

Name \_\_\_\_\_

**Problem Solving • Compare Fractions**

**Essential Question** How can you use the strategy *act it out* to solve comparison problems?



**Number and Operations—Fractions—3.NF.A.3d** Also 3.NF.A.1

**MATHEMATICAL PRACTICES**  
MP1, MP3, MP4, MP5

**Unlock the Problem**

Mary and Vincent climbed up a rock wall at the park. Mary climbed  $\frac{3}{4}$  of the way up the wall. Vincent climbed  $\frac{3}{8}$  of the way up the wall. Who climbed higher?

You can act out the problem by using manipulatives to help you compare fractions.

**Remember**

- < is less than
- > is greater than
- = is equal to



**Read the Problem**

**What do I need to find?**

\_\_\_\_\_

**What information do I need to use?**

Mary climbed \_\_\_\_\_ of the way.

Vincent climbed \_\_\_\_\_ of the way.

**How will I use the information?**

I will use \_\_\_\_\_

and \_\_\_\_\_ the lengths of

the models to find who climbed

\_\_\_\_\_.



**Solve the Problem**

**Record the steps you used to solve the problem.**

1



Compare the lengths.

\_\_\_\_\_ ○ \_\_\_\_\_

The length of the  $\frac{3}{4}$  model is \_\_\_\_\_

than the length of the  $\frac{3}{8}$  model.

So, \_\_\_\_\_ climbed higher on the rock wall.

**Math Talk**

**MATHEMATICAL PRACTICES 4**

**Use Models** When comparing fraction using fraction strips, how do you know which fraction is the least fraction?

## Try Another Problem

Students at day camp are decorating paper circles for placemats. Tracy finished  $\frac{3}{6}$  of her placemat. Kim finished  $\frac{5}{6}$  of her placemat. Who finished more of her placemat?

### 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

Record the steps you used to solve the problem.

**Math  
Talk**

MATHEMATICAL PRACTICES **2**

**Use Reasoning** How do you know that  $\frac{5}{6}$  is greater than  $\frac{3}{6}$  without using models?

1. How did your model help you solve the problem? \_\_\_\_\_

\_\_\_\_\_

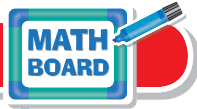
2. Tracy and Kim each had a carton of milk with lunch. Tracy drank  $\frac{5}{8}$  of her milk. Kim drank  $\frac{7}{8}$  of her milk. Who drank more of her milk? Explain.

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

## Share and Show



1. At the park, people can climb a rope ladder to its top. Rosa climbed  $\frac{2}{8}$  of the way up the ladder. Justin climbed  $\frac{2}{6}$  of the way up the ladder. Who climbed higher on the rope ladder?

**First**, what are you asked to find?

\_\_\_\_\_

**Then**, model and compare the fractions. **Think:** Compare  $\frac{2}{8}$  and  $\frac{2}{6}$ .

**Last**, find the greater fraction.

\_\_\_\_\_ ○ \_\_\_\_\_

So, \_\_\_\_\_ climbed higher on the rope ladder.

2. What if Cara also tried the rope ladder and climbed  $\frac{2}{4}$  of the way up? Who climbed highest on the rope ladder: Rosa, Justin, or Cara? Explain how you know.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## On Your Own

3. **MATHEMATICAL PRACTICE 5** **Use a Concrete Model** Ted walked  $\frac{2}{3}$  mile to his soccer game. Then he walked  $\frac{1}{3}$  mile to his friend's house. Which distance is shorter? Explain how you know.

\_\_\_\_\_  
\_\_\_\_\_

## Unlock the Problem

- ✓ Circle the question.
- ✓ Underline important facts.
- ✓ Act out the problem using manipulatives.

## Use the table for 4–5.

4. **GO DEEPER** Suri is spreading jam on 8 biscuits for breakfast. The table shows the fraction of biscuits spread with each jam flavor. Which flavor did Suri use on the most biscuits?

**Hint:** Use 8 counters to model the biscuits.

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5. **WRITE** *Math* **What's the Question?** The answer is strawberry.

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6. **THINK SMARTER** Suppose Suri had also used plum jam on the biscuits. She frosted  $\frac{1}{2}$  of the biscuits with peach jam,  $\frac{1}{4}$  with raspberry jam,  $\frac{1}{8}$  with strawberry jam, and  $\frac{1}{8}$  with plum jam. Which flavor of jam did Suri use on the most biscuits?

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7. Ms. Gordon has many snack bar recipes. One recipe uses  $\frac{1}{3}$  cup oatmeal  $\frac{1}{4}$  cup of milk, and  $\frac{1}{2}$  cup flour. Which ingredient will Ms. Gordon use the most of?

