Area of Emphasis 2

Launch Into
Parts of a Whole Amount

Ahoy, Matey!

The waters off the coast of Florida are rich with shipwrecks. It is estimated that over 1,000 ships have met a watery end off Florida's coast. Most were due to bad weather or human error. However, in the years between 1650 and 1720, the shipwrecks may have been caused by pirates.

The pirates would have been after the treasures carried between Spain and America. Often the treasures were Spanish gold coins, or doubloons , which were worth about 16 dollars. Doubloons could be cut in half, and those halves could be cut again, and then again. Each half doubloon was worth 8 dollars, and half of a half, or a fourth of a doubloon, was worth 4 dollars. An eighth of a doubloon was worth 2 dollars.

Who knows what treasures lie beneath the sea? Each time a sunken ship is found, a little more about Florida and its history becomes known.

Pieces of Eight

- Spanish gold and silver coins could be cut into 8 parts. This is where the term *pieces of eight* comes from.
- An early Spanish coin was called the *real de a ocho*, which translates to "eight *reales*," that is, "eight royals."
- Most modern currency today, like the U.S. dollar, is based on the silver real.
- *Doubloon* is now used as a slang term to describe money.

Three Reads

First, read the story to understand the situation.

Next, read to understand the math.

Then, read to ask what mathematical questions could be asked about the situation.

Juana is looking for seashells on the beach and uncovers some old coins buried deep in the sand. She finds 1 whole doubloon, $\frac{1}{2}$ doubloon, $\frac{1}{4}$ doubloon, and $\frac{2}{8}$ doubloons.

Go Online
For the interactive lesson

Read the final question. Make a plan to solve the problem.

Juana is looking for seashells on the beach and uncovers some old coins buried deep in the sand. She finds 1 whole doubloon, $\frac{1}{2}$ doubloon, $\frac{1}{4}$ doubloon, and $\frac{2}{8}$ doubloons.

In dollars, how much money does Juana find?

Write, model, or draw to solve the problem.

Discuss with a partner or in a group.

Math Talk

The *escudo* was a coin that was worth an eighth of a *doubloon*, and the *pistole* was a coin worth a fourth of a doubloon. Work with a partner to find the different coin combinations that were worth 1 doubloon.

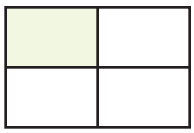
Chapter 8

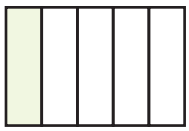
Name _____

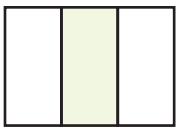
Fraction Equivalence

Show What You Know

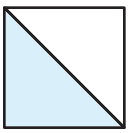
Part of a Whole
Write the fraction for the shaded part.

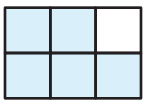
1.  _____

2.  _____

3.  _____

Parts of a Whole
Write a fraction that names the shaded part.

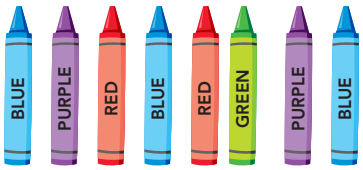
4.  _____

5.  _____

6.  _____

Fractions of a Set

7. What fraction of the crayons are blue?



_____

8. What fraction of the marbles are pink?

_____

MATH in the Real World

A pizza is divided into 4 or 8 equal slices so that 4 friends can share it. If they do 4 slices, what fraction is each slice? If they do 8 slices, how many slices will each friend get? What is the fraction for each slice? Compare the amount of pizza one friend eats when its, cut into 4 or 8 slices.

Vocabulary Builder

Go Online For more help

Visualize It

Complete the flow map by using the words with a ✓.

Whole Numbers and Fractions

What is it?	What are some examples?
_____ →	6: 1, 2, 3, 6
_____ →	6: 6, 12, 18, 24, ...
_____ →	$\frac{1}{6}, \frac{2}{3}, \frac{4}{5}$
_____ →	$\frac{1}{3}$
_____ →	$\frac{1}{3}$

Connect to Vocabulary

Review Words
common denominator
common multiple
✓ denominator
✓ factor
✓ fraction
✓ multiple
✓ numerator

Preview Words
equivalent fractions
mixed number
unit fraction

Understand Vocabulary

Complete the sentences.

1. A _____ tells the part of the whole that 1 piece represents. A _____ always has a numerator of 1.
2. _____ name the same amount.
3. A _____ is a common multiple of two or more denominators.
4. A _____ is a number represented by a whole number and a fraction.

Name _____

Equivalent Fractions

Florida's B.E.S.T.

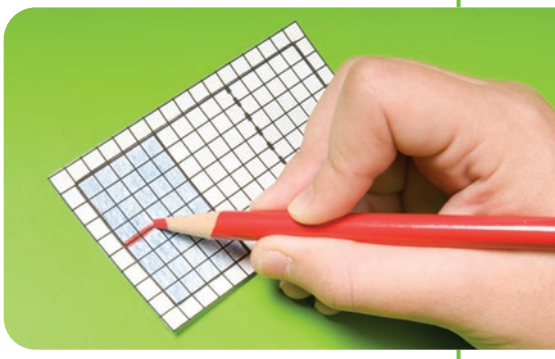
- **Fractions** 4.FR.1.3
- **Mathematical Thinking & Reasoning** MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.7.1

I Can use models to show equivalent fractions.

Investigate

Materials ■ color pencils

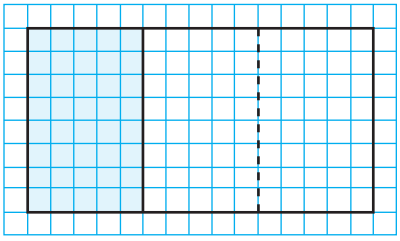
Vy cut a pan of lasagna into third-size pieces. He kept $\frac{1}{3}$ and gave the rest away. Vy will not eat his part all at once. How can he cut his part into smaller, equal-sized pieces?



A. Draw on the model to show how Vy could cut his part of the lasagna into 2 equal pieces.

You can rename these 2 equal pieces as a fraction of the original pan of lasagna.

Suppose Vy had cut the original pan of lasagna into equal pieces of this size.



How many pieces would there be? _____

What fraction of the pan is 1 piece? _____

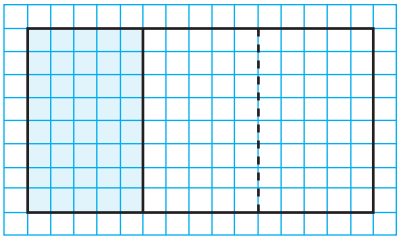
What fraction of the pan is 2 pieces? _____

You can rename $\frac{1}{3}$ as _____.

B. Now, draw on the model to show how Vy could cut his part of the lasagna into 4 equal pieces.

You can rename these 4 equal pieces as a fraction of the original pan of lasagna.

Suppose Vy had cut the original pan of lasagna into equal pieces of this size.



How many pieces would there be? _____

What fraction of the pan is 1 piece? _____

What fraction of the pan is 4 pieces? _____

You can rename $\frac{1}{3}$ as _____.

C. Fractions that name the same amount are **equivalent fractions**. Write the equivalent fractions.

$$\frac{1}{3} = \frac{\square}{\square} = \frac{\square}{\square}$$

Draw Conclusions

1. Compare the models for $\frac{1}{3}$ and $\frac{2}{6}$. How does the number of parts relate to the sizes of the parts?

2. Describe how the numerators are related and how the denominators are related in $\frac{1}{3} = \frac{2}{6}$.

3. Does $\frac{1}{3} = \frac{3}{9}$? Explain.

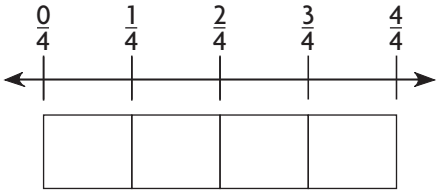
Make Connections

Savannah has $\frac{2}{4}$ yard of ribbon, and Isabel has $\frac{3}{8}$ yard of ribbon. How can you determine whether Savannah and Isabel have the same length of ribbon?

