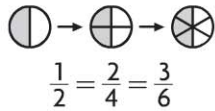


Name \_\_\_\_\_

## Equivalent Fractions on a Multiplication Table

**Essential Question** How can you generate equivalent fractions using a multiplication table?

**CONNECT** You can use a model to show the equivalent fractions  $\frac{1}{2}$ ,  $\frac{2}{4}$ , and  $\frac{3}{6}$ .



**Think:** The same amount is shaded in the models; the second model and third model have more parts shaded.

### UNLOCK the Problem

You can use a multiplication table for other equivalent fractions for  $\frac{1}{2}$ .

**Activity** What are some equivalent fractions for  $\frac{1}{2}$ ?

**Materials** ■ multiplication table

- Shade the row for the numerator of the fraction  $\frac{1}{2}$ . The numerator is 1.
- Shade the row for the denominator of the fraction  $\frac{1}{2}$ . The denominator is 2.
- Look across the rows for numerator 1 and denominator 2.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

- In a multiplication table, how are a product and the product below it related?
- \_\_\_\_\_
- \_\_\_\_\_

Write the products with the numerator 1 as a factor. Then write the products with the denominator 2 as a factor. The first three are done for you.

numerator  $\longrightarrow \frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{\square}{8} = \frac{6}{\square}$   
 denominator  $\longrightarrow$

**Math Talk** Why is the arrangement of factors and products in a multiplication table helpful in finding equivalent fractions?

- What do you notice about the products from the column for 1 to the column for 2?  
The numerator and denominator both increase by a factor of \_\_\_\_\_.
- What do you notice about the products from the column for 1 to the column for 3?  
The numerator and denominator both increase by a factor of \_\_\_\_\_.
- What do you notice about the products from the column for 1 to the column for 4?  
The numerator and denominator both increase by a factor of \_\_\_\_\_.

#### Math Idea

To find an equivalent fraction, you can multiply both the numerator and denominator by the same number.

So,  $\frac{2}{4}$ ,  $\frac{3}{6}$ ,  $\frac{4}{8}$ , and  $\frac{6}{12}$  are some equivalent fractions for  $\frac{1}{2}$ .

## Share and Show



Use a multiplication table to find equivalent fractions.

1. Write 3 equivalent fractions for  $\frac{1}{3}$ .

- Shade the row for the numerator of the fraction  $\frac{1}{3}$ . The numerator is \_\_\_\_\_.
- Shade the row for the denominator of the fraction  $\frac{1}{3}$ . The denominator is \_\_\_\_\_.

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30

- Look across the rows for numerator 1 and denominator 3.

Write the products with the numerator 1 as a factor. Then write the products with the denominator 3 as a factor.

$$\begin{array}{l} \text{numerator} \quad \longrightarrow \\ \text{denominator} \quad \longrightarrow \end{array} \frac{1}{3} = \frac{\square}{6} = \frac{\square}{\square} = \frac{\square}{\square}.$$

$$\text{So, } \frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square} = \frac{\square}{\square}$$

List 3 equivalent fractions.

2.  $\frac{1}{6}$

---

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

---

## On Your Own

Use a multiplication table to find three equivalent fractions.

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

---

5.  $\frac{3}{10}$

---

## Problem Solving



6. On Jan's soccer team,  $\frac{1}{5}$  of the players are on the field. What are three equivalent fractions that name the part of the team on the field?

---

7. Chen used  $\frac{3}{4}$  of a carton of milk. What are three equivalent fractions that name the part of the carton of milk that Chen used?

---