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Suri's Biscuits

Jam Flavor	Fraction of Biscuits
Peach	$\frac{3}{8}$
Raspberry	$\frac{4}{8}$
Strawberry	$\frac{1}{8}$

**WRITE** *Math* • Show Your Work • • • • •



8. **THINK SMARTER** Rick lives  $\frac{4}{6}$  mile from school. Noah lives  $\frac{3}{6}$  mile from school.

Use the fractions and symbols to show which distance is longer.

$\frac{3}{6}$  ,  $\frac{4}{6}$  , < and >

Name \_\_\_\_\_

## Problem Solving • Compare Fractions

COMMON CORE STANDARD—3.NF.A.3d  
Develop understanding of fractions as numbers.

## Solve.

1. Luis skates  $\frac{2}{3}$  mile from his home to school. Isabella skates  $\frac{2}{4}$  mile to get to school. Who skates farther?

**Think:** Use fraction strips to act it out.

\_\_\_\_\_ Luis

2. Sandra makes a pizza. She puts mushrooms on  $\frac{2}{8}$  of the pizza. She adds green peppers to  $\frac{5}{8}$  of the pizza. Which topping covers more of the pizza?

3. The jars of paint in the art room have different amounts of paint. The green paint jar is  $\frac{4}{8}$  full. The purple paint jar is  $\frac{4}{6}$  full. Which paint jar is less full?

4. Jan has a recipe for bread. She uses  $\frac{2}{3}$  cup of flour and  $\frac{1}{3}$  cup of chopped onion. Which ingredient does she use more of, flour or onion?

5. **WRITE** *Math* Explain how you can find whether  $\frac{5}{6}$  or  $\frac{5}{8}$  is greater.

## Lesson Check (3.NF.A.3d)

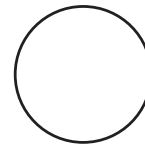
1. Ali and Jonah collect seashells in identical buckets. When they are finished, Ali's bucket is  $\frac{2}{6}$  full and Jonah's bucket is  $\frac{3}{6}$  full. Compare the fractions using  $>$ ,  $<$  or  $=$ .
2. Rosa paints a wall in her bedroom. She puts green paint on  $\frac{5}{8}$  of the wall and blue paint on  $\frac{3}{8}$  of the wall. Compare the fractions using  $>$ ,  $<$  or  $=$ .

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

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

## Spiral Review (3.OA.B.6, 3.OA.D.9, 3.NF.A.1)

3. Dan divides a pie into eighths. How many equal parts are there?
4. Draw lines to divide the circle into 4 equal parts.



5. Charles places 30 pictures on his bulletin board in 6 equal rows. How many pictures are in each row?
6. Describe the pattern in the table.

<b>Tables</b>	1	2	3	4	5
<b>Chairs</b>	5	10	15	20	25



Name \_\_\_\_\_

## Compare Fractions with the Same Denominator

**Essential Question** How can you compare fractions with the same denominator?



**Number and Operations—Fractions—3.NF.A.3d** Also 3.NF.A.1, 3.NF.A.2b

**MATHEMATICAL PRACTICES**  
MP2, MP3, MP5, MP8

### Unlock the Problem



Jeremy and Christina are each making quilt blocks. Both blocks are the same size and both are made of 4 equal-size squares.  $\frac{2}{4}$  of Jeremy's squares are green.  $\frac{1}{4}$  of Christina's squares are green. Whose quilt block has more green squares?



**Compare fractions of a whole.**

- Shade  $\frac{2}{4}$  of Jeremy's quilt block.
- Shade  $\frac{1}{4}$  of Christina's quilt block.
- Compare  $\frac{2}{4}$  and  $\frac{1}{4}$ .

The greater fraction will have the larger amount of the whole shaded.

$$\frac{2}{4} \bigcirc \frac{1}{4}$$

So, \_\_\_\_\_ quilt block has more green squares.



**Compare fractions of a group.**

Jen and Maggie each have 6 buttons.

- Shade 3 of Jen's buttons to show the number of buttons that are red. Shade 5 of Maggie's buttons to show the number that are red.
- Write a fraction to show the number of red buttons in each group. Compare the fractions.



There are the same number of buttons in each group, so you can count the number of red buttons to compare the fractions.

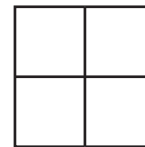
$$3 < \underline{\hspace{1cm}}, \text{ so } \frac{\blacksquare}{6} < \frac{\blacksquare}{6}.$$

So, \_\_\_\_\_ has a greater fraction of red buttons.

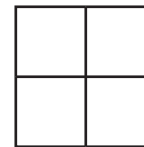
- Circle the two fractions you need to compare.
- How are the two fractions alike?

\_\_\_\_\_

**Jeremy's Quilt Block**



**Christina's Quilt Block**



### Math Idea

You can compare two fractions when they refer to the same whole or to groups that are the same size.





