

## Lesson 16: Estimate Products (Optional)

### Standards Alignments

Addressing 5.NF.B.4, 5.NF.B.4.b

Building Towards 5.NF.B.4

### Teacher-facing Learning Goals

- Use estimation and the properties of operations to reason about the product of a whole number and a fraction greater than 1.

### Student-facing Learning Goals

- Let's estimate products of a whole number and a fraction.

### Lesson Purpose

The purpose of this lesson is for students to reason about the value of the product of a whole number and a fraction greater than 1 and use the properties of operations to find the product.

In previous lessons, students represented the decomposition of a rectangle with diagrams, expressions, and equations and found the product of a whole number and a fraction. In this optional lesson, students will practice multiplying fractions by using their understanding of the properties of operations. This time, they will not be provided with a diagram to represent each product. They will also apply what they have learned about multiplying fractions to reason about the proximity of fractional areas to whole number areas.

This lesson has a Student Section Summary.

### Access for:

#### Students with Disabilities

- Representation (Activity 1)

#### English Learners

- MLR5 (Activity 1)

### Instructional Routines

Notice and Wonder (Warm-up)

### Lesson Timeline

Warm-up 10 min

### Teacher Reflection Question

What evidence did you see in today's lesson that your students are extending their understanding of multiplication?

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

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

 5 min

### Estimate and Solve

#### Standards Alignments

Addressing 5.NF.B.4.b

#### Student-facing Task Statement

Jada says the value of each product is about 20. For each problem, explain why Jada's estimate is too high, just right, or too low.

1.  $5\frac{5}{6} \times 4 = \underline{\hspace{2cm}}$

20 is...                      too low                      too high                      about right

2.  $3 \times 6\frac{5}{8} = \underline{\hspace{2cm}}$

20 is...                      too low                      too high                      about right

#### Student Responses

- 20 is too low.  $5\frac{5}{6}$  is very close to 6, and  $6 \times 4 = 24$ .  $5\frac{5}{6} \times 4 = 23\frac{2}{6}$
- 20 is about right.  $3 \times 6 = 18$  and  $\frac{5}{8}$  is a little more than  $\frac{1}{2}$  so it's a little more than  $18 + \frac{3}{2}$ .