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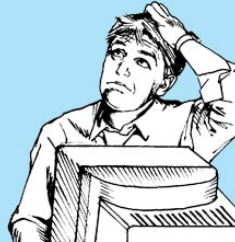
MATH 8 Chapter 3: Fraction Operations

Computational fluency and flexibility to extend to operations with fractions

6.1 Multiplying a Fraction and a Whole Number p.190 - 203

4 out of 3 people have trouble with fractions.

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numerator is less than the denominator

numerator is larger than the denominator

includes a whole number and proper fraction

The _____

_____ states that

Explore the Math

How can you model the multiplication of a fraction and a whole number?

1. A multiplication can be expressed as a repeated addition.

For example, $3 \times \frac{1}{2} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$.

- a) The pattern blocks model $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$. What is the sum?



If a yellow hexagon represents one whole, a red trapezoid represents $\frac{1}{2}$.



1

$\frac{1}{6}$

$\frac{1}{3}$

$\frac{1}{2}$

b) How does the diagram of the rectangles model the same addition?



c) Copy and complete the multiplication statement $3 \times \frac{1}{2} = \blacksquare$.

2. a) Model $4 \times \frac{1}{6}$ using pattern blocks.

b) Model the same multiplication using a diagram of rectangles.

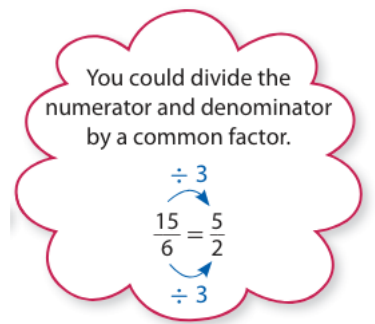
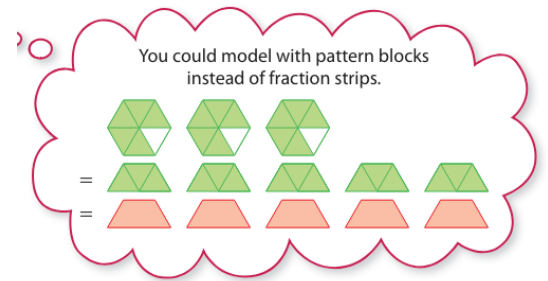
c) Copy and complete the multiplication statement $4 \times \frac{1}{6} = \blacksquare$.

3. a) Model $2 \times \frac{4}{3}$ using the method of your choice.

b) Copy and complete the multiplication statement $2 \times \frac{4}{3} = \blacksquare$.

Example 1: Multiply Using Manipulatives

Determine $3 \times \frac{5}{6}$. Express the product in lowest terms.

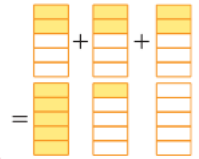


Show You Know

Determine each product using manipulatives. Express the product in lowest terms.

a) $2 \times \frac{5}{6}$ b) $4 \times \frac{2}{3}$

You could draw rectangles instead of using a number line.



Example 2: Multiply Using Diagrams

Determine $3 \times \frac{2}{5}$. Express the product in lowest terms.

Show You Know

Determine each product using a diagram. Express the product in lowest terms.

a) $2 \times \frac{3}{2}$ b) $4 \times \frac{5}{8}$

Example 3: Apply Multiplication With Fractions

A spider has eight legs. An ant has $\frac{3}{4}$ as many legs as a spider.

How many legs does an ant have?

Show You Know

Jenelle is making a recipe that calls for six scoops of flour. She wants to make only $\frac{2}{3}$ of the recipe. How many scoops will she need to use?