### Use fraction strips and a number line.

At the craft store, one piece of ribbon is  $\frac{2}{8}$  yard long. Another piece of ribbon is  $\frac{7}{8}$  yard long. If Sean wants to buy the longer piece of ribbon, which piece should he buy?

#### Compare $\frac{2}{8}$ and $\frac{7}{8}$ .

- Shade the fraction strips to show the locations of  $\frac{2}{8}$  and  $\frac{7}{8}$ .
- Draw and label points on the number line to represent the distances  $\frac{2}{8}$  and  $\frac{7}{8}$ .
- Compare the lengths.

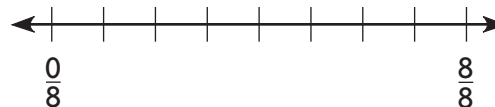
$\frac{2}{8}$  is to the left of  $\frac{7}{8}$ . It is closer to  $\frac{0}{8}$ , or \_\_\_\_\_.

$\frac{7}{8}$  is to the \_\_\_\_\_ of  $\frac{2}{8}$ . It is closer to \_\_\_\_\_, or \_\_\_\_\_.

$<$  and  $>$

So, Sean should buy the piece of ribbon that is yard long.

- On a number line, a fraction farther to the right is greater than a fraction to its left.
- On a number line, a fraction farther to the left is \_\_\_\_\_ a fraction to its right.



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### Use reasoning.

Ana and Omar are decorating same-size bookmarks. Ana covers  $\frac{3}{3}$  of her bookmark with glitter. Omar covers  $\frac{1}{3}$  of his bookmark with glitter. Whose bookmark is covered with more glitter?

#### Compare $\frac{3}{3}$ and $\frac{1}{3}$ .

- When the denominators are the same, the whole is divided into same-size pieces. You can look at the \_\_\_\_\_ to compare the number of pieces.
- Both fractions involve third-size pieces. \_\_\_\_\_ pieces are more than \_\_\_\_\_ piece.  $3 >$  \_\_\_\_\_, so  $>$  .

So, \_\_\_\_\_ bookmark is covered with more glitter.



#### MATHEMATICAL PRACTICES 6

**Explain** how you can use reasoning to compare fractions with the same denominator.

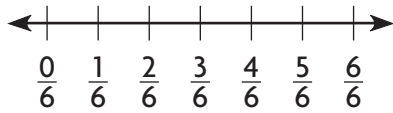


Name \_\_\_\_\_

## Share and Show



1. Draw points on the number line to show  $\frac{1}{6}$  and  $\frac{5}{6}$ . Then compare the fractions.



Think:  $\frac{1}{6}$  is to the left of  $\frac{5}{6}$  on the number line.

$$\frac{1}{6} \bigcirc \frac{5}{6}$$

**Math Talk**

MATHEMATICAL PRACTICES 2

**Reason Abstractly** Why do fractions increase in size as you move right on the number line?

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

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

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

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

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

## On Your Own

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

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

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

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

9.  $\frac{0}{8} \bigcirc \frac{2}{8}$

**THINK SMARTER** Write a fraction less than, greater than, or equal to the given fraction.

10.  $\frac{1}{2} < \frac{\square}{\square}$

11.  $\frac{\square}{\square} < \frac{12}{6}$

12.  $\frac{8}{8} = \frac{\square}{\square}$

13.  $\frac{\square}{\square} > \frac{2}{4}$

## Problem Solving • Applications



14. Carlos finished  $\frac{5}{8}$  of his art project on Monday. Tyler finished  $\frac{7}{8}$  of his art project on Monday. Who finished more of his art project on Monday?

15. **MATHEMATICAL PRACTICE 2 Use Reasoning** Ms. Endo made two loaves of bread that are the same size. Her family ate  $\frac{1}{4}$  of the banana bread and  $\frac{3}{4}$  of the cinnamon bread. Which loaf of bread had less left over?

16. **THINK SMARTER** Todd and Lisa are comparing fraction strips. Which statements are correct? Mark all that apply.