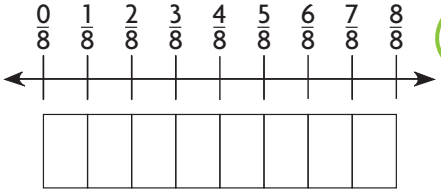
The equal sign (=) and not equal to sign (≠) show whether fractions are equivalent.

Tell whether $\frac{2}{4}$ and $\frac{3}{8}$ are equivalent. Write = or ≠.

STEP 1 Shade the amount of ribbon Savannah has.



STEP 2 Shade the amount of ribbon Isabel has.



Think: $\frac{2}{4}$ yard is not the same amount as $\frac{3}{8}$ yard.

Math Talk

MTR 2.1 Demonstrate understanding in multiple ways.

How could you use a model to show that $\frac{4}{8} = \frac{1}{2}$?

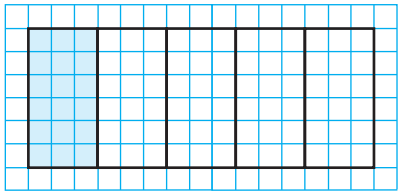
So, $\frac{2}{4}$ ◯ $\frac{3}{8}$. This means that Savannah and Isabel _____ have the same length of ribbon.

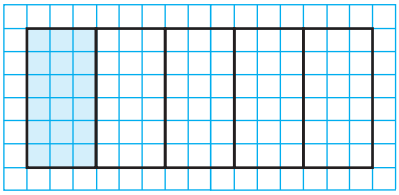
Name _____

Share and Show

Math Board

Use the model to write an equivalent fraction.

1. 

$\frac{1}{5}$ =  _____

2. 

$\frac{2}{3}$ =  _____

Tell whether the fractions are equivalent. Write = or ≠.

3. $\frac{1}{6} \bigcirc \frac{2}{12}$

4. $\frac{2}{5} \bigcirc \frac{6}{10}$

5. $\frac{4}{12} \bigcirc \frac{1}{3}$

6. $\frac{8}{5} \bigcirc \frac{4}{2}$

7. $\frac{6}{5} \bigcirc \frac{12}{10}$

8. $\frac{1}{2} \bigcirc \frac{5}{10}$

On Your Own

9. Manny used 8 tenth-size parts to model $\frac{8}{10}$. Ami used fewer parts to model an equivalent fraction. How does the size of a part in Ami's model compare to the size of a tenth-size part? What size part did Ami use?

10. MTR How many eighth-size parts do you need to model $\frac{3}{4}$? Explain.

11. Wren brought two pizzas to a party. He says that since $\frac{1}{4}$ of each pizza is left, the same amount of each pizza is left. What is his error?

MATH on the Spot

Describe Wren's error.

Draw models of 2 pizzas Wren could have brought to the party that would have made his statement correct. Use shading to show $\frac{1}{4}$ of each pizza.

12. For 12a–12d, tell whether the fractions are equivalent by selecting the correct symbol.

12a. $\frac{3}{15}$ $\boxed{\begin{matrix}= \\ \neq\end{matrix}}$ $\frac{1}{6}$

12b. $\frac{3}{4}$ $\boxed{\begin{matrix}= \\ \neq\end{matrix}}$ $\frac{16}{20}$

12c. $\frac{3}{2}$ $\boxed{\begin{matrix}= \\ \neq\end{matrix}}$ $\frac{12}{8}$

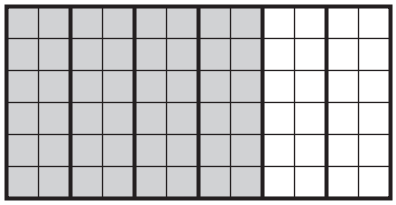
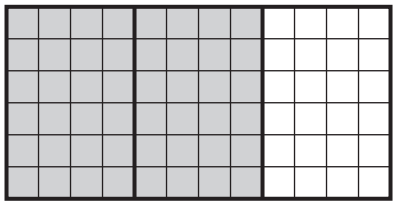
12d. $\frac{8}{10}$ $\boxed{\begin{matrix}= \\ \neq\end{matrix}}$ $\frac{4}{5}$

Name _____

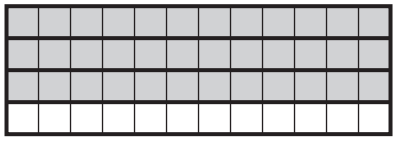
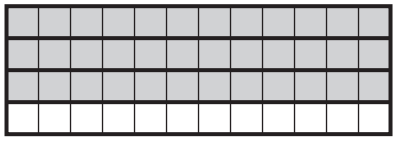
Equivalent Fractions

Go Online
Interactive Examples

Use the model to write an equivalent fraction.

1.  

$\frac{4}{6}$ = $\frac{2}{3}$

2.  

$\frac{3}{4}$ = _____

Tell whether the fractions are equivalent. Write = or ≠.

3. $\frac{10}{8} \bigcirc \frac{5}{4}$

4. $\frac{1}{2} \bigcirc \frac{7}{12}$

5. $\frac{4}{3} \bigcirc \frac{12}{8}$

6. $\frac{2}{3} \bigcirc \frac{4}{6}$

Problem Solving Real World

7. Jamal finished $\frac{5}{6}$ of his homework, Margaret finished $\frac{3}{4}$ of her homework, and Steve finished $\frac{10}{12}$ of his homework. Which two students finished the same amount of homework?

_____

8. Sophia's vegetable garden is divided into 12 equal sections. She plants carrots in 8 of the sections. Write two fractions that are equivalent to the part of Sophia's garden that is planted with carrots.

_____

9. WRITE Math Draw a model to show a fraction that is equivalent to $\frac{1}{3}$ and a fraction that is not equivalent to $\frac{1}{3}$.

Lesson Check

1. A rectangle is divided into 8 equal parts. Two parts are shaded. What fraction is equivalent to the shaded area of the rectangle?

2. Jefe uses 3 fifth-size strips to model $\frac{3}{5}$. He wants to use tenth-size strips to model an equivalent fraction. How many tenth-size strips will he need?

Spiral Review

3. Ximena places 40 stamps on each of 8 album pages. How many stamps does she place?

4. Maria and 3 friends have 1,200 soccer cards. If they share the soccer cards equally, how many will each person receive?

5. Six groups of students sell 162 balloons at the school carnival. There are 3 students in each group. If each student sells the same number of balloons, how many balloons does each student sell?

6. Four students each made a list of prime numbers.

Jabari: 5, 7, 17, 23
Emiko: 3, 5, 13, 17
Nia: 2, 3, 17, 19
Jordan: 7, 11, 13, 21

Who made an error and included a composite number? Write the composite number from his or her list.

Name _____

Generate Equivalent Fractions

I Can use multiplication to find equivalent fractions.

Florida's B.E.S.T.

- **Fractions** 4.FR.1.3, 4.FR.1.1
- **Mathematical Thinking & Reasoning** MTR 2.1, MTR.3.1, MTR 4.1, MTR.5.1, MTR.7.1

UNLOCK the Problem Real World

Mina needs $\frac{3}{4}$ cup of dish soap to make homemade bubble solution. Her measuring cup is divided into eighths. What fraction of the measuring cup should Mina fill with dish soap?

- Is an eighth-size part of a measuring cup bigger or smaller than a fourth-size part?

_____

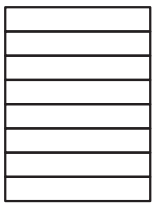
Find how many eighths are in $\frac{3}{4}$.

STEP 1 Compare fourths and eighths.

Shade to model $\frac{1}{4}$.
Use fourth-size parts.

1 part

Shade to model $\frac{1}{4}$.
Use eighth-size parts.



