Name _____

# Problem Solving • Compare Fractions

Nick walked $\frac{2}{4}$ mile to the gym. Then he walked $\frac{3}{4}$ mile to the store.
Which distance is shorter?

| Read the Problem | Solve the Problem |
|---|---|
| **What do I need to find?**<br><br>I need to find which distance is shorter. | **Compare the lengths.**<br><br>$\frac{2}{4}$ $<$ $\frac{3}{4}$<br><br>The length of the $\frac{2}{4}$ model is less than the length of the $\frac{3}{4}$ model.<br><br>So, the distance to the ___gym___ is shorter. |
| **What information do I need to use?**<br><br>Nick walked $\frac{2}{4}$ mile to the gym. Then he walked $\frac{3}{4}$ mile to the store. | |
| **How will I use the information?**<br><br>I will use ___fraction strips___<br><br>and ___compare___ the lengths of the models to find which distance is shorter. | |

**1.** Mariana and Shawn each had 6 pages to read. Mariana read $\frac{2}{3}$ of her pages. Shawn read $\frac{1}{3}$ of his pages. Who read more pages? **Explain.**

_____

_____

**2.** Carlos ran $\frac{3}{8}$ of the race course. Lori ran $\frac{3}{6}$ of the same race course. Who ran farther? **Explain.**

_____

_____

Name _____

# Fraction Frenzy

**Use the model to help you compare the fractions.**
**Write < or > .**

**1.** Compare $\frac{3}{8}$ and $\frac{7}{8}$ .
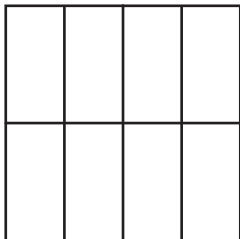
$\frac{3}{8} \bigcirc \frac{7}{8}$

**2.** Compare $\frac{2}{6}$ and $\frac{5}{6}$ .
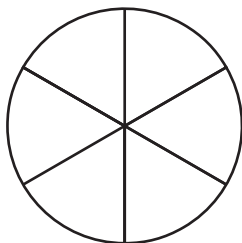
$\frac{2}{6} \bigcirc \frac{5}{6}$

**3.** Compare $\frac{1}{2}$ and $\frac{1}{4}$ .
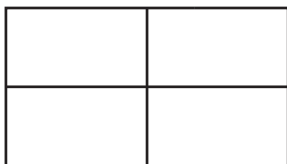
$\frac{1}{2} \bigcirc \frac{1}{4}$

**4.** ▸ Write Math ▸ Draw a set of 8 counters and color $\frac{4}{8}$ of the counters red. Draw another set of 8 counters and color $\frac{5}{8}$ red. Write < or > to compare the fraction of red counters in the two sets.

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

# Compare Fractions with the Same Denominator

Pete's Prize Pizzas makes a special pizza. Of the toppings, $\frac{1}{4}$ is peppers and $\frac{3}{4}$ is ham. Does the pizza have more peppers or ham?

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

**Step 1** The denominators of both fractions are the same, **4**. Use fraction circles divided into fourths to model the fractions.

**Step 2** Shade 1 part of the first circle to show $\frac{1}{4}$.

Shade **3** parts of the second circle to show $\frac{3}{4}$.

**Step 3** Compare. **3** parts is more than **1** part.

$$\frac{3}{4} \bigcirc\!\!\!\!> \frac{1}{4}$$

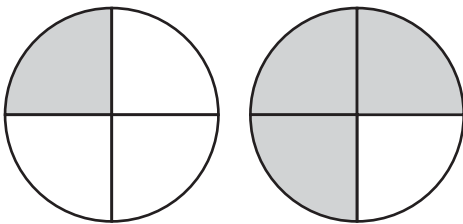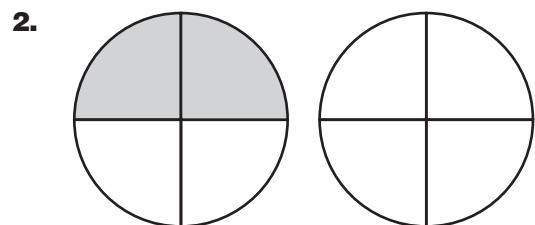So, the pizza has more **ham**.