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

B  $\frac{5}{6} < \frac{4}{6}$

C  $\frac{2}{3} > \frac{1}{3}$

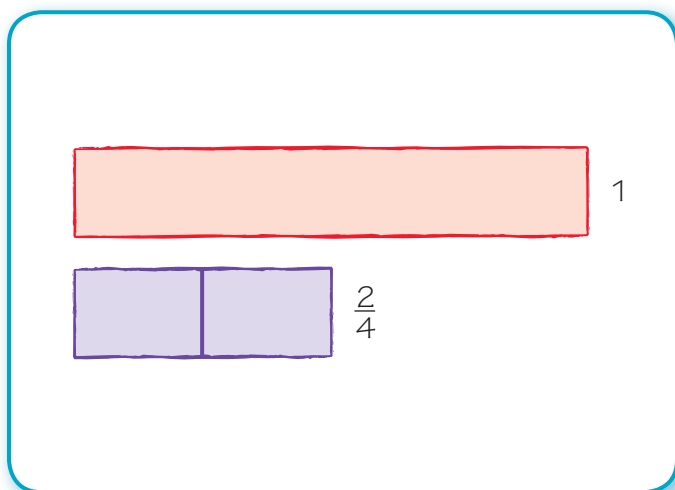
D  $\frac{5}{8} > \frac{4}{8}$

**THINK SMARTER** What's the Error?

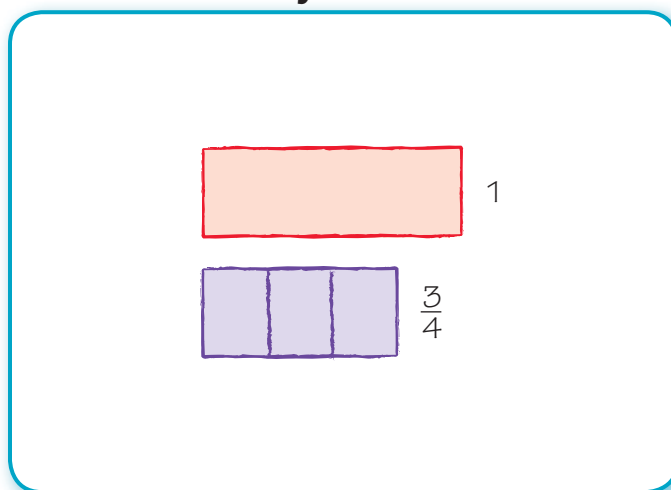
17. Gary and Vanessa are comparing fractions. Vanessa models  $\frac{2}{4}$  and Gary models  $\frac{3}{4}$ . Vanessa writes  $\frac{3}{4} < \frac{2}{4}$ . Look at Gary's model and Vanessa's model and describe her error.



**Vanessa's Model**



**Gary's Model**



- Describe Vanessa's error.

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18. **GO DEEPER** Explain how to correct Vanessa's error. Then show the correct model.

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Name \_\_\_\_\_

## Compare Fractions with the Same Denominator



**COMMON CORE STANDARD—3.NF.A.3d**  
Develop understanding of fractions as numbers.

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

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

2.  $\frac{3}{6} \bigcirc \frac{0}{6}$

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

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

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

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

7.  $\frac{8}{8} \bigcirc \frac{0}{8}$

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

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

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

11.  $\frac{1}{2} \bigcirc \frac{0}{2}$

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

13.  $\frac{1}{4} \bigcirc \frac{4}{4}$

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

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

### Problem Solving



16. Ben mowed  $\frac{5}{6}$  of his lawn in one hour. John mowed  $\frac{4}{6}$  of his lawn in one hour. Who mowed less of his lawn in one hour?

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17. Darcy baked 8 muffins. She put blueberries in  $\frac{5}{8}$  of the muffins. She put raspberries in  $\frac{3}{8}$  of the muffins. Did more muffins have blueberries or raspberries?

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18. **WRITE** *Math* Explain how you can use reasoning to compare two fractions with the same denominator.

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## Lesson Check (3.NF.A.3d)

1. Julia paints  $\frac{2}{6}$  of a wall in her room white. She paints more of the wall green than white. What fraction could show the part of the wall that is green?
2. Compare. Write  $<$ ,  $>$ , or  $=$ .

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

## Spiral Review (3.OA.A.3, 3.OA.B.5, 3.OA.C.7, 3.NBT.A.3)

3. Mr. Edwards buys 2 new knobs for each of his kitchen cabinets. The kitchen has 9 cabinets. How many knobs does he buy?  

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4. Allie builds a new bookcase with 8 shelves. She can put 30 books on each shelf. How many books can the bookcase hold?  

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5. The Good Morning Café has 28 customers for breakfast. There are 4 people sitting at each table. How many tables are filled?  

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6. Ella wants to use the Commutative Property of Multiplication to help find the product  $5 \times 4$ . What number sentence can she use?  

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Name \_\_\_\_\_

## Compare Fractions with the Same Numerator

**Essential Question** How can you compare fractions with the same numerator?



Number and Operations—  
Fractions—3.NF.A.3d Also 3.NF.A.1

**MATHEMATICAL PRACTICES**  
MP1, MP2, MP4, MP7

### Unlock the Problem



Markos is at Athena's Cafe. He can sit at a table with 5 of his friends or at a different table with 7 of his friends. The same-size spinach pie is shared equally among the people at each table. At which table should Markos sit to get more pie?

#### Model the problem.

There will be 6 friends sharing Pie A or 8 friends sharing Pie B.

So, Markos will get either  $\frac{1}{6}$  or  $\frac{1}{8}$  of a pie.

