

Compare Fractions

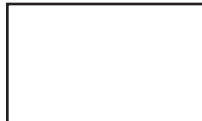


Show What You Know

► **Represent Fractions** Complete the model to show each fraction.

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

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

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


► **Rename Fractions** Write the mixed number as a fraction.

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

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


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

► **Equivalent Fractions** Shade the models to show whether the fractions are equivalent or not.

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

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

$\frac{5}{10}$ 

$\frac{1}{3}$ 

MATH in the

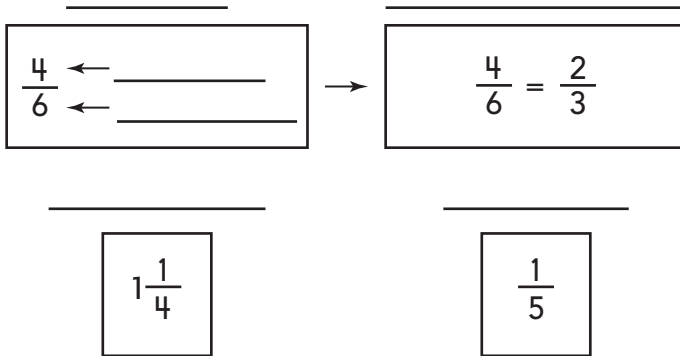


Earth's surface is covered by more than 57 million square miles of land. The table shows about how much of Earth's land surface each continent covers. Which continent covers the greatest part of Earth's land surface?

Continent	Part of land surface
Asia	$\frac{3}{10}$
Africa	$\frac{1}{5}$
Antarctica	$\frac{9}{100}$
Australia	$\frac{6}{100}$
Europe	$\frac{7}{100}$
North America	$\frac{1}{6}$
South America	$\frac{1}{8}$

► Visualize It

Complete the diagram by using the words with a ✓.



Connect to Vocabulary

Review Words

- ✓ denominator
- ✓ equivalent fractions
- ✓ fraction
- ✓ numerator
- ✓ unit fraction

Preview Words

- benchmark
- greater than
- less than
- ✓ mixed number

► Understand Vocabulary

Complete the sentences by using preview words.

1. One fraction is _____ another fraction if it represents a greater part of a whole.
2. One fraction is _____ another fraction if it represents a lesser part of a whole.
3. A _____ is a number with a whole number and a fractional part.
4. A _____ is a known size or amount that helps you understand a different size or amount.



Name _____

Compare Fractions Using Benchmarks

I Can use benchmarks to compare fractions.

Florida's B.E.S.T.

- Fractions 4.FR.1.4
- Mathematical Thinking & Reasoning
MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1



UNLOCK the Problem



Arlo made a popcorn snack. He mixed $\frac{5}{8}$ gallon of popcorn with $\frac{1}{2}$ gallon of dried apple rings. Did he use more dried apple rings or more popcorn?

Activity Compare $\frac{5}{8}$ and $\frac{1}{2}$.

Materials fraction strips

Use fraction strips to compare $\frac{5}{8}$ and $\frac{1}{2}$. Record on the model below.

$\frac{1}{2}$	$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{5}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	

$\frac{5}{8}$ ○ $\frac{1}{2}$

So, Arlo used more _____.



- Write 5 fractions equivalent to $\frac{1}{2}$. What is the relationship between the numerator and the denominator of fractions equivalent to $\frac{1}{2}$?

- How many eighths are equivalent to $\frac{1}{2}$?

- How can you compare $\frac{5}{8}$ and $\frac{1}{2}$ without using a model?

Math Talk

MTR 3.1

Complete tasks with mathematical fluency.

How are the number of $\frac{1}{8}$ -size pieces in $\frac{5}{8}$ related to the number of $\frac{1}{8}$ -size pieces you need to make $\frac{1}{2}$?

Benchmarks A **benchmark** is a known size or amount that helps you understand a different size or amount. You can use $\frac{1}{2}$ as a benchmark to help you compare fractions.

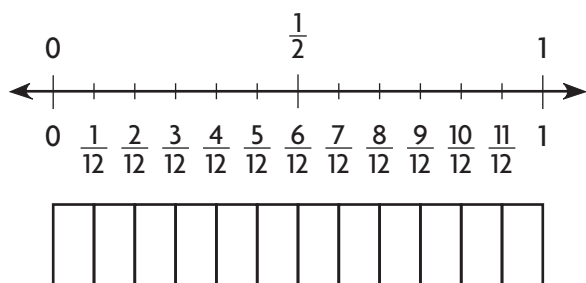
Example Use benchmarks to compare fractions.

A family hiked the same mountain trail. Blythe and her father hiked $\frac{5}{12}$ of the trail before they stopped for lunch. Isolda and her mother hiked $\frac{9}{10}$ of the trail before they stopped for lunch. Who hiked farther before lunch?

Compare $\frac{5}{12}$ and $\frac{9}{10}$ to the benchmark $\frac{1}{2}$.