2 parts

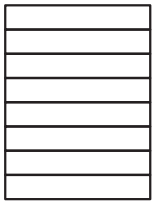
You need _____ eighth-size parts to make 1 fourth-size part.

STEP 2 Find how many eighths you need to make 3 fourths.

Shade to model $\frac{3}{4}$.
Use fourth-size parts.

3 parts

Shade to model $\frac{3}{4}$.
Use eighth-size parts.



6 parts

You needed 2 eighth-size parts to make 1 fourth-size part.

So, you need _____ eighth-size parts to make 3 fourth-size parts.

So, Mina should fill $\frac{\square}{8}$ of the measuring cup with dish soap.

Math Talk

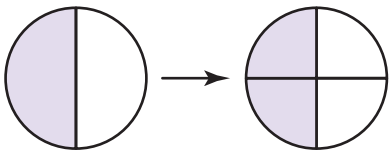
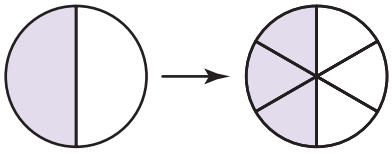
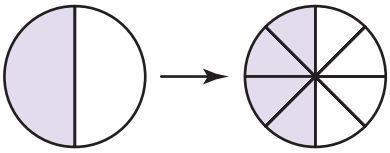
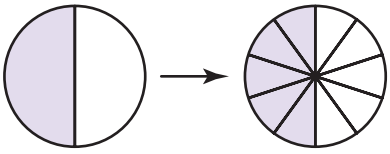
MTR 4.1 Engage in discussions on mathematical thinking.

Explain how you knew the number of eighth-size parts you needed to make 1 fourth-size part.

1. Explain why 6 eighth-size parts is the same amount as 3 fourth-size parts.

_____

Example Write four fractions that are equivalent to $\frac{1}{2}$.

MODEL	WRITE EQUIVALENT FRACTIONS	RELATE EQUIVALENT FRACTIONS
	$\frac{1}{2} = \frac{2}{4}$	$\frac{1 \times 2}{2 \times 2} = \frac{2}{4}$
	$\frac{1}{2} = \frac{\square}{6}$	$\frac{1 \times \square}{2 \times 3} = \frac{\square}{6}$
	$\frac{1}{2} = \frac{\square}{\square}$	$\frac{1 \times \square}{2 \times \square} = \frac{\square}{\square}$
	$\frac{1}{2} = \frac{\square}{\square}$	$\frac{1 \times \square}{2 \times \square} = \frac{\square}{\square}$

So, $\frac{1}{2} = \frac{2}{4} = \frac{\square}{6} = \frac{\square}{\square} = \frac{\square}{\square}$.

2. Look at the model that shows $\frac{1}{2} = \frac{3}{6}$. How does the number of parts in the whole affect the number of parts that are shaded? Explain.

3. Explain how you can use multiplication to write a fraction that is equivalent to $\frac{3}{5}$.

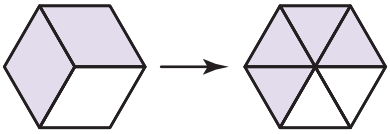
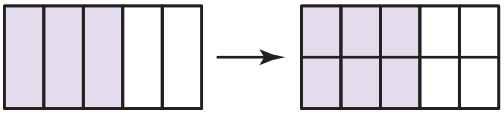
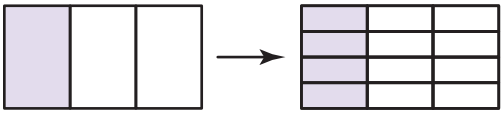
4. Are $\frac{2}{3}$ and $\frac{6}{8}$ equivalent? Explain.

Name _____

Share and Show

Math Board

1. Complete the table below.

MODEL	WRITE EQUIVALENT FRACTIONS	RELATE EQUIVALENT FRACTIONS
	$\frac{2}{3} = \frac{4}{6}$	$\frac{2 \times \square}{3 \times \square} = \frac{\square}{\square}$
	$\frac{3}{5} = \frac{6}{10}$	$\frac{3 \times \square}{5 \times \square} = \frac{\square}{\square}$
	$\frac{1}{3} = \frac{4}{12}$	$\frac{1 \times \square}{3 \times \square} = \frac{\square}{\square}$

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Can you multiply the numerator and denominator of a fraction by 0? Explain.

Write two equivalent fractions.

2. $\frac{4}{5}$

$\frac{4}{5} = \frac{4 \times \square}{5 \times \square} = \frac{\square}{\square}$

$\frac{4}{5} = \frac{4 \times \square}{5 \times \square} = \frac{\square}{\square}$

$\frac{4}{5} = \frac{\square}{\square} = \frac{\square}{\square}$

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

$\frac{2}{4} = \frac{2 \times \square}{4 \times \square} = \frac{\square}{\square}$

$\frac{2}{4} = \frac{2 \times \square}{4 \times \square} = \frac{\square}{\square}$

$\frac{2}{4} = \frac{\square}{\square} = \frac{\square}{\square}$

On Your Own

Write two equivalent fractions.

4. $\frac{3}{6}$

$\frac{3}{6} = \frac{\square}{\square} = \frac{\square}{\square}$

5. $\frac{10}{3}$

$\frac{10}{3} = \frac{\square}{\square} = \frac{\square}{\square}$

6. $\frac{2}{5}$

$\frac{2}{5} = \frac{\square}{\square} = \frac{\square}{\square}$

Tell whether the fractions are equivalent. Write = or ≠.

7. $\frac{5}{6} \bigcirc \frac{10}{18}$

8. $\frac{5}{4} \bigcirc \frac{10}{8}$

9. $\frac{4}{10} \bigcirc \frac{45}{100}$

10. $\frac{1}{4} \bigcirc \frac{2}{8}$

Problem Solving · Applications

Use the recipe for 11 and 12.

11. Hyori says the amount of flour in the recipe can be expressed as a fraction. Is she correct? Explain.

MATH on the Spot

Face Paint Recipe

- $\frac{2}{8}$ cup cornstarch
- 1 tablespoon flour
- $\frac{9}{12}$ cup light corn syrup
- $\frac{1}{4}$ cup water
- $\frac{1}{2}$ teaspoon food coloring

12. How could you use a $\frac{1}{8}$-cup measuring cup to measure the light corn syrup?

13. MTR Explain the method you use to determine if a fraction is equivalent to another fraction.

14. Azar drank $\frac{2}{3}$ cup of apple juice. Fill in each box with a number from the list to generate equivalent fractions for $\frac{2}{3}$. Not all numbers will be used.

$$\frac{2}{3} = \frac{\square}{6} = \frac{12}{\square} = \frac{\square}{\square}$$

2	4	6	8
12	15	16	18

Name _____

Generate Equivalent Fractions

Go Online
Interactive Examples

Write two equivalent fractions for each.

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

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

   $\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$

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

3. $\frac{1}{2}$ _____

4. $\frac{4}{5}$ _____

Tell whether the fractions are equivalent.
Write = or ≠.

5. $\frac{1}{4} \bigcirc \frac{3}{12}$

6. $\frac{4}{5} \bigcirc \frac{5}{10}$

7. $\frac{8}{3} \bigcirc \frac{6}{2}$

8. $\frac{3}{4} \bigcirc \frac{6}{8}$

9. $\frac{6}{5} \bigcirc \frac{12}{10}$

10. $\frac{6}{12} \bigcirc \frac{5}{8}$

11. $\frac{4}{10} \bigcirc \frac{40}{100}$

12. $\frac{2}{4} \bigcirc \frac{3}{12}$

Problem Solving Real World

13. Jan has a 12-ounce bowl of ice cream. Four ounces of the ice cream are vanilla, and the rest is chocolate. What are two equivalent fractions that represent the fraction of the ice cream that is vanilla?

_____

14. Kareem lives $\frac{14}{10}$ of a mile from the mall. Write two equivalent fractions that show what fraction of a mile Kareem lives from the mall.