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

1.

$$\frac{2}{6} \bigcirc \frac{1}{6}$$

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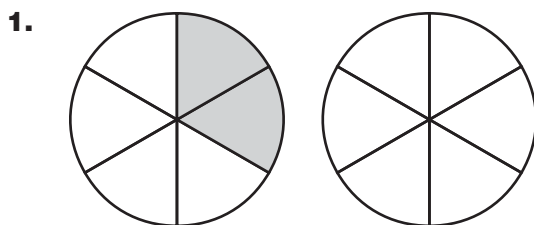
$$\frac{2}{4} \bigcirc \frac{2}{4}$$

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

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

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

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

# More or Less

**Write all the fractions with the same denominator
that can answer the question.**

**1.** Susan ate part of a pizza. She ate more than $\frac{1}{3}$ of the pizza. How much of the pizza might Susan have eaten?

_____

**2.** Jean read $\frac{1}{4}$ of her book on Monday. She read the same amount on Tuesday. What part of her book did Jean read on Tuesday?

_____

**3.** Amy began a running program. She ran less than $\frac{5}{6}$ of a mile. What part of a mile could Amy have run?

_____

**4.** Alex used $\frac{3}{8}$ of a can of paint to paint a chair. He used less than that amount to paint a stool. What part of a can of paint might Alex have used to paint the stool?

_____

**5.** Paul practiced playing the piano for $\frac{1}{2}$ hour on Friday. He practiced for the same amount of time on Saturday. How long did Paul practice on Saturday?

_____

**6.** Jolene drove to a state park. She drove $\frac{1}{4}$ of the distance the first day. She drove farther the second day. What part of the distance might Jolene have driven the second day?

_____

**7.** **Write Math** ▸ **Explain** how you solved Exercise 6.

_____

_____

_____

Name _____

# Compare Fractions with the Same Numerator

Ryan takes a survey of his class. $\frac{1}{8}$ of the class has dogs, and $\frac{1}{3}$ of the class has cats. Are there more dog owners or cat owners in Ryan's class?

**Compare the fractions.** $\frac{1}{8} \bigcirc \frac{1}{3}$
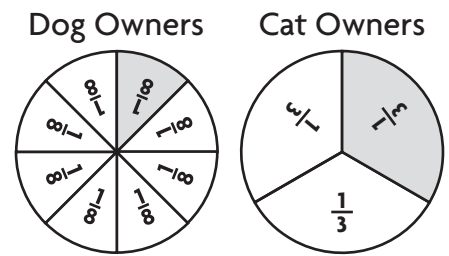
Dog Owners    Cat Owners

**Step 1** Divide the first circle into 8 equal parts. Shade $\frac{1}{8}$ of the circle to show dog owners.

**Step 2** Divide the second circle into 3 equal parts. Shade $\frac{1}{3}$ of the circle to show cat owners.

**Step 3** Compare the shaded parts of the circles. Which shaded part is larger?

$\frac{1}{3}$ is larger than $\frac{1}{8}$.   $\frac{1}{8} \enclose{circle}{<} \frac{1}{3}$

So, there are more **cat owners** than **dog owners** in Ryan's class.

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

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

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

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

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

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

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

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

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

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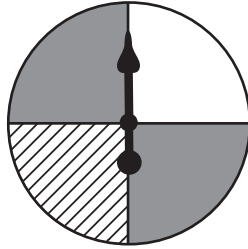
10. $\frac{1}{3} \bigcirc \frac{1}{3}$

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

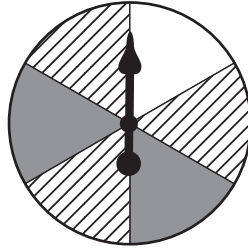12. $\frac{2}{8} \bigcirc \frac{2}{6}$
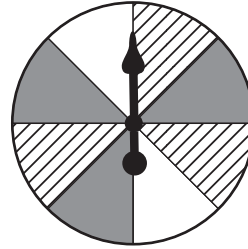
# Spin the Wheel of Fractions

**Use the spinners for 1–6.**



Spinner A      Spinner B      Spinner C

1. Use fractions to compare the white section on Spinner A to the white section on Spinner B.

   _____

2. Use fractions to compare the striped sections on Spinner B to the striped sections on Spinner C.

   _____

3. Use fractions to compare the gray sections on Spinner B to the gray sections on Spinner A.

   _____

4. Use fractions to compare the gray sections on Spinner B to the white sections on Spinner C.

   _____

5. Use fractions to compare the striped section and white section combined on Spinner A to the gray sections on Spinner A.

   _____

6. Use fractions to compare the white sections on Spinner C to the gray sections on Spinner A.

   _____

7. **Stretch Your Thinking** Draw two spinners that are the same size. Divide each spinner into a different number of equal parts. Color two parts on each spinner red. Then use fractions to compare the red parts on your spinners.