- Shade  $\frac{1}{6}$  of Pie A.
- Shade  $\frac{1}{8}$  of Pie B.
- Which piece of pie is larger?
- Compare  $\frac{1}{6}$  and  $\frac{1}{8}$ .

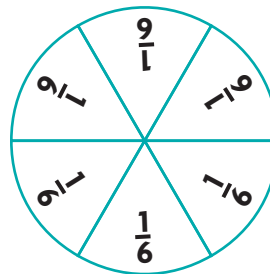
$$\frac{1}{6} \bigcirc \frac{1}{8}$$

So, Markos should sit at the table with \_\_\_\_\_ friends to get more pie.

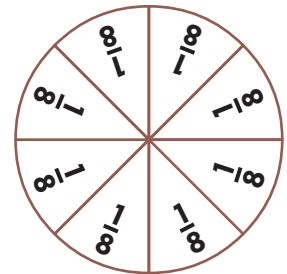
- Including Markos, how many friends will be sharing pie at each table?

- What will you compare?

Pie A



Pie B



#### MATHEMATICAL PRACTICES 1

#### Make Sense of Problems

Suppose Markos wants two pieces of one of the pies above. Is  $\frac{2}{6}$  or  $\frac{2}{8}$  of the pie a greater amount? Explain how you know.

1. Which pie has more pieces? \_\_\_\_\_  
The *more* pieces a whole is divided into, the \_\_\_\_\_ the pieces are.
2. Which pie has fewer pieces? \_\_\_\_\_  
The *fewer* pieces a whole is divided into, the \_\_\_\_\_ the pieces are.

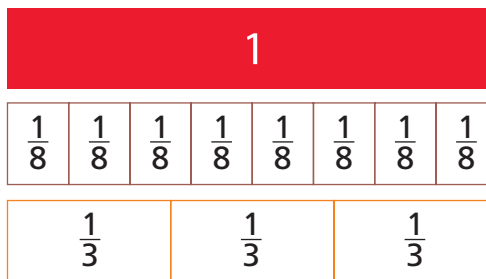


### Use fraction strips.

On Saturday, the campers paddled  $\frac{2}{8}$  of their planned route down the river. On Sunday, they paddled  $\frac{2}{3}$  of their route down the river. On which day did the campers paddle farther?

Compare  $\frac{2}{8}$  and  $\frac{2}{3}$ .

- Place a  $\checkmark$  next to the fraction strips that show more parts in the whole.
- Shade  $\frac{2}{8}$ . Then shade  $\frac{2}{3}$ . Compare the shaded parts.
- $\frac{2}{8}$    $\frac{2}{3}$



Think:  $\frac{1}{8}$  is less than  $\frac{1}{3}$ , so  $\frac{2}{8}$  is less than  $\frac{2}{3}$ .

So, the campers paddled farther on \_\_\_\_\_.

### Use reasoning.

For her class party, Felicia baked two trays of snacks that were the same size. After the party, she had  $\frac{3}{4}$  of the carrot snack and  $\frac{3}{6}$  of the apple snack left over. Was more carrot snack or more apple snack left over?

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

- Since the numerators are the same, look at the denominators to compare the size of the pieces.

$$\frac{3}{4} \text{ } \bullet \text{ } \frac{3}{6}$$

- The *more* pieces a whole is divided into, the \_\_\_\_\_ the pieces are.
- The *fewer* pieces a whole is divided into, the \_\_\_\_\_ the pieces are.

- $\frac{1}{4}$  is \_\_\_\_\_ than  $\frac{1}{6}$  because there are \_\_\_\_\_ pieces.

$$\frac{3}{4} \text{ } \bullet \text{ } \frac{3}{6}$$

So, there was more of the \_\_\_\_\_ snack left over.



#### ERROR Alert

When comparing fractions with the same numerator, be sure the symbol shows that the fraction with fewer pieces in the whole is the greater fraction.



Name \_\_\_\_\_

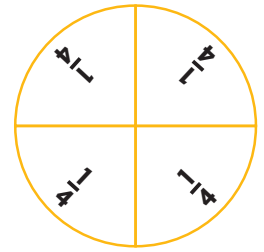
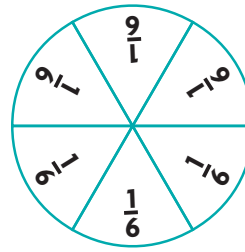
## Share and Show



1. Shade the models to show  $\frac{1}{6}$  and  $\frac{1}{4}$ .

Then compare the fractions.

