

Lesson 2.3

October 14, 2013

**Activity**  
**2.3** **Warm Up**  
For use before Activity 2.3

**Write the improper fraction as a mixed number.**

1.  $\frac{12}{5}$

2.  $\frac{21}{4}$

3.  $\frac{16}{9}$

4.  $\frac{27}{6}$

5.  $\frac{80}{3}$

6.  $\frac{55}{9}$

Homework Review  
Page 38 in the Big  
Ideas Record and  
Pracce Journal

### 2.2 Record and Practice Journal

Complete the statement.

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

3.  $3 + \frac{1}{12} = 36$                       4.  $\frac{4}{9} + \frac{1}{27} = 12$

Evaluate the expression.

5.  $\frac{1}{3} + \frac{1}{6}$                       6.  $\frac{3}{8} + \frac{5}{8}$                       7.  $6 + \frac{2}{5}$

**2**                       **$\frac{3}{5}$**                       **15**

8.  $\frac{4}{9} + \frac{2}{3} + \frac{5}{6}$                       9.  $\frac{1}{3} + \frac{4}{7} + \frac{3}{10}$                       10.  $\frac{7}{8} + \frac{4}{5} + \frac{7}{20}$

**$\frac{4}{5}$**                        **$2\frac{5}{21}$**                       **2**

11. In a jewelry store, rings make up  $\frac{5}{9}$  of the inventory. Earrings make up  $\frac{4}{15}$  of the inventory. How many times greater is the ring inventory than the earring inventory?

**$2\frac{1}{12}$**

$$\frac{1}{3} + \frac{4}{7} = \frac{3}{10}$$

$$\frac{4}{7} \cdot \frac{10}{3}$$

$$\frac{1}{3} + \frac{40}{21}$$

$$\frac{7}{21} + \frac{40}{21} = \frac{47}{21} = 2\frac{5}{21}$$

$$\frac{5}{9} \div \frac{4}{15}$$

$$\frac{5}{9} \cdot \frac{15}{4} = \frac{25}{12} = 2\frac{1}{12}$$

# Essential Question

How can you divide by a mixed number?

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# LessonTarget

To be able to:

- use a visual model and a formal rule to divide with mixed numbers.

## Self-Evaluation Rubric

Score	Description
4	I can teach other students how to use a visual model and a formal rule to divide by with mixed numbers.
3	I can use a visual model and a formal rule to divide by with mixed numbers.
2	I recognize a visual model and a formal rule to divide by with mixed numbers.
1	I do not know how to use a visual model and a formal rule to divide by with mixed numbers.

# Activity1

With a partner, complete Activity 1 on page 39 & 40 in your Big Ideas Record and Practice Journal.

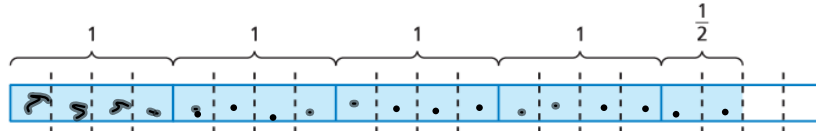


## Activity2

With a partner, complete Activity 2 on page 40 & 41 in your Big Ideas Record and Practice Journal.

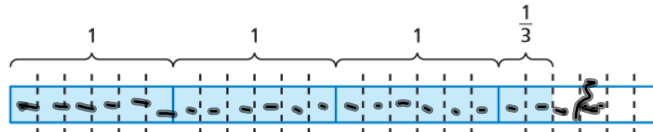
$$4\frac{1}{2} \div \frac{3}{4}$$

a. How many three-fourths are in four and one-half?



$$3\frac{1}{3} \div \frac{5}{6}$$

b. How many five-sixths are in three and one-third?



c. How many three-eighths are in three and three-fourths?



d. How many one and one-halfs are in six?

$$2\frac{4}{3}$$

e. How many one and one-fifths are in five?

f. How many one and one-fourths are in four and one-half?

g. How many two and one-thirds are in five and five-sixths?

$$3\frac{1}{3}$$

$$5\frac{5}{6} \div 2\frac{1}{3}$$

$$5\frac{5}{6} \div \frac{2}{3}$$





 **Key Idea****Dividing Mixed Numbers**

Write each mixed number as an improper fraction. Then divide as you would with proper fractions.