STEP 1 Compare $\frac{5}{12}$ to $\frac{1}{2}$.



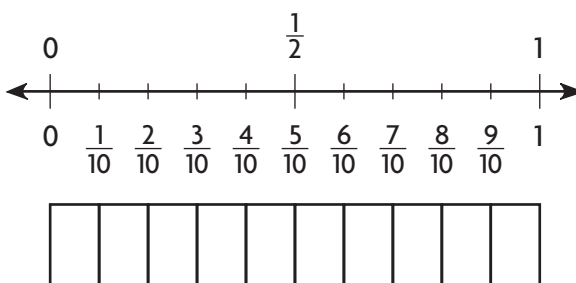
Think: Shade $\frac{5}{12}$.

$$\frac{5}{12} \bigcirc \frac{1}{2}$$

Since $\frac{5}{12}$ is _____ than $\frac{1}{2}$ and $\frac{9}{10}$ is _____ than $\frac{1}{2}$, you know that $\frac{5}{12} \bigcirc \frac{9}{10}$.

So, _____ hiked farther before lunch.

STEP 2 Compare $\frac{9}{10}$ to $\frac{1}{2}$.



Think: Shade $\frac{9}{10}$.

$$\frac{9}{10} \bigcirc \frac{1}{2}$$

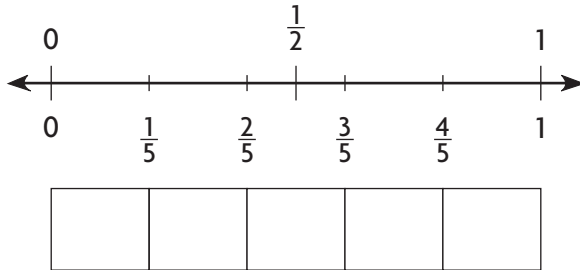
4. Explain how you can tell $\frac{5}{12}$ is less than $\frac{1}{2}$ without using a model.

5. Explain how you can tell $\frac{9}{10}$ is greater than $\frac{1}{2}$ without using a model.

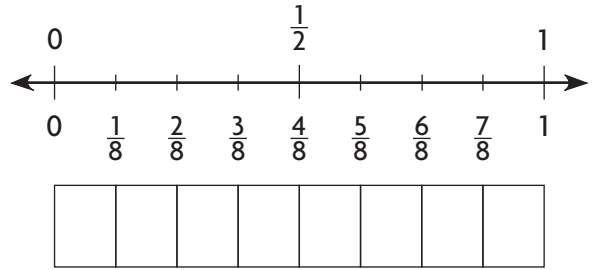
Share and Show

Math Board

1. Compare $\frac{2}{5}$ and $\frac{1}{8}$. Write $<$ or $>$.



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



Compare. Write $<$ or $>$.

✓ 2. $\frac{1}{2} \bigcirc \frac{4}{6}$

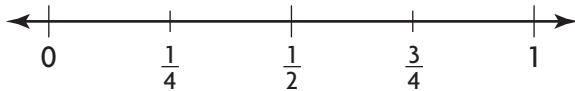
3. $\frac{3}{10} \bigcirc \frac{1}{2}$

✓ 4. $\frac{8}{4} \bigcirc \frac{12}{10}$

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

On Your Own

Use a number line to compare. Write $<$ or $>$.



6. $\frac{8}{10} \bigcirc \frac{3}{8}$

7. $\frac{1}{3} \bigcirc \frac{7}{12}$

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

9. $2\frac{4}{8} \bigcirc 2\frac{2}{10}$

Math Talk

MTR 5.1 Use patterns and structure.

How do you know $\frac{1}{3} < \frac{1}{2}$?

MTR Find a numerator that makes the statement true.

10. $\frac{2}{4} < \frac{\square}{6}$

11. $\frac{8}{10} > \frac{\square}{8}$

12. $3\frac{10}{12} > 2\frac{\square}{4}$

13. $\frac{2}{5} < \frac{\square}{10}$

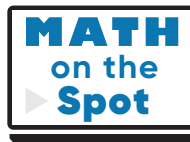
14. When two fractions are between 0 and $\frac{1}{2}$, how do you know which fraction is greater? Explain.

15. If you know that $\frac{2}{6} < \frac{1}{2}$ and $\frac{3}{4} > \frac{1}{2}$, what do you know about $\frac{2}{6}$ and $\frac{3}{4}$?

16. Gina has ribbons that are $\frac{3}{4}$ yard, $\frac{2}{6}$ yard, $\frac{1}{5}$ yard, and $\frac{3}{8}$ yard long. She needs to use the ribbon longer than $\frac{2}{3}$ yard to make a bow. Which length of ribbon could she use for the bow?

