

# Lesson 3: Multiply Unit Fractions

## Standards Alignments

Addressing 5.NF.B.4.a

### Teacher-facing Learning Goals

- Find the product of 2 unit fractions.

### Student-facing Learning Goals

- Let's solve equations.

## Lesson Purpose

The purpose of this lesson is for students to represent products of unit fractions using diagrams and equations.

In previous lessons students represented products of unit fractions with diagrams and expressions. In this lesson students connect the diagrams and expressions, using the structure of the diagram to calculate the value of the expression. Students use the diagrams to find the value of many expressions and, toward the end of the lesson, they find the value of an expression, representing a product of unit fractions, without being given a diagram.

### Access for:

#### Students with Disabilities

- Engagement (Activity 2)

## Instructional Routines

Estimation Exploration (Warm-up), MLR1 Stronger and Clearer Each Time (Activity 2)

### Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

### Teacher Reflection Question

Some students may be multiplying the numerators and denominators without considering why this strategy works. Why is it important for students to understand how the diagrams represent products of fractions? What questions can you ask to help students connect the diagrams to the procedures they are using?

## Cool-down (to be completed at the end of the lesson)

🕒 5 min

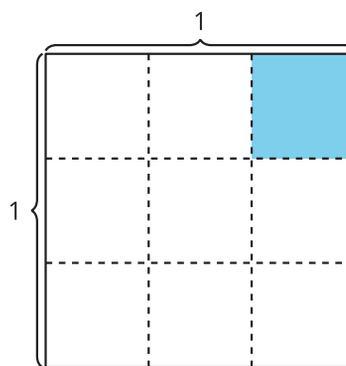
### Multiplication Equations

#### Standards Alignments

Addressing 5.NF.B.4.a

#### Student-facing Task Statement

- Write a multiplication equation to represent the shaded piece in the figure. Explain or show your reasoning.



- Complete each equation. Draw a diagram if it helps you.

a.  $\frac{1}{5} \times \frac{1}{4} = \underline{\hspace{2cm}}$

b.  $\frac{1}{2} \times \frac{1}{6} = \underline{\hspace{2cm}}$

#### Student Responses

- $\frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$  since there is  $\frac{1}{3}$  of a column shaded and that column is  $\frac{1}{3}$  of the square. The shaded piece is  $\frac{1}{9}$  of the square.

2.

a.  $\frac{1}{5} \times \frac{1}{4} = \frac{1}{20}$

b.  $\frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$