_____

15. WRITE Math Explain how you can determine if $\frac{1}{3}$ and $\frac{4}{12}$ are equivalent fractions.

_____

_____

Lesson Check

15. Sakima colored a poster. She colored $\frac{2}{5}$ of the poster red. Write a fraction that is equivalent to $\frac{2}{5}$.

16. Wyome makes a punch that is $\frac{1}{4}$ cranberry juice. Write two fractions that are equivalent to $\frac{1}{4}$.

Spiral Review

17. An electronics store sells a large flat-screen television for $1,699. Last month, the store sold 8 of these television sets. About how much money did the televisions sell for?

18. Yahto has 18 sets of baseball cards. Each set has 12 cards. About how many baseball cards does Yahto have?

19. Diana had 41 stickers. She put them in 7 equal groups. She put as many as possible in each group. She gave the leftover stickers to her sister. How many stickers did Diana give to her sister?

20. Christopher wrote the number pattern below. The first term is 8.

8, 6, 9, 7, 10, ...

What is a rule for the pattern?

Name _____

Use Division to Generate Equivalent Fractions

Florida's B.E.S.T.
- **Fractions** 4.FR.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1

I Can Use division to generate equivalent fractions.

UNLOCK the Problem Real World

Vicki made a fruit tart and cut it into 6 equal pieces. Vicki, Silvia, and Elena each took 2 pieces of the tart home. Vicki says she and each of her friends took $\frac{1}{3}$ of the tart home. Is Vicki correct?

- Into how many pieces was the tart cut?

- How many pieces did each girl take?

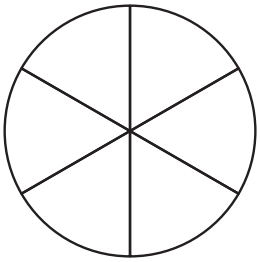
Activity

Materials ■ color pencils

STEP 1 Use a blue pencil to shade the pieces Vicki took home.

STEP 2 Use a red pencil to shade the pieces Silvia took home.

STEP 3 Use a yellow pencil to shade the pieces Elena took home.



The tart is divided into _____ equal-size pieces. The 3 colors on the model show how to combine sixth-size pieces to make

_____ equal third-size pieces.

So, Vicki is correct. Vicki, Silvia, and Elena each took ___ of the tart home.

Math Talk

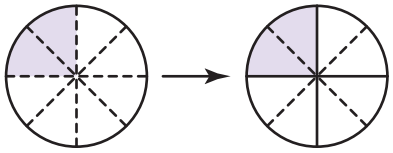
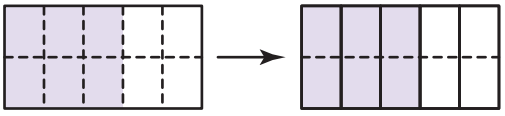
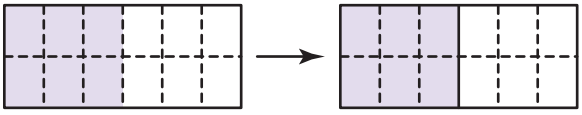
MTR 4.1 Engage in discussions on mathematical thinking.

Compare the models for $\frac{2}{6}$ and $\frac{1}{3}$. Explain how the sizes of the parts are related.

- What if Vicki took 3 pieces of the tart home and Elena took 3 pieces of the tart home? How could you combine the pieces to write a fraction that represents the part each friend took home? Explain.

Sometimes a fraction can be written as an equivalent fraction with smaller numbers in the numerator and denominator. To write the equivalent fraction, you need to divide both the numerator and the denominator by the same number.

One Way Use models to write an equivalent fraction.

MODEL	WRITE EQUIVALENT FRACTIONS	RELATE EQUIVALENT FRACTIONS
	$\frac{2}{8} = \frac{1}{4}$	$\frac{2 \div 2}{8 \div 2} = \frac{1}{4}$
	$\frac{6}{10} = \frac{\square}{5}$	$\frac{6 \div \square}{10 \div \square} = \frac{\square}{5}$
	$\frac{6}{12} = \frac{\square}{\square}$	$\frac{6 \div \square}{12 \div \square} = \frac{\square}{\square}$

To write $\frac{6}{10}$ as an equivalent fraction, you can combine tenth-size parts into equal groups with 2 parts each.

So, $\frac{6}{10} = \frac{6 \div \square}{10 \div \square} = \frac{\square}{\square}$.

Another Way Use common factors to write $\frac{6}{10}$ as an equivalent fraction.

You can find an equivalent fraction if there is a factor that the numerator and denominator have in common.

STEP 1 List the factors of the numerator and denominator. Circle common factors.

Factors of 6: _____, _____, _____, _____

Factors of 10: _____, _____, _____, _____

STEP 2 Divide the numerator and denominator by a common factor greater than 1.

$\frac{6}{10} = \frac{6 \div \square}{10 \div \square} = \frac{\square}{\square}$

Since 1 is the only factor that 3 and 5 have in common,

division cannot be used to write _____ as an equivalent fraction.

Name _____

Share and Show

Math Board

1. Use division to write an equivalent fraction for $\frac{8}{10}$.

$$\frac{8}{10} = \frac{8 \div \square}{10 \div \square} = \frac{\square}{\square}$$

Use common factors to write an equivalent fraction for each.

2. $\frac{6}{12}$

3. $\frac{2}{10}$

4. $\frac{6}{8}$

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

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Explain how you know you cannot use division to find an equivalent fraction.

On Your Own

Use division or common factors to write an equivalent fraction for each.

6. $\frac{9}{12}$

7. $\frac{4}{8}$

8. $\frac{10}{12}$

9. $\frac{20}{100}$

Tell whether there is an equivalent fraction that can be found by divison. Write *yes* or *no*.

10. $\frac{2}{8}$

11. $\frac{9}{12}$

12. $\frac{5}{6}$

13. $\frac{4}{10}$

14. There are 18 students in Jacob's homeroom. Six students bring their lunch to school. The rest eat lunch in the cafeteria. Written as a fraction in thirds, what fraction of students eat lunch in the cafeteria?

_____

Problem Solving · Applications

Use the map for 15 and 16.

15. MTR What fraction of the states in the southwest region (yellow on the map) share a border with Mexico?

_____

16. $\frac{1}{3}$ of the states in this region are on the Gulf of Mexico. What's the Question?

MATH on the Spot

_____

_____

_____

17. Pete says that to write $\frac{4}{6}$ as $\frac{2}{3}$, you combine pieces, but to write $\frac{4}{6}$ as $\frac{8}{12}$, you break apart pieces. Does this make sense? Explain.

_____

_____

_____

18. In Michelle's homeroom, $\frac{9}{15}$ of the students ride the bus to school, $\frac{4}{12}$ get a car ride, and $\frac{2}{30}$ walk to school. For problems 18a–18c, select True or False for each statement.

18a. $\frac{3}{5}$ of the students ride the bus to school. ○ True ○ False

18b. $\frac{1}{4}$ of the students get a car ride to school. ○ True ○ False

18c. $\frac{1}{15}$ of the students walk to school. ○ True ○ False

Show the Math

Demonstrate Your Thinking

Name _____

Use Division to Generate Equivalent Fractions

Go Online
Interactive Examples

Divide to find an equivalent fraction.

1. $\frac{6}{10}$

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

2. $\frac{12}{16}$ _____

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

4. $\frac{8}{12}$ _____

5. $\frac{100}{100}$ _____

6. $\frac{2}{6}$ _____

7. $\frac{2}{8}$ _____

8. $\frac{4}{10}$ _____

Tell whether the fractions are equivalent. Write = or ≠.

9. $\frac{6}{12} \bigcirc \frac{1}{12}$

10. $\frac{3}{4} \bigcirc \frac{5}{6}$

11. $\frac{6}{10} \bigcirc \frac{3}{5}$

12. $\frac{3}{12} \bigcirc \frac{1}{3}$

Problem Solving Real World

13. At Memorial Hospital, 9 of the 12 babies born on Tuesday were boys. Written as a fraction in fourths, what fraction of the babies born on Tuesday were boys?