Problem Solving · Applications

17. Saundra ran $\frac{7}{12}$ of a mile. Lamar ran $\frac{3}{4}$ of a mile. Who ran farther? Explain.



18. The answer is Selena ran farther than Manny. What's the question?

19. Hyemi made a small pan of ziti and a small pan of lasagna. She cut the ziti into 8 equal parts and the lasagna into 9 equal parts. Her family ate $\frac{2}{3}$ of the lasagna. If her family ate more lasagna than ziti, what fraction of the ziti could have been eaten?

20. Paki, Ella, and Ryan biked around Eagle Lake. Paki biked $\frac{2}{10}$ of the distance in an hour. Ella biked $\frac{4}{8}$ of the distance in an hour. Ryan biked $\frac{2}{5}$ of the distance in an hour. Compare the distances biked by each person by matching the statements to the correct symbol. Each symbol may be used more than once or not at all.

$\frac{2}{10}$  $\frac{4}{8}$   =

$\frac{4}{8}$  $\frac{2}{5}$   <

$\frac{2}{10}$  $\frac{2}{5}$   >

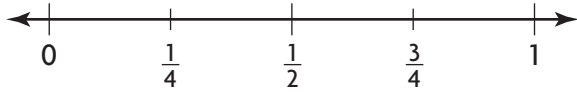
Show the Math

Demonstrate Your Thinking

Compare Fractions Using Benchmarks

Go Online

Interactive Examples

Use a number line to compare. Write $<$ or $>$.

1. $\frac{1}{8} \bigcirc \frac{6}{10}$

Think: $\frac{1}{8}$ is less than $\frac{1}{2}$. $\frac{6}{10}$ is more than $\frac{1}{2}$.

2. $\frac{4}{12} \bigcirc \frac{4}{6}$

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

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

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

6. $4\frac{9}{12} \bigcirc 5\frac{1}{3}$

7. $3\frac{4}{6} \bigcirc 3\frac{7}{8}$

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

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

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

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

12. $\frac{12}{5} \bigcirc \frac{3}{2}$

Problem Solving

13. Erika ran $2\frac{3}{8}$ mile. Maria ran $2\frac{3}{4}$ mile. Who ran farther?

14. Carlos finished $\frac{1}{3}$ of his art project on Monday. Tyler finished $\frac{1}{2}$ of his art project on Monday. Who finished more of his art project on Monday?

15.  **WRITE** *Math* Explain a strategy you could use to compare $\frac{2}{6}$ and $\frac{5}{8}$.

Lesson Check

16. What symbol makes the statement true?

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

17. Write a fraction, less than 1, with a denominator of 6 that is greater than $\frac{3}{4}$.
-

Spiral Review

18. Ramla is putting tiles on a table top. She needs 48 tiles for each of 8 rows. Each row will have 6 white tiles. The rest of the tiles will be purple. How many purple tiles will she need?
-

19. Each school bus going on the field trip holds 36 students and 4 adults. There are 6 filled buses on the field trip. How many people are going on the field trip?
-

20. Zahur wants to display his 72 collector's flags. He is going to put 6 flags in each row. How many rows of flags will he have in his display?
-

21. Julian wrote this number pattern on the board:
- 3, 10, 17, 24, 31, 38.
- Which of the numbers in Julian's pattern are composite numbers?
-

Name _____

Compare Fractions

I Can use a number line to compare fractions.

Florida's B.E.S.T.

- Fractions 4.FR.1.4
- Mathematical Thinking & Reasoning MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1



UNLOCK the Problem Real World

Every year, Jace's school has a fair. This year, $\frac{3}{8}$ of the booths had face painting and $\frac{1}{4}$ of the booths had sand art. Were there more booths with face painting or sand art?

Compare $\frac{3}{8}$ and $\frac{1}{4}$.

One Way Find a common denominator.

When two fractions have the same denominator, they have equal-sized parts. You can compare the number of parts.



THINK

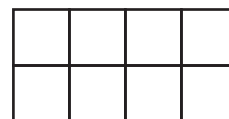
Think: 8 is a multiple of both 4 and 8.
Use 8 as a common denominator.

$$\frac{1}{4} = \frac{1 \times \boxed{}}{4 \times \boxed{}} = \frac{}{8}$$

$\frac{3}{8}$ already has 8 as a denominator.

MODEL AND RECORD

Shade the model. Then compare.


 $\frac{3}{8}$

 $\frac{2}{8}$

Another Way Use a number line.

Plot the fractions on a number line. The fraction that is farther right is greater.

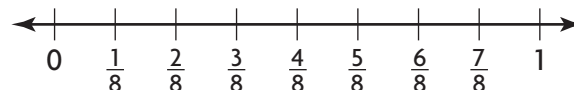
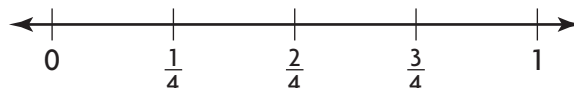
THINK

Use benchmarks to plot the fractions.

Think:

$\frac{3}{8}$ is more than $\frac{1}{4}$ and less than $\frac{1}{2}$.