## Compare Fractions

Mrs. Brown's recipe uses $\frac{2}{3}$ cup of flour. Mrs. Young's recipe uses $\frac{3}{4}$ cup of flour. Which recipe uses more flour?

**Compare $\frac{2}{3}$ and $\frac{3}{4}$.**

• You can compare fractions using fraction strips.

**Step 1** Model each fraction.

**Step 2** Compare the lengths of the models. The length of the $\frac{3}{4}$ model is greater than the length of the $\frac{2}{3}$ model.

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

| 1 |
|---|

| $\frac{1}{3}$ | $\frac{1}{3}$ | $\frac{1}{3}$ |
|---|---|---|

| $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ |
|---|---|---|---|

So, Mrs. Young's recipe uses more flour.

**Compare $\frac{3}{6}$ and $\frac{4}{6}$. Which is greater?**

• The denominators are the same, so compare the numerators.

$3 < 4$, so $\frac{3}{6} < \frac{4}{6}$.

So, $\frac{4}{6}$ is greater than $\frac{3}{6}$. $\frac{4}{6} \boxed{>} \frac{3}{6}$

**Compare. Write $<$, $>$, or $=$. Write the strategy you used.**

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

_____

**2.** $\frac{7}{8} \bigcirc \frac{5}{6}$

_____

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

_____

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

_____

# Food Fractions

**Use the recipe for 1–6. Write a comparison statement with fractions for 1–3.**

**RECIPE FOR SNACK MIX**

$\frac{2}{3}$ cup peanuts

$\frac{1}{2}$ cup pretzels

$\frac{1}{4}$ cup dried bananas

$\frac{1}{3}$ cup cereal squares

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

**1.** Is a lesser amount of dried bananas or raisins used?

_____

**2.** Is a greater amount of raisins or peanuts used?

_____

**3.** Is a greater amount of cereal squares or pretzels used?

_____

**4.** Which ingredient has the least amount in the recipe?

_____

**5.** Which ingredient has the greatest amount in the recipe?

_____

**6. What if** $\frac{2}{2}$ cup of chocolate chips is added to the recipe? Would there be a greater amount of pretzels or chocolate chips?

_____

**7.** Write Math ▶ Make up your own recipe or find one at home. Then compare some of the amounts of ingredients.

_____

_____
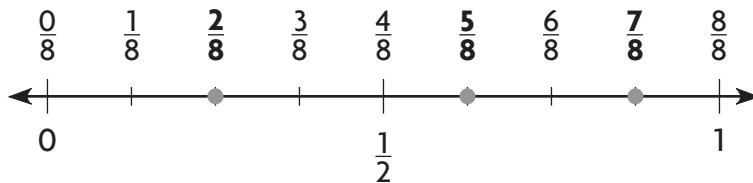
_____

Name _____

# Compare and Order Fractions

You can use a number line to compare and order fractions.

**Order $\frac{5}{8}$, $\frac{2}{8}$, and $\frac{7}{8}$ from least to greatest.**

Since you are comparing eighths, use a number line divided into eighths.

**Step 1** Draw a point on the number line to show $\frac{5}{8}$.

**Step 2** Repeat for $\frac{2}{8}$ and $\frac{7}{8}$.

$$\frac{0}{8} \quad \frac{1}{8} \quad \mathbf{\frac{2}{8}} \quad \frac{3}{8} \quad \frac{4}{8} \quad \mathbf{\frac{5}{8}} \quad \frac{6}{8} \quad \mathbf{\frac{7}{8}} \quad \frac{8}{8}$$
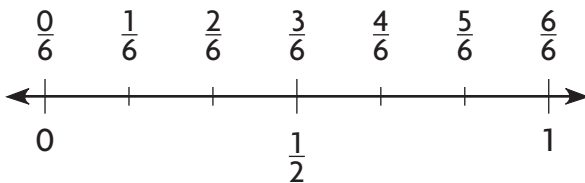


**Step 3** Fractions increase in size as you move right on the number line. Write the fractions in order from left to right.

So, the order from least to greatest is $\frac{2}{8}$, $\frac{5}{8}$, $\frac{7}{8}$.