_____

14. Cristina uses a ruler to measure the length of her math textbook. She says that the book is $\frac{4}{10}$ meter long. Can she write the measurement as an equivalent fraction? If so, what is the length of the book?

_____

15. WRITE Math Explain using words or drawings how to use factors or division to write $\frac{6}{9}$ as an equivalent fraction.

_____

_____

_____

Lesson Check

16. Six out of the 12 members of the school choir are boys. Are more than half of the choir members boys?

17. Write $\frac{10}{12}$ as an equivalent fraction with a smaller denominator.

Spiral Review

18. Each of the 23 students in Ms. Evans's class raised $45 for the school by selling coupon books. How much money did the class raise?

19. List two common factors of 36 and 48.

20. Bart uses $\frac{3}{12}$ cup milk to make muffins. Write a fraction that is equivalent to $\frac{3}{12}$.

21. Ashley bought 4 packages of juice boxes. There are 6 juice boxes in each package. She gave 2 juice boxes to each of 3 friends. How many juice boxes does Ashley have left?

Name _____

Find Equivalent Fractions

Florida's B.E.S.T.

- **Fractions** 4.FR.1.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1

I Can solve real-world problems by finding equivalent fractions.

UNLOCK the Problem Real World

Anaya is planting a flower garden. The garden will have no more than 12 equal sections. $\frac{3}{4}$ of the garden will have daisies. What other fractions could represent the part of the garden that will have daisies?

Read the Problem

What do I need to find?

_____ that could represent the part of the garden that will have daisies

What information do I need to use?

_____ of the garden will have daisies. The garden will not have more than

_____ equal sections.

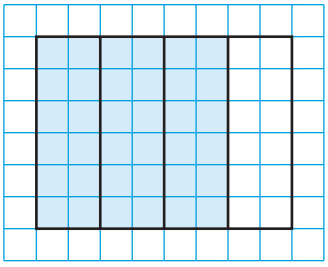
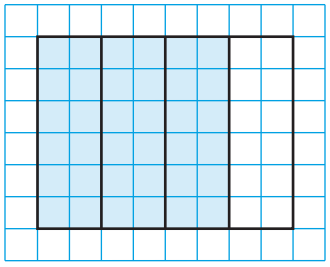
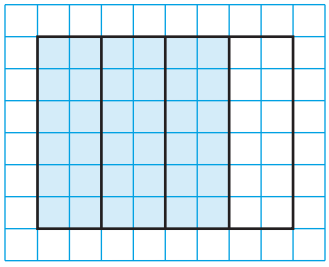
How will I use the information?

I can make a _____

to find _____ fractions to solve the problem.

Solve the Problem

I can make a table and draw models to find equivalent fractions.

$\frac{3}{4}$	$\frac{\quad}{\quad}$	$\frac{\quad}{\quad}$
		

1. What other fractions could represent the part of the garden that will have daisies? Explain. _____

_____

_____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Compare the models of the equivalent fractions. How does the number of parts relate to the size of the parts?

Try Another problem

Two friends are knitting scarves. Each scarf has 3 rectangles, and $\frac{2}{3}$ of the rectangles have stripes. If the friends are making 10 scarves, how many rectangles do they need? How many rectangles will have stripes?

Read the Problem

What do I need to find?	What information do I need to use?	How will I use the information?

Solve the Problem

2. Does your answer make sense? Explain how you know.

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

What other strategy could you have used and why?

Name _____

Share and Show Math Board

1. Keisha is helping plan a race route for a 10-kilometer charity run. The committee wants to set up the following things along the course.

> **viewing areas:** at the end of each half of the course
> **water stations:** at the end of each fifth of the course
> **distance markers:** at the end of each tenth of the course

Which locations have more than one thing located there?

First, make a table to organize the information.

	Number of locations	First location	All the locations
Viewing areas	2	$\frac{1}{2}$	$\frac{1}{2}$
Water stations	5	$\frac{1}{5}$	$\frac{1}{5}$
Distance markers	10	$\frac{1}{10}$	$\frac{1}{10}$

Next, identify a relationship. Use a common denominator, and find equivalent fractions.

Finally, identify the locations at which more than one thing will be set up. Circle the locations.

_____

_____

2. What if distance markers will also be placed at the end of every fourth of the course? Will any of those markers be set up at the same location as another distance marker, a water station, or a viewing area? Explain. _____

_____

_____

3. Fifty-six students signed up to volunteer for the race. There were 4 equal groups of students, and each group had a different task.

How many students were in each group? _____

On Your Own

MATH on the Spot

4. A baker cut a pie in half. He cut each half into 3 equal pieces and each piece into 2 equal slices. He sold 6 slices. What fraction of the pie did the baker sell?

5. Andy cut a tuna sandwich and a chicken sandwich into a total of 15 pieces. He cut the tuna sandwich into 9 more pieces than the chicken sandwich. All the pieces of the tuna sandwich are the same size, and Andy ate 8 of them. What fraction of the tuna sandwich did he eat?

6. MTR Luciano Luke threw balls into these buckets at a carnival. The number on the bucket gives the number of points for each throw. What is the least number of throws needed to score exactly 100 points? Explain.

Show the Math

Demonstrate Your Thinking

7. Victoria arranges flowers in vases at her restaurant. In each arrangement, $\frac{2}{3}$ of the flowers are yellow. What other fractions can represent the part of the flowers that are yellow? Shade the models to show your work.

$\frac{2}{3}$

$\frac{\square}{12}$

$\frac{\square}{\square}$

Name _____

Find Equivalent Fractions

Go Online
Interactive Examples

Solve each problem.

1. Miranda is braiding her hair. Then she will attach beads to the braid. She wants $\frac{1}{3}$ of the beads to be red. If the greatest number of beads that will fit on the braid is 12, what other fractions could represent the part of the beads that are red?

2. Ms. Groves has trays of paints for students in her art class. Each tray has 5 colors. One of the colors in each tray is purple. What fraction of the colors in 20 trays is purple?

3. Miguel is making an obstacle course for field day. At the end of every sixth of the course, there is a tire. At the end of every third of the course, there is a cone. At the end of every half of the course, there is a hurdle. At which locations of the course will people need to go through more than one obstacle?

4. WRITE Math Draw and compare models of $\frac{3}{4}$ of a pizza pie and $\frac{6}{8}$ of a same-size pie.

Lesson Check

5. A used bookstore will trade 2 of its books for 3 of yours. If Val brings in 18 books to trade, how many books can she get from the store?

6. Every $\frac{1}{2}$ hour Naomi stretches her neck; every $\frac{1}{3}$ hour she stretches her legs; and every $\frac{1}{6}$ hour she stretches her arms. Which parts of her body will Naomi stretch when $\frac{2}{3}$ of an hour has passed?

Spiral Review

7. At the beginning of the year, the Wong family car had been driven 14,539 miles. At the end of the year, their car had been driven 21,844 miles. How many miles did the Wong family drive their car during that year?

8. Widget Company made 3,600 widgets in 4 hours. They made the same number of widgets each hour. How many widgets did the company make in one hour?

9. Tyler is thinking of a number that is divisible by 2 and by 3. Write another number by which Tyler's number must also be divisible.

10. Jessica drew a circle divided into 8 equal parts. She shaded 6 of the parts. What fraction is equivalent to the part of the circle that is shaded?

Name _____

Write Fractions as Sums

Florida's B.E.S.T.

- **Fractions** 4.FR.2.1, 4.FR.2.2
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.2.1, MTR.3.1, MTR.4.1

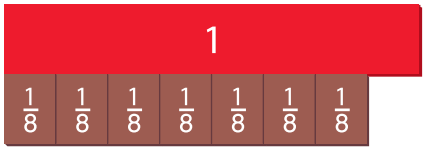
I Can decompose a fraction less than a whole into a sum of fractions with the same denominators.