MODEL AND RECORD


 $\frac{3}{8}$

 $\frac{1}{4}$

Since $\frac{3}{8} \bigcirc \frac{1}{4}$, there were more booths with _____.

Math Talk

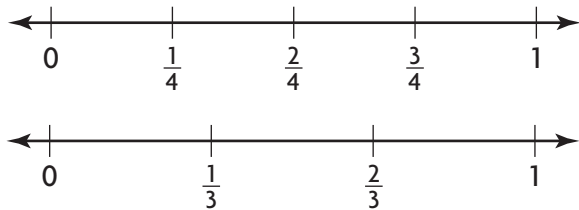
MTR 6.1

Assess the reasonableness of solutions.

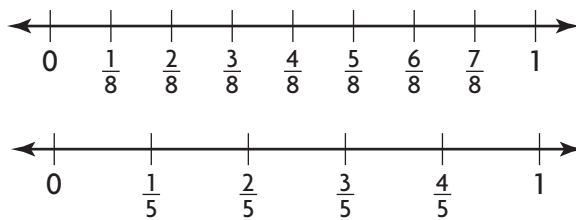
Why can you not use $\frac{1}{2}$ as a benchmark to compare $\frac{3}{8}$ and $\frac{1}{4}$?

Try This! Plot the numbers on the number line. Compare the fractions. Explain your reasoning.

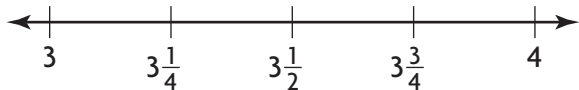
A $\frac{3}{4}$ $\frac{1}{3}$



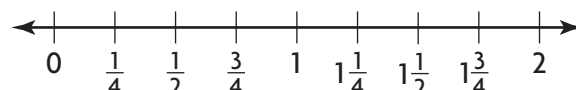
B $\frac{3}{5}$ $\frac{3}{8}$



C $3\frac{3}{4}$ $3\frac{7}{8}$



D $\frac{3}{2}$ $\frac{5}{4}$



1. Which would you use to compare $\frac{11}{12}$ and $\frac{5}{6}$, a common numerator or a common denominator? Explain.

Share and Show

Math Board

1. Compare
- $\frac{2}{5}$
- and
- $\frac{1}{10}$
- .

Think: Use _____ as a common denominator.

$$\frac{2}{5} = \frac{\boxed{}}{\boxed{}} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{10}$$

Think: four $\frac{1}{10}$ -size pieces \bigcirc one $\frac{1}{10}$ -size piece

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

2. Compare
- $\frac{6}{10}$
- and
- $\frac{3}{4}$
- .

Think: Use _____ as a common numerator.

$$\frac{6}{10}$$

$$\frac{3}{4} = \frac{\boxed{}}{\boxed{}} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

Think: one $\frac{1}{10}$ -size piece \bigcirc one $\frac{1}{8}$ -size piece

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

Compare. Write $<$, $>$, or $=$.

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

$$\checkmark 4. \frac{6}{3} \bigcirc \frac{12}{5}$$

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

$$6. 2\frac{6}{12} \bigcirc 2\frac{2}{4}$$

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How can using a common numerator or a common denominator help you compare fractions?

On Your Own

Compare. Write $<$, $>$, or $=$. Use a number line, if needed.

$$7. \frac{1}{3} \bigcirc \frac{1}{4}$$

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

$$9. 4\frac{3}{4} \bigcirc 4\frac{2}{6}$$

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

MTR Find a number that makes the statement true.

$$11. \frac{1}{2} > \frac{\boxed{}}{3}$$

$$12. \frac{3}{10} < \frac{\boxed{}}{5}$$

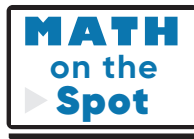
$$13. \frac{5}{12} < \frac{\boxed{}}{3}$$

$$14. \frac{3}{2} > \frac{4}{\boxed{}}$$

15. Students cut a pepperoni pizza into 12 equal slices and ate 5 slices. They cut a veggie pizza into 6 equal slices and ate 4 slices. Use fractions to compare the amounts of each pizza that were eaten.

Problem Solving · Applications

16. Jerry is making a strawberry smoothie.
Which measure is greatest: the amount of milk, cottage cheese, or strawberries?



- a. What do you need to find?

- b. How will you find the answer?

- c. Show your work.



Strawberry Smoothie

3 ice cubes

$\frac{3}{4}$ cup milk

$\frac{2}{6}$ cup cottage cheese

$\frac{8}{12}$ cup strawberries

$\frac{1}{4}$ teaspoon vanilla

$\frac{1}{8}$ teaspoon sugar



- d. Jerry needs more _____ than the other two ingredients.