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



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

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

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

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

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

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

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

**Math Talk**

### MATHEMATICAL PRACTICES 1

**Evaluate** Why is  $\frac{1}{2}$  greater than  $\frac{1}{4}$ ?

## On Your Own

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

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

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

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

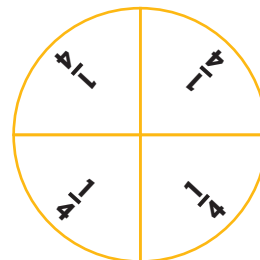
11.  $\frac{6}{8} \bigcirc \frac{6}{6}$

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

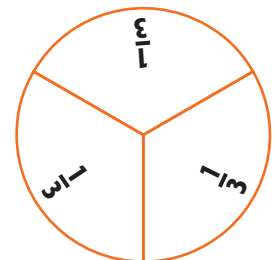
13.  $\frac{7}{8} \bigcirc \frac{7}{8}$

14. **GO DEEPER** James ate  $\frac{3}{4}$  of his quesadilla. David ate  $\frac{2}{3}$  of his quesadilla. Both are the same size. Who ate more of his quesadilla?

James said he knows he ate more because he looked at the amounts left. Does his answer make sense? Shade the models. Explain.



James



David

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# Unlock the Problem

15. **MATHEMATICAL PRACTICE 1** **Make Sense of Problems** Quinton and Hunter are biking on trails in Katy Trail State Park. They biked  $\frac{5}{6}$  mile in the morning and  $\frac{5}{8}$  mile in the afternoon. Did they bike a greater distance in the morning or in the afternoon?



- a. What do you need to know? \_\_\_\_\_
- b. The numerator is 5 in both fractions, so compare  $\frac{1}{6}$  and  $\frac{1}{8}$ . Explain.  
\_\_\_\_\_
- c. How can you solve the problem?

- d. Complete the sentences.

In the morning, the boys biked

\_\_\_\_\_ mile. In the afternoon, they biked \_\_\_\_\_ mile.

So, the boys biked a greater distance in the \_\_\_\_\_  $\frac{5}{6}$    $\frac{5}{8}$

16. **THINK SMARTER** Zach has a piece of pie that is  $\frac{1}{4}$  of a pie. Max has a piece of pie that is  $\frac{1}{2}$  of a pie. Max's piece is smaller than Zach's piece. Explain how this could happen. Draw a picture to show your answer.



## Personal Math Trainer

17. **THINK SMARTER +** Before taking a hike, Kate and Dylan each ate part of their same-size granola bars. Kate ate  $\frac{1}{3}$  of her bar. Dylan ate  $\frac{1}{2}$  of his bar. Who ate more of the granola bar? Explain how you solved the problem.

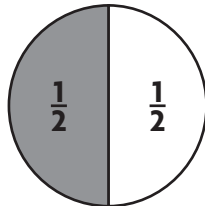
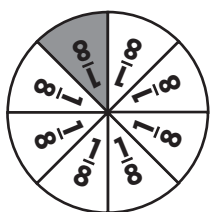
Name \_\_\_\_\_

## Compare Fractions with the Same Numerator


**COMMON CORE STANDARD—3.NF.A.3d**  
 Develop understanding of fractions as numbers.

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

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



2.  $\frac{3}{8} \circ \frac{3}{6}$

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

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

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

6.  $\frac{1}{2} \circ \frac{1}{6}$

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

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

9.  $\frac{6}{8} \circ \frac{6}{6}$

### Problem Solving



10. Javier is buying food in the lunch line.

The tray of salad plates is  $\frac{3}{8}$  full.The tray of fruit plates is  $\frac{3}{4}$  full.

Which tray is more full?

\_\_\_\_\_

11. Rachel bought some buttons.

Of the buttons,  $\frac{2}{4}$  are yellow and $\frac{2}{8}$  are red. Rachel bought more of which color buttons?

\_\_\_\_\_

- 12.
- WRITE**
- Math*
- Explain how the number of pieces in a whole relates to the size of each piece.

\_\_\_\_\_

\_\_\_\_\_

## Lesson Check (3.NF.A.3d)

1. What symbol makes the statement true? Write  $<$ ,  $>$ , or  $=$ .
2. What symbol makes the statement true? Write  $<$ ,  $>$ , or  $=$ .

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

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

## Spiral Review (3.OA.C.7, 3.NF.A.1)

3. Anita divided a circle into 6 equal parts and shaded 1 of the parts. What fraction names the part she shaded?
4. What fraction names the shaded part of the rectangle?



5. Chip worked at the animal shelter for 6 hours each week for several weeks. He worked for a total of 42 hours. How many weeks did Chip work at the animal shelter?
6. Mr. Jackson has 20 quarters. If he gives 4 quarters to each of his children, how many children does Mr. Jackson have?