UNLOCK the Problem Real World

Emilio cut a sandwich into 8 equal pieces and ate 1 piece. He has $\frac{7}{8}$ of the sandwich left. Emilio put each remaining piece on a snack plate. How many snack plates did he use? What part of the sandwich did he put on each plate?

Each piece of the sandwich is $\frac{1}{8}$ of the whole. $\frac{1}{8}$ is called a **unit fraction** because it tells the part of the whole that 1 piece represents. A unit fraction always has a numerator of 1.

Example 1 Write $\frac{7}{8}$ as a sum of unit fractions.



$\frac{7}{8} =$ _____ + _____ + _____ + _____ + _____ + _____ + _____

The number of addends represents the number of plates used.

The unit fractions represent the part of the sandwich on each plate.

So, Emilio used _____ plates. He put _____ of a sandwich on each plate.

1. What if Emilio ate 3 pieces of the sandwich instead of 1 piece? How many snack plates would he need? What part of the sandwich would be on each plate? Explain.

_____

_____

_____

_____

Example 2 Write a fraction as a sum.

Kevin and Isabel are going to share a whole pizza. The pizza is cut into 6 equal slices. They will put the slices on two separate dishes. What part of the whole pizza could be on each dish?

Shade the models to show three different ways Kevin and Isabel could share the pizza. Write an equation for each model.

Think: $\frac{6}{6}$ = 1 whole pizza.

= +

= ____ + ____

= +

= ____ + ____

= +

= ____ + ____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

If there were 8 dishes, could $\frac{1}{6}$ of the whole pizza be on each dish? Explain.

2. What if 3 friends share the pizza, and they put the pizza slices on three separate dishes? What part of the pizza could be on each dish? Write equations to support your answer.

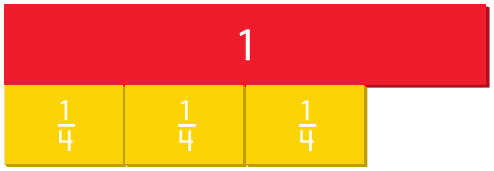
_____

_____

Name _____

Share and Show Math Board

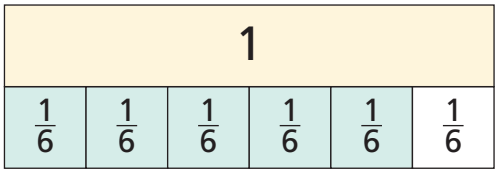
1. Write $\frac{3}{4}$ as a sum of unit fractions.



$\frac{3}{4} =$ _____ + _____ + _____

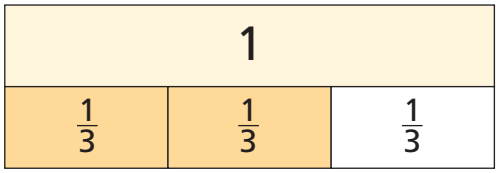
Write the fraction as a sum of unit fractions.

2.



$\frac{5}{6} =$ _____

3.



$\frac{2}{3} =$ _____

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How is the numerator in $\frac{5}{6}$ related to the number of addends in the sum of its unit fractions?

On Your Own

Write the fraction as a sum of unit fractions.

4. $\frac{4}{12} =$ _____

5. $\frac{6}{8} =$ _____

Write the fraction as a sum of fractions three different ways.

6. $\frac{8}{10}$

_____

_____

_____

7. $\frac{6}{6}$

_____

_____

_____

8. **MTR** How many different ways can you write a fraction that has a numerator of 2 as a sum of fractions? Explain.

_____

_____

Problem Solving · Applications

MATH on the Spot

9. Holly's garden is divided into 5 equal sections. She will fence the garden into 3 areas by grouping some of these equal sections together. What part of the garden could each fenced area be?

a. What information do you need to use?

_____

_____

b. How can writing an equation help you solve the problem? _____

_____

_____

c. How can drawing a model help you write an equation?

_____

_____

d. Show how you can solve the problem.

e. Complete the sentence.

The garden can be fenced into _____,

_____, and _____ parts or _____,

_____, and _____ parts.

10. Leena walked $\frac{2}{3}$ of a mile. What is $\frac{2}{3}$ written as a sum of unit fractions with a denominator of 12?

_____

11. Ellie's mom sells toys. She sold $\frac{7}{10}$ of the toys. Select a way $\frac{7}{10}$ can be written as a sum of fractions. Mark all that apply.

Ⓐ $\frac{4}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$

Ⓑ $\frac{4}{10} + \frac{3}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$

Ⓒ $\frac{1}{10} + \frac{2}{10} + \frac{3}{10} + \frac{1}{10}$

Name _____

Write Fractions as Sums

Go Online
Interactive Examples

Write the fraction as a sum of unit fractions.

1. $\frac{4}{5} =$ $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

Think: Add $\frac{1}{5}$ four times.

2. $\frac{3}{8} =$ _____

3. $\frac{6}{12} =$ _____

4. $\frac{4}{4} =$ _____

Write the fraction as a sum of fractions three different ways.

5. $\frac{7}{10}$

6. $\frac{6}{6}$

Problem Solving Real World

7. Petra is asked to color $\frac{6}{6}$ of her grid. She must use 3 colors: blue, red, and pink. There must be more blue sections than red sections or pink sections. What are the different ways Petra can color the sections of her grid and follow all the rules?

8. WRITE Math Write $\frac{9}{12}$ as a sum of unit fractions.

Lesson Check

9. Jorge wants to write $\frac{4}{5}$ as a sum of unit fractions. What should he write?

10. What fraction is equivalent to the expression $\frac{4}{8} + \frac{2}{8} + \frac{1}{8}$?

Spiral Review

11. An apple is cut into 6 equal slices. Nancy eats 2 of the slices. What fraction of the apple is left?

12. Which of these numbers is a prime number: 1, 11, 21, 51?

13. A teacher has a bag of 100 unit cubes. She gives an equal number of cubes to each of the 7 groups in her class. She gives each group as many cubes as she can. How many unit cubes are left over?

14. Jessie sorted the coins in her bank. She made 7 stacks of 6 dimes and 8 stacks of 5 nickels. She then found 1 dime and 1 nickel. How many dimes and nickels does Jessie have in all?

Name _____

Rename Fractions and Mixed Numbers

Florida's B.E.S.T.

- **Fractions** 4.FR.2.1, 4.FR.2.2
- **Mathematical Thinking & Reasoning** MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.7.1

I Can decompose mixed numbers and fractions greater than one into a sum of fractions with the same denominators.

UNLOCK the Problem Real World

Mr. Varga has $2\frac{3}{6}$ loaves of corn bread. Each loaf was cut into $\frac{1}{6}$-size pieces. If he has 14 people over for dinner, is there enough bread for each person to have 1 piece?

- What is the size of 1 piece of bread relative to a whole loaf?

_____

- How much bread does Mr. Fox need for 14 people?

_____

A **mixed number** is a number represented by a whole number and a fraction. You can write a mixed number as a fraction.

To find how many $\frac{1}{6}$-size pieces are in $2\frac{3}{6}$, write $2\frac{3}{6}$ as a fraction.

Example Write a mixed number as a fraction.

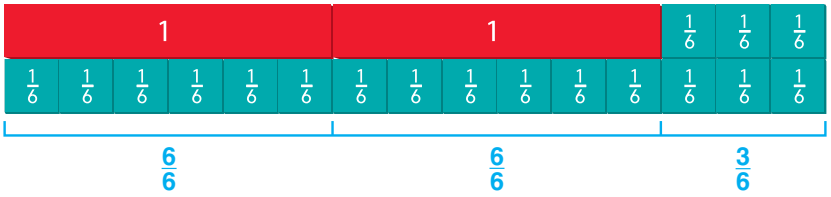
THINK

STEP 1 Model $2\frac{3}{6}$.