17. Angie, Blake, Carlos, and Daisy went running. Angie ran $\frac{1}{3}$ mile, Blake ran $\frac{3}{5}$ mile, Carlos ran $\frac{7}{10}$ mile, and Daisy ran $\frac{1}{2}$ mile. Which runner ran the shortest distance? Who ran the greatest distance?

18. Jacky bought $\frac{5}{8}$ pound of potato salad and $\frac{4}{6}$ pound of macaroni salad for a picnic. Use the numbers to compare the amounts of potato salad and macaroni salad Jacky bought.



<



4

5

6

8

Compare Fractions

Go Online

Interactive Examples

Find a common denominator. Then compare. Write $<$, $>$, or $=$.

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

$$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12}$$

$$\frac{9}{12} < \frac{10}{12}$$

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

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

Plot the numbers on a number line. Then compare.

4. $\frac{13}{10} \bigcirc \frac{5}{3}$



5. $\frac{4}{12} \bigcirc \frac{1}{6}$



6. $5\frac{2}{6} \bigcirc 5\frac{1}{3}$




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



Problem Solving

8. A recipe uses $\frac{2}{3}$ cup of flour and $\frac{5}{8}$ cup of blueberries. Is there more flour or more blueberries in the recipe?

9. Lixue completed $\frac{5}{6}$ of the math homework and Al completed $\frac{4}{5}$ of the math homework. Did Lixue or Al complete more of the math homework?

10.  **WRITE** *Math* Give an example of fractions that you would compare by finding common denominators, and an example of fractions you would compare by finding common numerators.

Lesson Check

11. Pedro fills a glass $\frac{2}{4}$ full with orange juice. Write a fraction with a denominator of 6 that is greater than $\frac{2}{4}$.
12. Today, Sun wants to run less than $\frac{7}{12}$ mile. Write a fraction with a denominator of 4 to represent a distance that is less than $\frac{7}{12}$ mile.

Spiral Review

13. Ms. Khan traveled 372,645 miles last year on business. What is the value of 6 in 372,645?
14. One section of an auditorium has 12 rows of seats. Each row has 13 seats. What is the total number of seats in that section?

15. Hiro has 12 black-and-white photos and 18 color photos. He wants to put the photos in equal rows so each row has either black-and-white photos only or color photos only. In how many rows can Hiro arrange the photos?
16. The teacher writes $\frac{10}{12}$ on the board. Write an equivalent fraction using division.

Name _____

Compare and Order Fractions

I Can use number lines to compare and order fractions.

Florida's B.E.S.T.

- Fractions 4.FR.1.4
- Mathematical Thinking & Reasoning MTR.2.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1

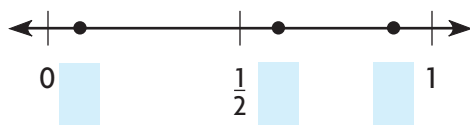


UNLOCK the Problem



Yumi has equal-sized bins for the recycling center. She filled $\frac{3}{5}$ of a bin with plastics, $\frac{1}{12}$ of a bin with paper, and $\frac{9}{10}$ of a bin with glass. Which bin is the most full?

Example 1 Locate and label $\frac{3}{5}$, $\frac{1}{12}$, and $\frac{9}{10}$ on the number line.



STEP 1 Compare each fraction to $\frac{1}{2}$.

$$\frac{3}{5} \bigcirc \frac{1}{2} \quad \frac{1}{12} \bigcirc \frac{1}{2} \quad \frac{9}{10} \bigcirc \frac{1}{2}$$

_____ and _____ are both greater than $\frac{1}{2}$.

_____ is less than $\frac{1}{2}$.

Label $\frac{1}{12}$ on the number line.

STEP 2 Compare $\frac{3}{5}$ and $\frac{9}{10}$.

Think: Use 10 as a common denominator.

$$\frac{3}{5} = \frac{\boxed{}}{\boxed{}} \times \frac{\boxed{}}{\boxed{}} = \frac{\boxed{}}{\boxed{}}$$

Since $\frac{6}{10} \bigcirc \frac{9}{10}$, you know that $\frac{3}{5} \bigcirc \frac{9}{10}$.

Label $\frac{3}{5}$ and $\frac{9}{10}$ on the number line.

The fraction the greatest distance from 0 has the greatest value.

The fraction with the greatest value is _____.

So, the bin with _____ is the most full.

Math Idea

Sometimes it is not reasonable to find the exact location of a point on a number line. Benchmarks can help you find approximate locations.

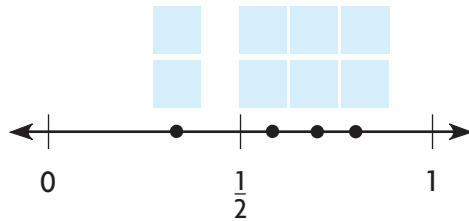
- Compare the distance between $\frac{3}{5}$ and 0 and the distance between $\frac{9}{10}$ and 0. What can you conclude about the relationship between $\frac{3}{5}$ and $\frac{9}{10}$? Explain.