**Write the fractions in order from least to greatest.**

**1.** $\frac{4}{6}$, $\frac{6}{6}$, $\frac{3}{6}$

$$\frac{0}{6} \quad \frac{1}{6} \quad \frac{2}{6} \quad \frac{3}{6} \quad \frac{4}{6} \quad \frac{5}{6} \quad \frac{6}{6}$$



**2.** $\frac{2}{3}$, $\frac{2}{6}$, $\frac{2}{4}$

**Think:** When the numerators are the same, look at the denominators to compare the size of the pieces.

_____

**3.** $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$

**4.** $\frac{3}{4}$, $\frac{0}{4}$, $\frac{2}{4}$

_____

# Race to the Fraction Line

**Use the table for 1–7.**

| Race Results | | | | | |
|---|---|---|---|---|---|
| **Runners** | Jean | Shannon | Sally | Julie | Rachel |
| **Fraction of Race Completed After 30 Minutes** | $\frac{3}{8}$ | $\frac{3}{4}$ | $\frac{1}{4}$ | $\frac{2}{4}$ | $\frac{5}{8}$ |

**1.** Who is closest to the finish line? What fraction of the race has she run?

_____

**2.** Who is farthest from the finish line?

_____

**3.** List Jean, Shannon, and Sally in order from the closest to the finish line to the farthest.

_____

_____

**4.** List Shannon, Julie, and Rachel in order from the farthest from the finish line to the closest.

_____

_____

**5.** List all the fractions of the race completed in order from closest to the finish line to the farthest.

_____

_____

**6.** List all the runners in order from farthest from the finish line to the closest.

_____

_____

_____

**7.** **Write Math** ➤ Ashley is another runner, and she has completed $\frac{7}{8}$ of the race. Is she closest to the finish line? **Explain** your answer.
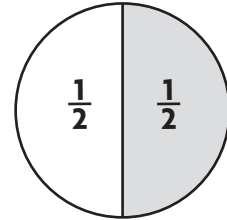
_____

_____

_____

# Model Equivalent Fractions

**Equivalent fractions** are two or more fractions that name the same amount.

You can use fraction circles to model equivalent fractions.

**Find a fraction that is equivalent to $\frac{1}{2}$.**     $\frac{1}{2} = \frac{\square}{4}$

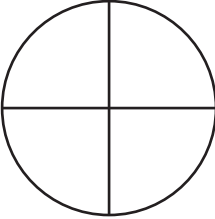**Step 1** Look at the first circle. It is divided into 2 equal parts. Shade one part to show $\frac{1}{2}$.

**Step 2** Draw a line to divide the circle into 4 equal parts because 4 is the denominator in the second fraction.
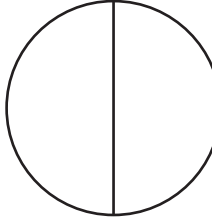
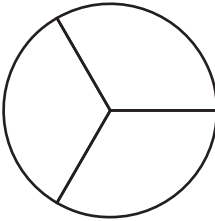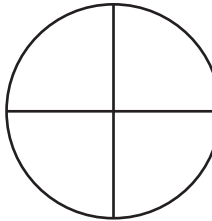**Step 3** Count the number of parts shaded now. There are 2 parts out of 4 parts shaded.
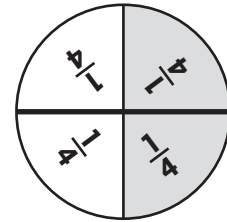
$\frac{1}{2} = \frac{2}{4}$     So, $\frac{1}{2}$ is equivalent to $\frac{2}{4}$.

**Shade the model. Then divide the pieces to find the equivalent fraction.**

**1.**

$\frac{1}{4} = \frac{\square}{8}$
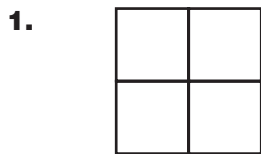
**2.**

$\frac{1}{2} = \frac{\square}{8}$

**3.**

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

**4.**
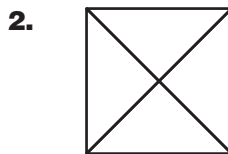
$\frac{3}{4} = \frac{\square}{8}$

# Name Equivalent Fractions

**For each of the following shapes, shade some of the parts. Write the fraction that represents the parts you shaded. Then use the shape to write an equivalent fraction for the parts you shaded.**
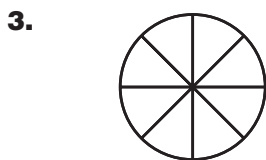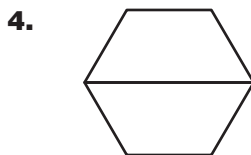
**1.**

Fraction: _____

Equivalent Fraction: _____

**2.**
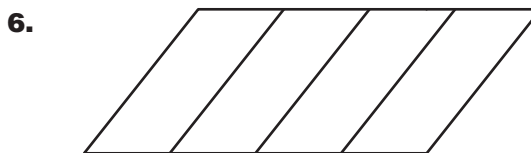
Fraction: _____

Equivalent Fraction: _____

**3.**

Fraction: _____

Equivalent Fraction: _____

**4.**

Fraction: _____

Equivalent Fraction: _____

**5.**

Fraction: _____

Equivalent Fraction: _____

**6.**

Fraction: _____

Equivalent Fraction: _____

**7. Stretch Your Thinking** Draw a model that shows $\frac{3}{3}$ shaded.
Then use your drawing to find two equivalent fractions.