MODEL AND RECORD

$2\frac{3}{6} =$ _____ + _____ + ____

STEP 2 Find how many $\frac{1}{6}$-size pieces are in each whole. Model $2\frac{3}{6}$ using only $\frac{1}{6}$-size pieces.



$2\frac{3}{6} =$ ____ + ____ + ____

STEP 3 Find the total number of $\frac{1}{6}$-size pieces in $2\frac{3}{6}$.

Think: Find $\frac{6}{6} + \frac{6}{6} + \frac{3}{6}$.

$2\frac{3}{6} =$ ____

There are _____ sixth-size pieces in $2\frac{3}{6}$.

So, there is enough bread for 14 people to each have 1 piece.

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

Give an example of how to write a mixed number as a fraction without using a model.

Example Write a fraction greater than 1 as a mixed number.

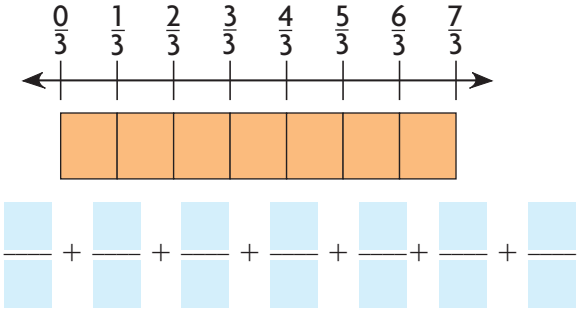
To weave a bracelet, Kajsa needs 7 pieces of brown thread. Each piece of thread must be $\frac{1}{3}$ yard long. How much thread should she buy to weave the bracelet?

Write $\frac{7}{3}$ as a mixed number.

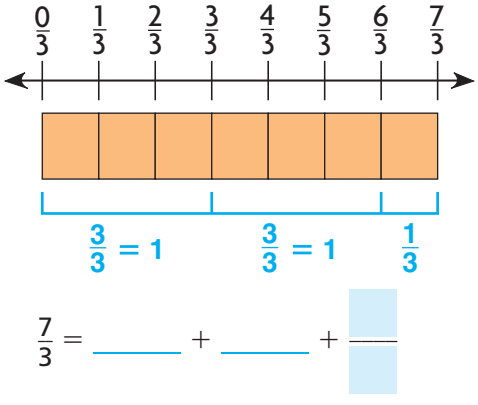
THINK

STEP 1 Model $\frac{7}{3}$.

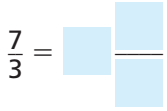
MODEL AND RECORD



STEP 2 Find how many wholes are in $\frac{7}{3}$, and how many thirds are left over.



STEP 3 Write $\frac{7}{3}$ as a mixed number.

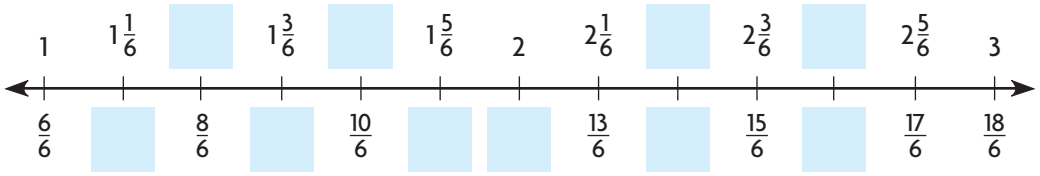


So, Kajsa should buy _____ yards of thread.

Share and Show Math Board

Write the unknown numbers. Write mixed numbers above the number line and fractions greater than one below the number line.

1.



Name _____

Write the mixed number as a fraction.

2. $1\frac{1}{8}$

3. $1\frac{3}{5}$

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

Write the fraction as a mixed number.

5. $\frac{11}{4}$

6. $\frac{6}{5}$

7. $\frac{13}{10}$

Math Talk

MTR 3.1 Complete tasks with mathematical fluency.

Describe how you can compare $1\frac{3}{5}$ and $\frac{7}{5}$.

On Your Own

Write the mixed number as a fraction.

8. $2\frac{7}{10}$

9. $3\frac{2}{3}$

10. $4\frac{2}{5}$

MTR Find the unknown numbers.

11. $\frac{22}{16} = 1\frac{\square}{16}$

12. $\square\frac{5}{6} = \frac{23}{6}$

13. $\frac{27}{5} = \square\frac{\square}{5}$

14. Pen has $\frac{1}{2}$-cup and $\frac{1}{8}$-cup measuring cups. What are two ways he could measure out $1\frac{3}{4}$ cups of flour?

15. Juanita is making bread. She needs $3\frac{1}{2}$ cups of flour. Juanita only has a $\frac{1}{4}$-cup measuring cup. How many $\frac{1}{4}$ cups of flour will Juanita use to prepare the bread?

Problem Solving · Applications

Use the recipe to solve 16–18.

16. MTR Hai is making energy squares. How many $\frac{1}{2}$ cups of peanut butter are used in the recipe?

_____

17. Suppose Hai wants to make 2 times as many energy squares as the recipe makes. How many $\frac{1}{4}$-cups of bran cereal should he use?

_____

18. Hai added $2\frac{3}{8}$ cups of raisins. Write this mixed number as a fraction greater than 1.

_____

19. Jenn is preparing brown rice. She needs $1\frac{1}{2}$ cups of brown rice and 2 cups of water. Jenn has only a $\frac{1}{8}$-cup measuring cup. How many $\frac{1}{8}$ cups each of rice and water will Jenn use to prepare the rice?

_____

MATH on the Spot

Show the Math

Demonstrate Your Thinking

20. Draw a line to show the mixed number and fraction that have the same value.

$1\frac{2}{5}$	$2\frac{3}{8}$	$4\frac{1}{3}$	$1\frac{2}{3}$
$\frac{30}{3}$	$\frac{13}{3}$	$\frac{4}{3}$	$\frac{8}{5}$

Name _____

Rename Fractions and Mixed Numbers

Go Online
Interactive Examples

Write the mixed number as a fraction.

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

Think: Find $\frac{5}{5} + \frac{5}{5} + \frac{3}{5}$.

$\frac{13}{5}$

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

Write the fraction as a whole number or a mixed number.

9. $\frac{31}{6}$
10. $\frac{20}{10}$
11. $\frac{15}{8}$
12. $\frac{13}{6}$

Problem Solving Real World

13. A recipe calls for $2\frac{2}{4}$ cups of raisins, but Lana only has a $\frac{1}{4}$-cup measuring cup. How many $\frac{1}{4}$ cups does Lana need to measure out $2\frac{2}{4}$ cups of raisins?

14. If Pua needs $3\frac{1}{4}$ cups of oatmeal, how many $\frac{1}{4}$ cups of oatmeal will she use?

15. WRITE Math Draw and explain how you can use a number line to rename a fraction greater than 1 as a mixed number.

Lesson Check

16. Write a mixed number that is equivalent to $\frac{16}{3}$.

17. Vielle filled her $\frac{1}{2}$-cup measuring cup seven times to have enough flour for a cake recipe. How much flour does the cake recipe call for?

Spiral Review

18. Thuy put some stamps into her stamp collection book. She put 14 stamps on each page. If she completely filled 16 pages, how many stamps did she put in the book?

19. Anh is driving 324 miles to visit some friends. He wants to get there in 6 hours. How many miles does he need to drive each hour?

20. During a bike challenge, riders have to collect various colored ribbons. Each $\frac{1}{2}$ mile they collect a red ribbon, each $\frac{1}{8}$ mile they collect a green ribbon, and each $\frac{1}{4}$ mile they collect a blue ribbon. Which colors of ribbons will be collected at the $\frac{3}{4}$ mile marker?