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How do you know you located $\frac{3}{5}$ on the number line correctly?

Example 2 Write $\frac{7}{10}$, $\frac{1}{3}$, $\frac{7}{12}$, and $\frac{8}{10}$ in order from least to greatest.



STEP 1 Compare each fraction to $\frac{1}{2}$.

List fractions that are less than $\frac{1}{2}$: _____

List fractions that are greater than $\frac{1}{2}$: _____

The fraction with the least value is _____.

Locate and label $\frac{1}{3}$ on the number line.

STEP 2 Compare $\frac{7}{10}$ to $\frac{7}{12}$ and $\frac{8}{10}$.

Think: $\frac{7}{10}$ and $\frac{7}{12}$ have a common numerator.

$$\frac{7}{10} \bigcirc \frac{7}{12}$$

Think: $\frac{7}{10}$ and $\frac{8}{10}$ have a common denominator.

$$\frac{7}{10} \bigcirc \frac{8}{10}$$

Locate and label $\frac{7}{10}$, $\frac{7}{12}$, and $\frac{8}{10}$ on the number line.

The fractions in order from least to greatest are _____.

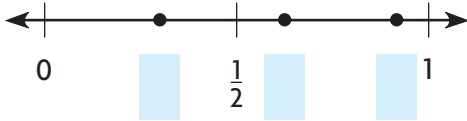
So, _____ < _____ < _____ < _____.

Try This! Write $\frac{3}{4}$, $\frac{3}{6}$, $\frac{1}{3}$, and $\frac{2}{12}$ in order from least to greatest.

_____ < _____ < _____ < _____

Share and Show**Math Board**

1. Locate and label points on the number line to help you write $\frac{3}{10}$, $\frac{11}{12}$, and $\frac{5}{8}$ in order from least to greatest.



Write the fraction with the greatest value.

✓ 2. $\frac{7}{10}, \frac{1}{5}, \frac{9}{10}$

3. $\frac{12}{5}, \frac{6}{5}, \frac{10}{8}$

4. $\frac{2}{8}, \frac{1}{8}, \frac{2}{4}, \frac{2}{6}$

Write the fractions in order from least to greatest.

✓ 5. $3\frac{1}{4}, 4\frac{3}{6}, 4\frac{1}{8}$

6. $\frac{3}{5}, \frac{2}{3}, \frac{3}{10}, \frac{4}{5}$

7. $\frac{3}{4}, \frac{7}{12}, \frac{5}{12}$

Math Talk

MTR 4.1 Engage in discussions on mathematical thinking.

How can benchmarks help you order fractions?

On Your Own

Write the fractions in order from least to greatest. Use a number line, if needed.

8. $\frac{5}{2}, \frac{3}{2}, \frac{6}{5}$

9. $\frac{4}{8}, \frac{5}{12}, \frac{1}{6}$

10. $\frac{7}{100}, \frac{9}{10}, \frac{4}{5}$

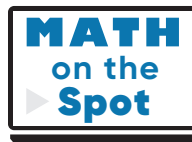
MTR Write a numerator that makes the statement true.

11. $\frac{1}{2} < \frac{\square}{10} < \frac{4}{5}$

12. $\frac{1}{4} < \frac{5}{12} < \frac{\square}{6}$

13. $6\frac{\square}{8} < 6\frac{3}{4} < 6\frac{7}{8}$

Problem Solving • Applications



14. Adriana, Hiro, and Trey ran in a 5-kilometer race. The table shows their finish times. In what order did Adriana, Hiro, and Trey finish the race?

a. What do you need to find?

b. What information do you need to solve the problem?

c. What information is not necessary?

d. How will you solve the problem?

e. Show the steps to solve the problem.

Finish line

5-Kilometer Race Results	
Name	Time
Adriana	$\frac{2}{3}$ hour
Hiro	$\frac{7}{12}$ hour
Trey	$\frac{3}{4}$ hour

f. Complete the sentences.

The runner who finished first is _____.

The runner who finished second is _____.

The runner who finished third is _____.

15. Alma used 3 beads to make a necklace. The lengths of the beads are $\frac{5}{6}$ inch, $\frac{5}{12}$ inch, and $\frac{1}{3}$ inch. What are the lengths in order from shortest to longest?

16. Victor has his grandmother's recipe for making mixed nuts.

$\frac{3}{4}$ cup pecans	$\frac{2}{12}$ cup peanuts
$\frac{1}{2}$ cup almonds	$\frac{7}{8}$ cup walnuts

Order the ingredients used in the recipe from least to greatest.

Compare and Order Fractions

Go Online

Interactive Examples

Write the fractions in order from least to greatest. Use a number line, if needed.