# Equivalent Fractions

Kaitlyn used $\frac{3}{4}$ of a sheet of wrapping paper.

**Find a fraction that is equivalent to $\frac{3}{4}$.**     $\frac{3}{4} = \frac{\square}{8}$

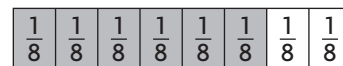**Step 1** The top fraction strip is divided into 4 equal parts. Shade $\frac{3}{4}$ of the strip to show how much paper Kaitlyn used.

| $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ |
|---|---|---|---|

**Step 2** The bottom strip is divided into 8 equal parts. Shade parts of the strip until the same amount is shaded as in the top strip.
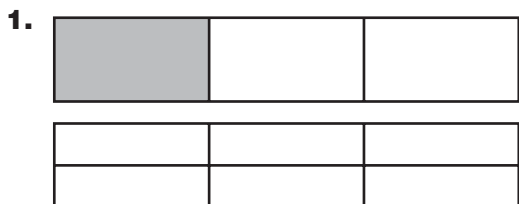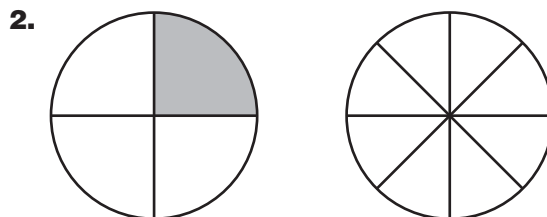**6 parts of the bottom strip are shaded.**

| $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ |
|---|---|---|---|---|---|---|---|

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

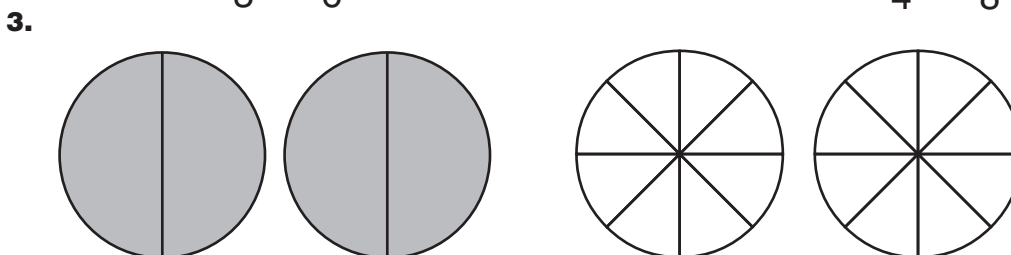So, $\frac{6}{8}$ is equivalent to $\frac{3}{4}$.

**Each shape is 1 whole. Shade the model to find the equivalent fraction.**

**1.**

$\frac{1}{3} = \frac{\square}{6}$

**2.**

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

**3.**

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

# Fractions Equal Fun

**Use equivalent fractions and the information in the table for 1–6.**

| Marble Collections | | | | |
|---|---|---|---|---|
| **Friend** | Steve | Kim | Mary | Damon |
| **Fraction of Marbles That Are a Solid Color** | $\frac{1}{8}$ | $\frac{2}{3}$ | $\frac{1}{6}$ | $\frac{3}{4}$ |
| **Fraction of Marbles That Are Striped** | $\frac{7}{8}$ | $\frac{1}{3}$ | $\frac{5}{6}$ | $\frac{1}{4}$ |

1. If Steve has 16 marbles, how many are a solid color?

_____

2. If Damon has 20 marbles altogether, how many of them are striped?

_____

3. If Kim has 12 solid-color marbles, how many marbles does she have altogether?

_____

4. If Mary has 10 striped marbles, how many marbles does she have altogether?

_____

5. **What if** Mary has 15 striped marbles? How many solid-color marbles does she have?

_____

6. If Steve has 4 solid-color marbles, how many marbles does he have altogether?

_____

7. **Stretch Your Thinking** Ann arranges her marbles in groups, with 8 marbles in each group. She writes the fraction $\frac{5}{8}$ to show the fraction of marbles in each group that is red. What equivalent fraction names the fraction of marbles in 6 groups that are red? **Explain**.

_____

_____