

4th Grade Chapter 8

“Multiply Fractions by Whole Numbers” Reteach Lessons 8.1- 8.5

Name _____

Lesson 8.1
Reteach

Multiples of Unit Fractions

A unit fraction is a fraction with a numerator of 1. You can write a fraction as the product of a whole number and a unit fraction.

Write $\frac{7}{10}$ as the product of a whole number and a unit fraction.

Write $\frac{7}{10}$ as the sum of unit fractions.

$$\frac{7}{10} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$$

Use multiplication to show repeated addition.

$$\frac{7}{10} = 7 \times \frac{1}{10}$$

$$\text{So, } \frac{7}{10} = 7 \times \frac{1}{10}$$

The product of a number and a counting number is a multiple of the number. You can find multiples of unit fractions.

List the next 4 multiples of $\frac{1}{8}$.

Make a table and use repeated addition.

$1 \times \frac{1}{8}$	$2 \times \frac{1}{8}$	$3 \times \frac{1}{8}$	$4 \times \frac{1}{8}$	$5 \times \frac{1}{8}$
$\frac{1}{8}$	$\frac{1}{8} + \frac{1}{8}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$	$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{5}{8}$

The next 4 multiples of $\frac{1}{8}$ are $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, and $\frac{5}{8}$.

Name _____

Lesson 8.2
Reteach

Multiples of Fractions

You have learned to write multiples of unit fractions. You can also write multiples of other fractions.

Write the next 4 multiples of $\frac{2}{5}$.

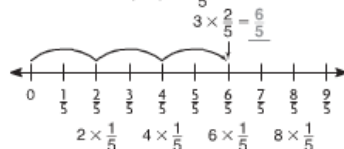
Make a table.

$1 \times \frac{2}{5}$	$2 \times \frac{2}{5}$	$3 \times \frac{2}{5}$	$4 \times \frac{2}{5}$	$5 \times \frac{2}{5}$
$\frac{2}{5}$	$\frac{2}{5} + \frac{2}{5}$	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5}$	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5}$	$\frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5}$
$\frac{2}{5}$	$\frac{4}{5}$	$\frac{6}{5}$	$\frac{8}{5}$	$\frac{10}{5}$

So, the next 4 multiples of $\frac{2}{5}$ are $\frac{4}{5}$, $\frac{6}{5}$, $\frac{8}{5}$, and $\frac{10}{5}$.

Write $3 \times \frac{2}{5}$ as the product of a whole number and a unit fraction.

Use a number line. Make three jumps of $\frac{2}{5}$.



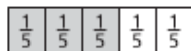
So, $3 \times \frac{2}{5} = \frac{6}{5}$, or $6 \times \frac{1}{5}$.

Multiply a Fraction by a Whole Number Using Models

You can use a model to multiply a fraction by a whole number.

Find the product of $4 \times \frac{3}{5}$.

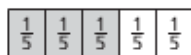
Use fraction strips. Show 4 groups of $\frac{3}{5}$ each.



1 group of $\frac{3}{5} = \frac{3}{5}$



2 groups of $\frac{3}{5} = \frac{6}{5}$



3 groups of $\frac{3}{5} = \frac{9}{5}$



4 groups of $\frac{3}{5} = \frac{12}{5}$

So, $4 \times \frac{3}{5} = \frac{12}{5}$.

Multiply a Fraction or Mixed Number by a Whole Number

To multiply a fraction by a whole number, multiply the numerators.
Then multiply the denominators.

A recipe for one loaf of bread calls for $2\frac{1}{4}$ cups of flour. How many cups of flour will you need for 2 loaves of bread?

Step 1 Write and solve an equation.

$$\begin{aligned}
 2 \times 2\frac{1}{4} &= \frac{2}{1} \times \frac{9}{4} && \text{Write 2 as } \frac{2}{1}. \text{ Write } 2\frac{1}{4} \text{ as a fraction.} \\
 &= \frac{2 \times 9}{1 \times 4} && \text{Multiply the numerators.} \\
 &= \frac{18}{4} && \text{Then multiply the denominators.} \\
 &= \frac{18}{4} && \text{Simplify.}
 \end{aligned}$$

Step 2 Write the product as a mixed number.

$$\begin{aligned}
 \frac{18}{4} &= \underbrace{\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}}_1 + \underbrace{\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}}_1 + \underbrace{\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}}_1 + \underbrace{\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}}_1 + \frac{1}{4} + \frac{1}{4} \\
 &= \frac{4}{4} + \frac{1}{4} + \frac{1}{4} && \text{Combine the wholes. Then combine the remaining parts.} \\
 &= \frac{4}{4} + \frac{2}{4} && \text{Add. Write the sum as a mixed number.} \\
 &= 1\frac{2}{4} \text{, or } 1\frac{1}{2}
 \end{aligned}$$

So, you will need $1\frac{1}{2}$ cups of flour.

Problem Solving • Comparison Problems with Fractions

The Great Salt Lake in Utah is about $\frac{4}{5}$ mile above sea level. Lake Titicaca in South America is about 3 times as high above sea level as the Great Salt Lake. About how high above sea level is Lake Titicaca?

Read the Problem	Solve the Problem
What do I need to find? I need to find <u>about how high above sea level Lake Titicaca is.</u>	Draw a comparison model. Compare the heights above sea level of the Great Salt Lake and Lake Titicaca, in miles. Great Salt Lake $\frac{4}{5}$ Lake Titicaca $\frac{4}{5}$ $\frac{4}{5}$ $\frac{4}{5}$ t
What information do I need to use? The Great Salt Lake is about $\frac{4}{5}$ mile above sea level. Lake Titicaca is about <u>3</u> times as high above sea level.	Write an equation and solve. t is the height above sea level of <u>Lake Titicaca</u> , in miles. $t = \frac{3}{1} \times \frac{4}{5}$ Write an equation. $t = \frac{12}{5}$ Multiply. $t = \frac{22}{5}$ Write the fraction as a mixed number.
How will I use the information? I can <u>draw a diagram</u> to compare the heights.	
So, Lake Titicaca is about $\frac{22}{5}$ miles above sea level.	