



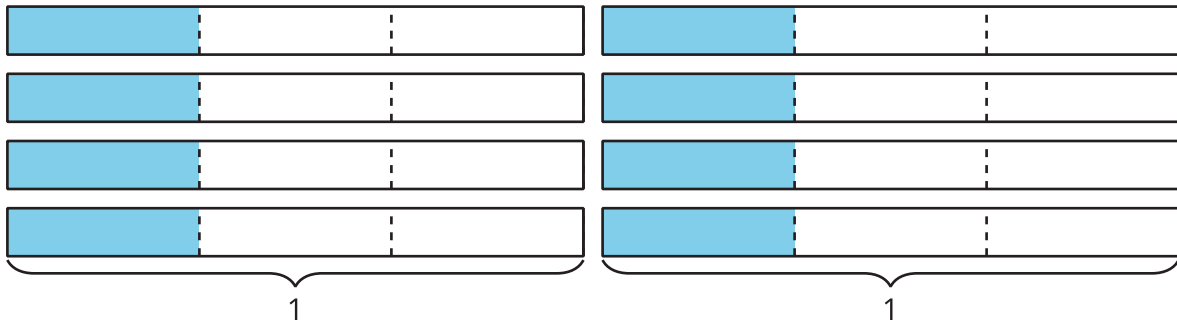
# Equivalent Multiplication Expressions

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.

$$\frac{12}{5} = 12 \times \underline{\hspace{2cm}}$$

$$\frac{12}{5} = 3 \times \underline{\hspace{2cm}}$$

$$\frac{12}{5} = 6 \times \underline{\hspace{2cm}}$$

$$\frac{12}{5} = 2 \times \underline{\hspace{2cm}}$$

$$\frac{12}{5} = 4 \times \underline{\hspace{2cm}}$$

$$\frac{12}{5} = 1 \times \underline{\hspace{2cm}}$$

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:

$$\frac{6}{7} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

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

$$\frac{6}{7} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

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.

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

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

$$\frac{4}{5}$$

$$\frac{10}{12}$$

$$\frac{6}{10}$$

$$\frac{8}{9}$$

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

a.  $\frac{4}{5} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$\frac{4}{5} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

b.  $\frac{10}{12} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$\frac{10}{12} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

c.  $\frac{6}{10} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$\frac{6}{10} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

d.  $\frac{8}{9} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$\frac{8}{9} = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

