

Learning Objective: Students will be able to use a visual model and a formal rule to divide by a fraction.

Warm Up

$$\begin{array}{r} 705 \\ \times 156 \\ \hline \end{array}$$

$$\begin{array}{r} 183 \\ \times 515 \\ \hline \end{array}$$

$$\begin{array}{r} 625 \\ \times 208 \\ \hline \end{array}$$

$$\begin{array}{r} 276 \\ \times 150 \\ \hline \end{array}$$

$$\begin{array}{r} 957 \\ \times 393 \\ \hline \end{array}$$

$$\begin{array}{r} 547 \\ \times 404 \\ \hline \end{array}$$

$$\begin{array}{r} 719 \\ \times 628 \\ \hline \end{array}$$

$$\begin{array}{r} 919 \\ \times 800 \\ \hline \end{array}$$

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Warm Up Answers

$$\begin{array}{r} 705 \\ \times 156 \\ \hline 4,230 \\ 35,250 \\ 70,500 \\ \hline 109,980 \end{array}$$

$$\begin{array}{r} 183 \\ \times 515 \\ \hline 915 \\ 1,830 \\ 91,500 \\ \hline 94,245 \end{array}$$

$$\begin{array}{r} 625 \\ \times 208 \\ \hline 5,000 \\ 0 \\ 125,000 \\ \hline 130,000 \end{array}$$

$$\begin{array}{r} 276 \\ \times 150 \\ \hline 0 \\ 13,800 \\ 27,600 \\ \hline 41,400 \end{array}$$

$$\begin{array}{r} 957 \\ \times 393 \\ \hline 2,871 \\ 86,130 \\ 287,100 \\ \hline 376,101 \end{array}$$

$$\begin{array}{r} 547 \\ \times 404 \\ \hline 2,188 \\ 0 \\ 218,800 \\ \hline 220,988 \end{array}$$

$$\begin{array}{r} 719 \\ \times 628 \\ \hline 5,752 \\ 14,380 \\ 431,400 \\ \hline 451,532 \end{array}$$

$$\begin{array}{r} 919 \\ \times 800 \\ \hline 0 \\ 0 \\ 735,200 \\ \hline 735,200 \end{array}$$

Lesson 2.2

October 30, 2014

Essential Question:

How can you divide by a fraction?

Lesson Objective:

Students will be able to:

use a visual model and a formal rule to divide by a fraction.

Self-Evaluation Scale

Score	Description
4	I can teach other students how to use a visual model and a formal rule to divide by a fraction.
3	I can use a visual model and a formal rule to divide by a fraction.
2	I recognize, but still need help to use a visual model and a formal rule to divide by a fraction.
1	I do not know how to use a visual model and a formal rule to divide by a fraction.

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Homework Answers

$$\Delta = \frac{1}{2}bh$$

2.1 Record and Practice Journal

Multiply. Write the answer in simplest form.

1. $\frac{1}{6} \times \frac{5}{8}$
 $\frac{5}{48}$

2. $\frac{7}{8} \times 3\frac{1}{3}$
 $2\frac{1}{3}$

3. $\frac{8}{3} \times \frac{3}{5}$
 $\frac{8}{5}$

4. $\frac{7}{8} \times 2\frac{1}{3}$
 $2\frac{1}{24}$

$\frac{7}{8} \cdot \frac{7}{3}$
 $\frac{49}{24}$

5. $7 \times 3\frac{9}{14}$
 $25\frac{1}{2}$

$7 \cdot 3\frac{9}{14}$
 $21 \cdot \frac{51}{14}$
 $\frac{1071}{14}$
 $25\frac{1}{2}$

6. $5\frac{5}{9} \times 2\frac{7}{10}$
 15

$5\frac{5}{9} \cdot 2\frac{7}{10}$
 $\frac{50}{9} \cdot \frac{21}{10}$
 $\frac{1050}{90}$
 15

7. You reserve $\frac{2}{5}$ of the seats on a tour bus. You are able to fill $\frac{5}{8}$ of the seats you reserve. What fraction of the seats on the bus are you able to fill?

