

| Name: | Date: |  |
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## Student Exploration: Dividing Mixed Numbers

Vocabulary: mixed number, quotient, reciprocal

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

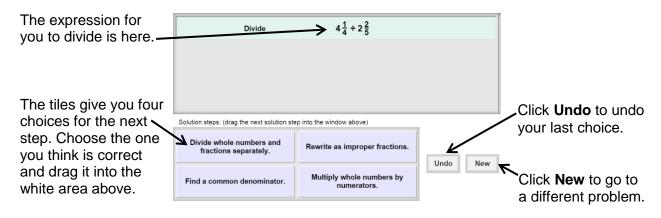
1. Kara has 6 cups of flour. She uses  $1\frac{1}{2}$  cups of flour for one batch of muffins. How many

batches can she make from the flour she has? \_\_\_\_\_ Explain. \_\_\_\_

2. She finds 3 more cups of flour. How many more batches can she make? \_\_\_\_\_

#### **Gizmo Overview**

In the *Dividing Mixed Numbers* Gizmo<sup>™</sup>, you will divide **mixed numbers** (a whole number combined with a fraction), step-by-step. Here's how the Gizmo looks at first:



Read your feedback in the Gizmo. (No feedback is given for correct answers.)

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



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



### Activity:

# Finding the quotient

### Get the Gizmo ready:

• You should see the expression  $4\frac{1}{4} \div 2\frac{2}{5}$ . If not, click **Refresh** in your browser.



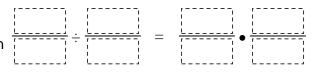
1. When you begin, you should see the expression shown to the right at the top of the Gizmo.

Divide 
$$4\frac{1}{4} \div 2\frac{2}{5}$$

- 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  $\frac{17}{4} \div \frac{12}{5}$ . Do you need to find a common denominator to find the quotient of two fractions? \_\_\_\_\_ Why or why not?
- C. Dividing by a fraction is the same as multiplying by its **reciprocal** (fraction with the numerator and denominator flipped). What is the reciprocal of  $\frac{12}{5}$ ?
- D. Continue to choose the correct steps until you get to the final answer. Fill in the equation at the right to show the quotient.  $4\frac{1}{4} \div 2\frac{2}{5} = \frac{1}{100}$
- 2. Click **New**. You should now see the expression shown at the right in the Gizmo.

Divide 
$$2\frac{1}{3} \div 3\frac{1}{9}$$

- A. What is the correct first step, in words?
- B. Fill in the equation to show the improper fractions you are dividing.
  Then fill in the equivalent multiplication after the "flip and multiply" step.



- C. Fill in the equation at the right to show the quotient.  $2\frac{1}{3} \div 3\frac{1}{9} = \frac{1}{2}$
- 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 quotient below. Write all your steps in the space below each problem.

A. 
$$1\frac{2}{3} \div 4\frac{1}{5}$$

C. 
$$6 \div 1\frac{4}{5}$$

B. 
$$2\frac{1}{2} \div 3\frac{3}{4}$$

D. 
$$5\frac{1}{3} \div 1\frac{1}{9}$$