Name \_\_\_\_\_

# Compare Fractions

**Essential Question** What strategies can you use to compare fractions?



**Number and Operations—Fractions—3.NF.A.3d** Also 3.NF.A.1, 3.NF.A.3

**MATHEMATICAL PRACTICES**  
MP1, MP2, MP4, MP6

## Unlock the Problem

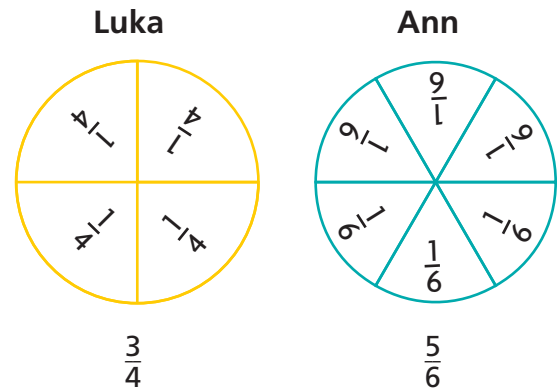
Luka and Ann are eating the same-size small pizzas. One plate has  $\frac{3}{4}$  of Luka's cheese pizza. Another plate has  $\frac{5}{6}$  of Ann's mushroom pizza. Whose plate has more pizza?

- Circle the numbers you need to compare.
  - How many pieces make up each whole pizza?
- 

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

### Missing Pieces Strategy

- You can compare fractions by comparing pieces missing from a whole.
- Shade  $\frac{3}{4}$  of Luka's pizza and  $\frac{5}{6}$  of Ann's pizza. Each fraction represents a whole that is missing one piece.
- Since  $\frac{1}{6} < \frac{1}{4}$ , a smaller piece is missing from Ann's pizza.
- If a smaller piece is missing from Ann's pizza, she must have more pizza.



**Math Talk** **MATHEMATICAL PRACTICES 2**  
**Reason Abstractly** How does knowing that  $\frac{1}{4}$  is less than  $\frac{1}{3}$  help you compare  $\frac{3}{4}$  and  $\frac{2}{3}$ ?

So, \_\_\_\_\_ plate has more pizza.

Morgan ran  $\frac{2}{3}$  mile. Alexa ran  $\frac{1}{3}$  mile.  
Who ran farther?

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

$$\frac{\square}{3} > \frac{\square}{3}$$

### Same Denominator Strategy

- When the denominators are the same, you can compare only the number of pieces, or the numerators.

So, \_\_\_\_\_ ran farther.

Ms. Davis is making a fruit salad with  $\frac{3}{4}$  pound of cherries and  $\frac{3}{8}$  pound of strawberries. Which weighs less, the cherries or the strawberries?



**Key** Compare  $\frac{3}{4}$  and  $\frac{3}{8}$ .

**Same Numerator Strategy**

- When the numerators are the same, look at the denominators to compare the size of the pieces.

**Think:**  $\frac{1}{8}$  is smaller than  $\frac{1}{4}$  because there are more pieces.

$$\frac{3}{\square} < \frac{3}{\square}$$

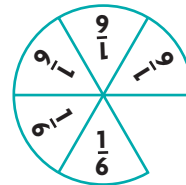
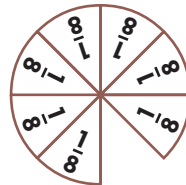
So, the \_\_\_\_\_ weigh less.

**Share and Show**



1. Compare  $\frac{7}{8}$  and  $\frac{5}{6}$ .

**Think:** What is missing from each whole?



Write  $<$ ,  $>$ , or  $=$ .  $\frac{7}{8} \bigcirc \frac{5}{6}$

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

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

---

**Key** 3.  $\frac{3}{4} \bigcirc \frac{2}{4}$

---

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

---

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

---



**MATHEMATICAL PRACTICES 1**

**Make Sense of Problems**  
How do the missing pieces in Exercise 1 help you compare  $\frac{7}{8}$  and  $\frac{5}{6}$ ?



Name \_\_\_\_\_

## On Your Own

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

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

Name a fraction that is less than or greater than the given fraction. Draw to justify your answer.

10. less than  $\frac{5}{6}$  \_\_\_\_\_

11. greater than  $\frac{3}{8}$  \_\_\_\_\_

12. **GO DEEPER** Luke, Seth, and Anja have empty glasses. Mr. Gabel pours  $\frac{3}{6}$  cup of orange juice in Seth's glass. Then he pours  $\frac{1}{6}$  cup of orange juice in Luke's glass and  $\frac{2}{6}$  cup of orange juice in Anja's glass. Who gets the most orange juice?
- \_\_\_\_\_

13. **THINK SMARTER** **What's the Error?** Jack says that  $\frac{5}{8}$  is greater than  $\frac{5}{6}$  because the denominator 8 is greater than the denominator 6. Describe Jack's error. Draw a picture to explain your answer.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



## Unlock the Problem

14. **MATHEMATICAL PRACTICE 1 Analyze** Tracy is making blueberry muffins. She is using  $\frac{4}{4}$  cup of honey and  $\frac{4}{2}$  cups of flour. Does Tracy use more honey or more flour?

a. What do you need to know?

---

b. What strategy will you use to compare the fractions?

---

c. Show the steps you used to solve the problem.

d. Complete the comparison.