$\frac{1}{4}$

$\frac{2}{5} \cdot \frac{5}{8}$
 $\frac{10}{40}$
 $\frac{1}{4}$

8. A triangle has a base of $5\frac{2}{3}$ inches and a height of 3 inches. What is the area of the triangle?

$8\frac{1}{2} \text{ in.}^2$

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Activity 1 & 2

With a partner, work on Activity 1 & 2 on pages 35 & 36 of your Big Ideas Record and Practice Journal.

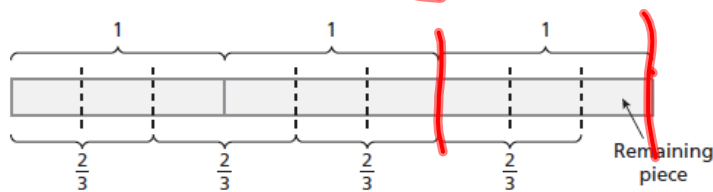
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1 ACTIVITY: Dividing by a Fraction

Work with a partner. Write the division problem and solve it using a model.

a. How many two-thirds are in three?

The division problem is $3 \div \frac{2}{3}$.



$2 \frac{1}{2} \div \frac{1}{2}$

$3 \div \frac{1}{2} = 6$

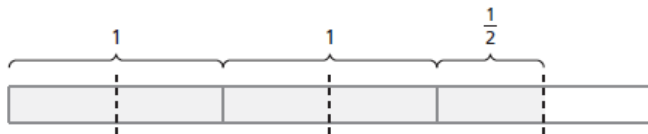
How many groups of $\frac{2}{3}$ are in 3? 4

The remaining piece represents $\frac{1}{2}$ of $\frac{2}{3}$.

So, there are $4 \frac{1}{2}$ groups of $\frac{2}{3}$ in 3.

So, $3 \div \frac{2}{3} = 4 \frac{1}{2}$.

b. How many halves are in five halves?



c. How many four-fifths are in eight?

$$\frac{-1}{\cancel{2}} \cdot \frac{\cancel{2}}{1} = \frac{-1}{1}$$

$$\frac{-1}{1} \cdot \frac{1}{1}$$

$$\frac{1}{2} \cdot \frac{-1}{1} = \frac{-1}{2}$$

$$\frac{-1}{2}$$

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

October 30, 2014 Period 3 Lesson 2.2

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Work with a partner.

a. Complete each table.

Division Table

$8 \div 16$	$\frac{1}{2}$
$8 \div 8$	1
$8 \div 4$	2
$8 \div 2$	4
$8 \div 1$	8
$8 \div \frac{1}{2}$	16
$8 \div \frac{1}{4}$	32
$8 \div \frac{1}{8}$	64

Multiplication Table

$8 \times \frac{1}{16}$	$\frac{1}{2}$
$8 \times \frac{1}{8}$	1
$8 \times \frac{1}{4}$	2
$8 \times \frac{1}{2}$	4
8×1	8
8×2	16
8×4	32
8×8	64

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Two numbers whose product is 1 are **reciprocals**. To write the reciprocal of a number, write the number as a fraction. Then invert the fraction.

So, the reciprocal of a fraction $\frac{a}{b}$ is $\frac{b}{a}$, where a and $b \neq 0$.

The Meaning of a Word ● Invert

When you **invert** a glass, you turn it over.



$$\frac{1}{2} \quad \frac{2}{1} = \frac{2}{2} = 1$$

$$\frac{62}{7563} \quad \frac{7563}{62} = 1$$

Div = mult of
the reciprocal

$$4 \div 2 = \frac{4}{1} \cdot \frac{1}{2} = 2$$

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1 Writing Reciprocals

	<i>Original Number</i>	<i>Fraction</i>	<i>Reciprocal</i>	<i>Check</i>
a.	$\frac{3}{5}$	$\frac{3}{5}$	$\frac{5}{3}$	$\frac{3}{5} \times \frac{5}{3} = 1$
b.	$\frac{9}{5}$	$\frac{9}{5}$	$\frac{5}{9}$	$\frac{9}{5} \times \frac{5}{9} = 1$
c.	2	$\frac{2}{1}$	$\frac{1}{2}$	$\frac{2}{1} \times \frac{1}{2} = 1$

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On Your Own

Write the reciprocal of the number.

1. $\frac{3}{4}$

2. 5

3. $\frac{7}{2}$

4. $\frac{4}{9}$

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