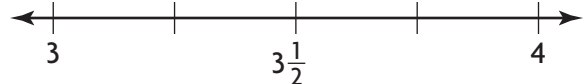
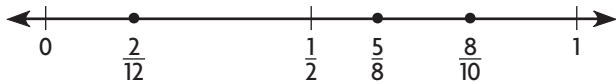
1. $\frac{5}{8}, \frac{2}{12}, \frac{8}{10}$

2. $3\frac{1}{5}, 3\frac{2}{3}, 3\frac{5}{8}$

Use benchmarks and a number line.

Think: $\frac{5}{8}$ is close to $\frac{1}{2}$. $\frac{2}{12}$ is close to 0.

$\frac{8}{10}$ is close to 1.



$$\frac{2}{12} < \frac{5}{8} < \frac{8}{10}$$

3. $\frac{1}{2}, \frac{2}{5}, \frac{6}{10}$


4. $\frac{12}{6}, \frac{6}{4}, \frac{13}{5}$

5. $\frac{1}{4}, \frac{5}{8}, \frac{1}{2}$

Problem Solving

6. Kami's math notebook weighs $\frac{1}{2}$ pound, her science notebook weighs $\frac{7}{8}$ pound, and her history notebook weighs $\frac{3}{4}$ pound. What are the weights in order from lightest to heaviest?

7. Jure has three picture frames. The thicknesses of the frames are $\frac{4}{5}$ inch, $\frac{3}{12}$ inch, and $\frac{5}{6}$ inch. What are the thicknesses in order from least to greatest?

8.  **WRITE** *Math* How is ordering fractions on a number line similar to and different from ordering whole numbers on a number line?

Lesson Check

9. Juan's three math quizzes this week took him $\frac{1}{3}$ hour, $\frac{4}{6}$ hour, and $\frac{1}{5}$ hour to complete. List the lengths of time in order from least to greatest.
10. On three days last week, Maria ran $\frac{3}{4}$ mile, $\frac{7}{8}$ mile, and $\frac{3}{5}$ mile. List the distances in order from least to greatest.

Spiral Review

11. Santiago collects 435 cents in nickels. How many nickels does he collect?
12. Lisa has 3 classes that each last 50 minutes. What is the total number of minutes of the 3 classes?
13. Lenka wrote these numbers: 2, 9, 15, 21. Which of Lenka's numbers is NOT a composite number?
14. Mrs. Traore serves $\frac{6}{8}$ of a loaf of bread with dinner. Write a fraction with a denominator of 4 that is equivalent to $\frac{6}{8}$.

Name _____

Chapter Review

1. What symbol makes the statement true?

$$\frac{3}{6} \begin{array}{c} < \\ > \end{array} \frac{5}{8}$$

2. Pedro's mother gave him a recipe for fruit salad.

$\frac{1}{3}$ cup pears	$\frac{1}{2}$ cup grapes
$\frac{3}{4}$ cup strawberries	$\frac{2}{3}$ cup bananas

Order the ingredients used in the recipe from least to greatest.

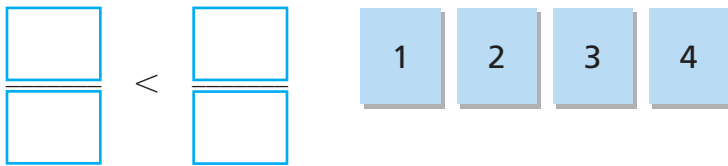
3. Write a fraction, less than 1, with a denominator of 8 that is greater than $\frac{5}{6}$.

4. A carpenter has screws with the lengths shown. Write each fraction in the correct column in the table.

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

Less than $\frac{1}{2}$ in.	Equal to $\frac{1}{2}$ in.	Greater than $\frac{1}{2}$ in.
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

5. Ana bought $\frac{1}{2}$ pound of cheese and $\frac{3}{4}$ pound of chicken for a picnic. Use the numbers tiles to compare the amounts of cheese and chicken Ana bought.



6. Ali has a ribbon that is $\frac{1}{3}$ meter long. Isabella has a ribbon that is $\frac{3}{5}$ meter long. Whose ribbon is longer? Explain.

7. In the Drama Club, $\frac{1}{4}$ of the students are fourth graders. In the Chess Club, $\frac{2}{3}$ of the students are fourth graders. Which club has the greater fraction of fourth graders?

The _____ has the greater fraction of fourth graders.

8. Which statements are true? Choose all that apply.

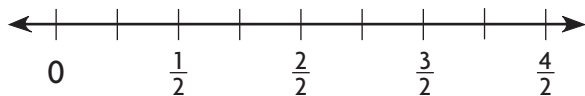
- Ⓐ $\frac{2}{5} < \frac{4}{10}$
- Ⓑ $\frac{1}{3} < \frac{5}{8}$
- Ⓒ $\frac{5}{8} > \frac{4}{12}$
- Ⓓ $\frac{10}{8} < \frac{12}{10}$
- Ⓔ $\frac{5}{6} > \frac{3}{4}$
- Ⓕ $\frac{5}{12} > \frac{7}{8}$

Name _____

9. A recipe uses $\frac{6}{4}$ cups of almonds and $1\frac{3}{4}$ cups of cherries.

Part A

Plot and label the amount of almonds and the amount of cherries on the number line.