## 2 Dividing Mixed Numbers

Find  $3\frac{5}{6} \div 1\frac{2}{3} = 2\frac{3}{10}$

$$\begin{aligned} 3\frac{5}{6} \div 1\frac{2}{3} &= \frac{23}{6} \div \frac{5}{3} \\ &= \frac{23}{6} \times \frac{3}{5} \\ &= \frac{23 \times \cancel{3}^1}{\cancel{2} \times 5} \\ &= \frac{23}{10}, \text{ or } 2\frac{3}{10} \end{aligned}$$

∴ So, the quotient is  $2\frac{3}{10}$ .

**Estimate**  $4 \div 2 = 2$

Write each mixed number as an improper fraction.

Multiply by the reciprocal of  $\frac{5}{3}$ , which is  $\frac{3}{5}$ .

Multiply fractions. Divide out common factors.

Simplify.

**Reasonable?**  $2\frac{3}{10} \approx 2$  ✓

# TryIt!

Try numbers 13 - 24 on page 74  
of your Big Ideas Text Book.

$$9\frac{1}{6} \div \frac{5}{6}$$

$$\frac{55}{6} \div \frac{5}{6} = \frac{55}{6} \cdot \frac{6}{5} = \frac{11}{1} = 11$$

$$13 \div 10\frac{5}{6}$$

$$\frac{13}{1} \div \frac{65}{6}$$

$$\frac{13}{1} \cdot \frac{6}{65} = \frac{6}{5} = 1\frac{1}{5}$$



$$12 \div 5 \frac{9}{11}$$

$$\frac{12}{1} \div \frac{64}{11}$$

$$3 \frac{12}{1} \cdot \frac{11}{64} = \frac{33}{16} = 2 \frac{1}{16}$$

$$8\frac{1}{3} \div \frac{2}{3}$$

$$\frac{25}{3} \div \frac{2}{3}$$

$$-\frac{50}{6} \div \frac{2}{3} = \frac{50}{2} \div \frac{2}{3}$$

$$14\frac{1}{2} \div 1\frac{3}{5}$$

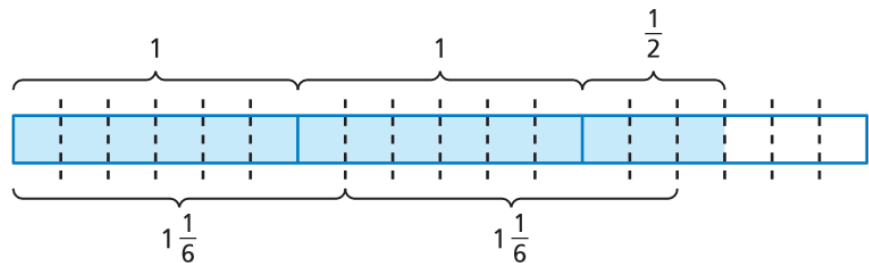
$$\frac{29}{2} \div \frac{8}{5}$$

$$\frac{29}{2} \cdot \frac{5}{8} = \frac{145}{8} = 18\frac{1}{8}$$

## On Your Own

**Reasoning** At a track meet, the longest shot-put throw by a boy is 25 feet 8 inches. The longest shot-put throw by a girl is 19 feet 3 inches. How many times greater is the longest shot-put throw by the boy than by the girl?

**LOGIC** Alexei uses the model shown to state that  $2\frac{1}{2} \div 1\frac{1}{6} = 2\frac{1}{6}$ . Is Alexei correct? Justify your answer using the model.



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# Homework

Big Ideas Record and  
Pracce Journal

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