{12}{5} = 1 \times$ _____

2. Here are two sets of numbers:

   Set A: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

   Set B: $\frac{1}{7}, \frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{7}{7}$

   a. Choose a number from Set A and a number from Set B to complete this equation and make it true:

   $$\frac{6}{7} = \_\_\_\_\_ \times \_\_\_\_\_$$

   b. Choose a different number from Set A and from Set B to complete the equation to make it true.

   $$\frac{6}{7} = \_\_\_\_\_ \times \_\_\_\_\_$$

3. Explain or show how you know that the two equations you wrote are both true.

Activity 2

Fractions and Matching Expressions

Here is a set of expressions:

A. $6 \times \frac{1}{10}$

B. $2 \times 4 \times \frac{1}{9}$

C. $4 \times \frac{1}{5}$

D. $3 \times 2 \times \frac{1}{10}$

E. $5 \times 2 \times \frac{1}{12}$

F. $2 \times 2 \times \frac{1}{5}$

G. $4 \times 4 \times \frac{1}{9}$

H. $10 \times \frac{1}{12}$

I. $4 \times \frac{1}{12}$

1. Match each expression to one of the following fractions, if possible. Record your matches.

$\frac{4}{5}$ $\frac{10}{12}$ $\frac{6}{10}$ $\frac{8}{9}$

2. Complete each equation to make it true. Try to complete the equation, without using unit fractions.

a. $\frac{4}{5} = \_\_\_\_\_ \times \_\_\_\_\_$ $\frac{4}{5} = \_\_\_\_\_ \times \_\_\_\_\_$

b. $\frac{10}{12} = \_\_\_\_\_ \times \_\_\_\_\_$ $\frac{10}{12} = \_\_\_\_\_ \times \_\_\_\_\_$

c. $\frac{6}{10} = \_\_\_\_\_ \times \_\_\_\_\_$ $\frac{6}{10} = \_\_\_\_\_ \times \_\_\_\_\_$

d. $\frac{8}{9} = \_\_\_\_\_ \times \_\_\_\_\_$ $\frac{8}{9} = \_\_\_\_\_ \times \_\_\_\_\_$