Part B

Does the recipe include more almonds or cherries? Explain.

10. In an auditorium, $\frac{2}{8}$ of the seats are front-row seats, $\frac{3}{6}$ of the seats are general admission, and $\frac{1}{4}$ of the seats are in the balcony. For problems 10a–10c, choose True or False for each statement.

- 10a. There are more general admission seats than balcony seats. ☐ True ☐ False
- 10b. There are more front-row seats than general admission seats. ☐ True ☐ False
- 10c. There are the same number of front-row seats and balcony seats. ☐ True ☐ False

11. Mario, Erik, and Khalil fly kites at the park. The tail of Mario's kite is $\frac{6}{10}$ meter long. The tail of Erik's kite is $\frac{3}{8}$ meter long. The tail of Khalil's kite is $\frac{3}{5}$ meter long. Compare the lengths of the kite tails by matching the statements to the correct symbol. Each symbol may be used more than once or not at all.

$\frac{6}{10}$		$\frac{3}{8}$			$<$
$\frac{3}{8}$		$\frac{3}{5}$			$>$
$\frac{6}{10}$		$\frac{3}{5}$			$=$

12. Mai and her mother are making soup. The ingredients for the soup are given in the recipe.

Family's Favorite Soup

$1\frac{1}{2}$ cups chicken broth	$\frac{2}{6}$ cup onions
$1\frac{3}{4}$ cups vegetable broth	$\frac{4}{8}$ cup celery
$\frac{1}{4}$ cup cream	$\frac{1}{3}$ cup carrots

Part A

Which ingredient does Mai use the greater amount of: chicken broth or vegetable broth? Explain how you found your answer.

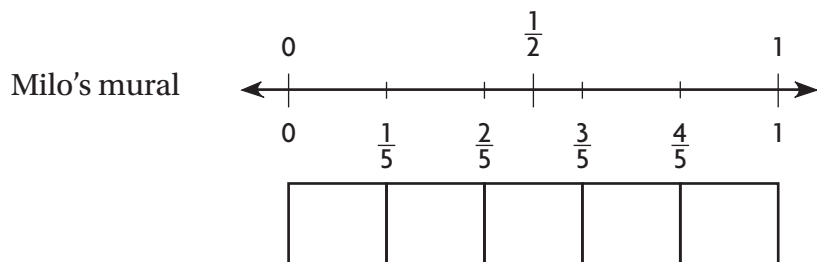
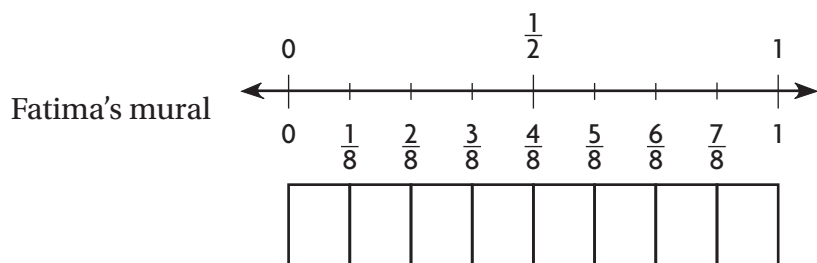
Part B

Which ingredient does Mai need the least amount of? Explain.

Name _____

13. Kim ran $\frac{6}{5}$ miles. Petra ran $\frac{12}{8}$ miles. Did Kim or Petra run the farthest? Explain.

14. Fatima has painted $\frac{5}{8}$ of a mural and Milo has painted $\frac{2}{5}$ of a mural. Who has painted more of the mural? Use the number line and model to show how you found your answer. Explain your reasoning.



15. Use the numbers tiles to write a fraction with the least possible value.

2	3	5
10	12	16

16. Rachel read her book for $\frac{3}{5}$ hour in the morning, $\frac{1}{2}$ hour in the afternoon, and $\frac{2}{3}$ hour in the evening. List the lengths of time in order from least to greatest.

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17. Write the missing number that makes the statement true.

$$\frac{2}{5} < \frac{\boxed{}}{2} < \frac{7}{10}$$

18. Suki rode her bike $\frac{4}{5}$ mile. Claire rode her bike $\frac{1}{3}$ mile. They want to compare how far they each rode their bikes using the benchmark $\frac{1}{2}$. For problems 18a–18c, circle the correct answers to complete each statement.

18a. Compare Suki's distance to the benchmark: $\frac{4}{5}$
 $<$
 $>$
 $=$
 $\frac{1}{2}$.

18b. Compare Claire's distance to the benchmark: $\frac{1}{3}$
 $<$
 $>$
 $=$
 $\frac{1}{2}$.

18c. Suki rode her bike
 a longer distance than
 the same distance as
 a shorter distance than
 Claire.