



Name: _____

Date: _____

Student Exploration: Multiplying Mixed Numbers

Vocabulary: mixed number, product

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

1. Suppose Ricardo has $2\frac{1}{2}$ feet of string. How many $\frac{1}{2}$ foot pieces can he make? _____

Explain. _____

2. How many $\frac{1}{4}$ foot pieces can he make? _____ Explain. _____

Gizmo Overview

In the *Multiplying Mixed Numbers* Gizmo, you will multiply **mixed numbers** (a whole number combined with a fraction), step-by-step. Here's how the Gizmo looks at first:

The expression for you to multiply is here.

Multiply $1\frac{1}{2} \cdot 3\frac{1}{3}$

The tiles give you four choices for the next step. Choose the one you think is correct and drag it into the white area above.

Solution steps: (drag the next solution step into the window above)

Multiply whole numbers and numerators	Cross multiply
Find common denominator	Rewrite as improper fractions

Click **Undo** to undo your last choice.

Click **New** to go to a different problem.

Undo New

Read your feedback in the Gizmo after each answer. Red light = incorrect. Green light = correct.

Proceed

Proceed

Click **Proceed** to go on to the next step.

Continue until you find the **product** (the result of multiplication). Then click **New** for a new problem to work on.



Activity: Finding the product	<u>Get the Gizmo ready:</u> <ul style="list-style-type: none"> You should see the expression $1\frac{1}{2} \cdot 3\frac{1}{3}$. If not, click Refresh in your browser. 	
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1. When you begin, you should see the expression shown to the right at the top of the Gizmo.

Multiply

$$1\frac{1}{2} \cdot 3\frac{1}{3}$$

- A. Choose the description that you think goes with the correct first step. If your choice is incorrect, read the given feedback and try again. What is the correct first step?

- B. The expression shown should now be $\frac{3}{2} \cdot \frac{10}{3}$. Do you need to find a common

denominator to find the product of two fractions? _____ Why or why not?

- C. What is the next step? _____

- D. Continue to choose the correct steps until you get to the final answer. Fill in the

equation at the right to show the product. $1\frac{1}{2} \cdot 3\frac{1}{3} =$ _____

2. Click **New**. You should now see the expression shown to the right in the Gizmo.

Multiply

$$2\frac{2}{5} \cdot 4\frac{5}{6}$$

- A. What is the correct first step, in words? _____

- B. Fill in the improper fractions that the given mixed numbers are equivalent to.

$$\frac{\boxed{}}{\boxed{}} \cdot \frac{\boxed{}}{\boxed{}}$$

- C. Fill in the equation at the right to show the product. $2\frac{2}{5} \cdot 4\frac{5}{6} =$ $\frac{\boxed{}}{\boxed{}}$

3. Click **New**. Work through more problems in the Gizmo. Be sure to read the feedback in the Gizmo along the way.

(Activity continued on next page)



Activity (continued from previous page)

4. Find each product below. Write all your steps in the space below each problem.

A. $2\frac{1}{2} \cdot 3\frac{3}{4}$

C. $5\frac{5}{6} \cdot 1\frac{5}{7}$

B. $5 \cdot 2\frac{3}{5}$

D. $3\frac{3}{8} \cdot 9\frac{1}{3}$