21. What is the perimeter of a rectangle with length 24 meters and width 18 meters?

Name _____

Chapter 8

Chapter Review

1. For Problems 1a–1d, tell whether the fractions are equivalent by selecting the correct symbol.

1a. $\frac{4}{16}$ $\boxed{=\ \neq}$ $\frac{1}{4}$

1b. $\frac{3}{5}$ $\boxed{=\ \neq}$ $\frac{12}{15}$

1c. $\frac{30}{100}$ $\boxed{=\ \neq}$ $\frac{3}{10}$

1d. $\frac{6}{10}$ $\boxed{=\ \neq}$ $\frac{5}{8}$

2. Juan's mother gave him a recipe for trail mix.

$\frac{3}{4}$ cup cereal	$\frac{2}{3}$ cup almonds
$\frac{1}{4}$ cup peanuts	$\frac{1}{2}$ cup raisins

Juan doubled the amount of almonds to $\frac{4}{3}$ cups. He says that is the same as $1\frac{1}{2}$ cups. Is he correct? Explain.

_____

3. Taylor cuts $\frac{1}{5}$ sheet of construction paper for an arts and crafts project. Write $\frac{1}{5}$ as an equivalent fraction with the denominators shown.

$\frac{\square}{10}$ $\frac{\square}{15}$ $\frac{\square}{25}$ $\frac{\square}{40}$

4. A mechanic has sockets with the sizes shown. What other fractions could represent the socket that is $\frac{1}{4}$ inch? Use the denominators of the other sizes.

$\frac{7}{8}$ in. $\frac{3}{16}$ in. $\frac{1}{4}$ in. $\frac{3}{8}$ in. $\frac{4}{8}$ in. $\frac{11}{16}$ in.

_____

5. Darcy bought $\frac{3}{4}$ pound of hamburger for a barbecue. Write two equivalent fractions.

$$\frac{3}{4} = \frac{\square}{\square} = \frac{\square}{\square}$$

6. Jett is practicing the piano. He spends $\frac{1}{4}$ hour practicing scales and $\frac{1}{3}$ hour practicing the song for his recital. For Problems 6a–6c, choose Yes or No to tell whether each of the following is a true statement.

6a. 12 is a common denominator of $\frac{1}{4}$ and $\frac{1}{3}$. ○ Yes ○ No

6b. The amount of time spent practicing scales can be represented as $\frac{3}{12}$ hour. ○ Yes ○ No

6c. The amount of time spent practicing the recital song can be represented as $\frac{6}{12}$ hour. ○ Yes ○ No

7. In the school chorus, 1 out of 6 of the students are fourth graders. If there are 24 students in the school chorus, how many are fourth graders?

_____ students

8. Which pairs of fractions are equivalent? Mark all that apply.

○ $\frac{8}{12}$ and $\frac{2}{3}$

○ $\frac{4}{5}$ and $\frac{12}{16}$

○ $\frac{3}{4}$ and $\frac{20}{28}$

○ $\frac{7}{10}$ and $\frac{21}{30}$

9. Ren worked on his science fair project for $\frac{9}{10}$ hour. What are three ways Ren can write $\frac{9}{10}$ as a sum of fractions?

Name _____

10. Morita works in a florist shop and makes flower arrangements. She puts 10 flowers in each vase, and $\frac{2}{10}$ of the flowers are daisies.

Part A

If Morita makes 4 arrangements, how many daisies does she need? Show how you can check your answer.

_____ daisies

Part B

Last weekend, Morita used 10 daisies to make flower arrangements. How many flowers other than daisies did she use to make the arrangements? Explain your reasoning.

_____ other flowers

11. In Exie's homeroom, $\frac{10}{28}$ of the students have a cat, $\frac{6}{12}$ have a dog, and $\frac{2}{14}$ have a pet bird. For Problems 11a–11c, choose True or False for each statement.

11a. $\frac{5}{14}$ of the students have a cat. ○ True ○ False

11b. $\frac{1}{4}$ of the students have a dog. ○ True ○ False

11c. $\frac{1}{7}$ of the students have a pet bird. ○ True ○ False

12. Regina, Freya, Pablo, and Ellen hiked around Bear Pond. Regina hiked $\frac{7}{10}$ of the distance in an hour. Freya hiked $\frac{3}{6}$ of the distance in an hour. Pablo hiked $\frac{70}{100}$ of the distance in an hour. Ellen hiked $\frac{3}{8}$ of the distance in an hour. Compare the distances hiked by matching the statements to the correct symbol. Each symbol may be used more than once or not at all.

$\frac{7}{10}$ ◯ $\frac{3}{6}$	•	• =
$\frac{70}{100}$ ◯ $\frac{7}{10}$	•	• ≠
$\frac{3}{6}$ ◯ $\frac{3}{8}$	•	

13. Ramon is having some friends over after a baseball game. Ramon's job is to make a vegetable dip. The ingredients for the recipe are given.

Ingredients in Vegetable Dip

$\frac{3}{4}$ cup parsley	$\frac{5}{8}$ cup buttermilk
$\frac{1}{3}$ cup dill	$\frac{1}{2}$ cup cream cheese
$\frac{6}{8}$ cup scallions	$\frac{1}{16}$ cup lemon juice

Part A

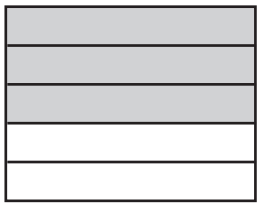
How many $\frac{1}{4}$ cups would Ramon use to measure the correct amount of parsley? Use a sum of unit fractions to explain.

Part B

Ramon says that he needs the same amount of two different ingredients. Is he correct? Support your answer with information from the problem.

Name _____

14. Jasira is ordering bread rolls for her party. She wants $\frac{3}{5}$ of the rolls to be whole wheat. What other fractions can represent the part of the rolls that will be whole wheat? Shade the models to show your work.



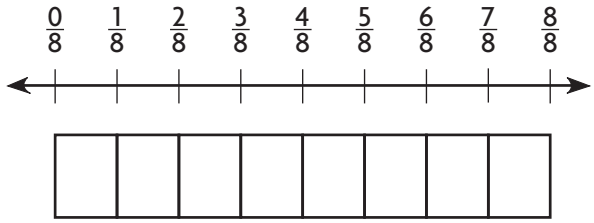
$\frac{3}{5}$

$\frac{\square}{25}$

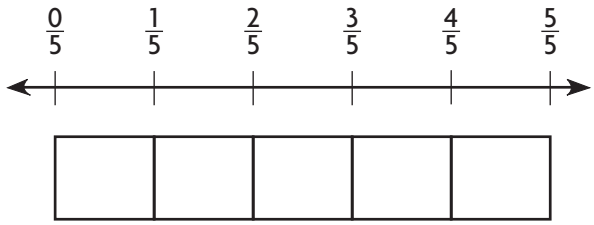
$\frac{\square}{\square}$

15. Angel has $\frac{3}{8}$ yard of string and Lynn has $\frac{2}{5}$ yard of string. Do Angel and Lynn have the same amount of string? Shade the model to show how you found your answer. Explain your reasoning.

Angel's string:



Lynn's string:



16. Kumani used $\frac{1}{4}$ yard of red ribbon. Fill in each box with a number from the tiles to show equivalent fractions for $\frac{1}{4}$. Not all numbers will be used.

$\frac{1}{4} = \frac{\square}{8} = \frac{4}{\square} = \frac{\square}{\square}$

2	3	5	6
12	15	16	20

17. Abran has two same-sized rectangles divided into the same number of equal parts. One rectangle has $\frac{3}{4}$ of the parts shaded, and the other has $\frac{1}{3}$ of the parts shaded.

Part A

Into how many parts could each rectangle be divided? Show your work by drawing the parts of each rectangle.

Part B

Is there more than one possible answer to Part A? If so, did you find the least number of parts into which both rectangles could be divided? Explain your reasoning.

18. Suki rode her bike $\frac{5}{4}$ miles. Claire rode her bike $\frac{3}{2}$ miles. Together, they rode a total of $2\frac{3}{4}$ miles. For Problems 18a–18c, answer the question.

18a. Write the distance Suki rode as a mixed number.

_____ miles

18b. Write the distance Claire rode as a mixed number.

_____ miles

18c. Write the total distance they rode together as a fraction greater than 1.

_____ miles