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

So, Tracy uses more \_\_\_\_\_.



15. **THINK SMARTER** Compare the fractions. Circle a symbol that makes the statement true.

$$\frac{2}{8} \begin{cases} > \\ < \\ = \end{cases} \frac{2}{4}$$

$$\frac{1}{4} \begin{cases} > \\ < \\ = \end{cases} \frac{4}{8}$$

Name \_\_\_\_\_

## Compare Fractions



**COMMON CORE STANDARD—3.NF.A.3d**  
Develop an understanding of fractions as numbers.

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

1.  $\frac{3}{8} \text{ } \textcircled{<} \text{ } \frac{3}{4}$

**Think:** The numerators are the same. Compare the denominators. The greater fraction will have the lesser denominator.

same numerator

2.  $\frac{2}{3} \text{ } \textcircled{\quad} \text{ } \frac{7}{8}$

\_\_\_\_\_

3.  $\frac{3}{4} \text{ } \textcircled{\quad} \text{ } \frac{1}{4}$

\_\_\_\_\_

Name a fraction that is less than or greater than the given fraction. Draw to justify your answer.

4. greater than  $\frac{1}{3}$  —

5. less than  $\frac{3}{4}$  —

### Problem Solving



6. At the third-grade party, two groups each had their own pizza. The blue group ate  $\frac{7}{8}$  pizza. The green group ate  $\frac{2}{8}$  pizza. Which group ate more of their pizza?

\_\_\_\_\_

7. Ben and Antonio both take the same bus to school. Ben's ride is  $\frac{7}{8}$  mile. Antonio's ride is  $\frac{3}{4}$  mile. Who has a longer bus ride?

\_\_\_\_\_

8. **WRITE** *Math* Explain how to use the missing pieces strategy to compare two fractions. Include a diagram with your explanation.

\_\_\_\_\_

## Lesson Check (3.NF.A.3d)

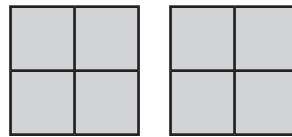
1. Compare  $\frac{2}{3}$  and  $\frac{7}{8}$ . Write  $<$ ,  $>$ , or  $=$ .
2. What symbol makes the statement true? Write  $<$ ,  $>$ , or  $=$ .

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

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

## Spiral Review (3.OA.A.4, 3.NBT.A.3, 3.NF.A.3c)

3. Cam, Stella, and Rose each picked 40 apples. They put all their apples in one crate. How many apples are in the crate?
4. Each shape is 1 whole. What fraction is represented by the shaded part of the model?



- \_\_\_\_\_
5. What related multiplication fact can you use to find  $16 \div \blacksquare = 2$ ?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- \_\_\_\_\_
6. What is the unknown factor?

$$9 \times \blacksquare = 36$$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_


**Mid-Chapter Checkpoint**
**Personal Math Trainer**Online Assessment  
and Intervention
**Concepts and Skills**

1. When two fractions refer to the same whole, explain why the fraction with a lesser denominator has larger pieces than the fraction with a greater denominator. (3.NF.A.3d)

---



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---

2. When two fractions refer to the same whole and have the same denominators, explain why you can compare only the numerators. (3.NF.A.3d)

---



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**Compare. Write  $<$ ,  $>$ , or  $=$ .** (3.NF.A.3d)

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

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

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

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

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

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

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

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

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

**Name a fraction that is less than or greater than the given fraction. Draw to justify your answer.** (3.NF.A.3d)

12. greater than  $\frac{2}{6}$  \_\_\_\_\_

13. less than  $\frac{2}{3}$  \_\_\_\_\_

14. Two walls in Tiffany's room are the same size. Tiffany paints  $\frac{1}{4}$  of one wall. Roberto paints  $\frac{1}{8}$  of the other wall. Who painted a greater amount in Tiffany's room? (3.NF.A.3d)
- 

15. Matthew ran  $\frac{5}{8}$  mile during track practice. Pablo ran  $\frac{5}{6}$  mile. Write a fraction that shows who ran farther. (3.NF.A.3d)
- 

16. Mallory bought 6 roses for her mother. Two-sixths of the roses are red and  $\frac{4}{6}$  are yellow. Write a fraction that correctly compares the amounts. (3.NF.A.3d)
- 

17. **GO DEEPER** Lani used  $\frac{2}{3}$  cup of raisins,  $\frac{3}{8}$  cup of cranberries, and  $\frac{3}{4}$  cup of oatmeal to bake cookies. Which ingredient did Lani use the least amount of? (3.NF.A.3d)
-



Name \_\_\_\_\_

## Compare and Order Fractions

**Essential Question** How can you compare and order fractions?



Number and Operations—  
Fractions—3.NF.A.3d Also 3.NF.A.1

**MATHEMATICAL PRACTICES**  
MP3, MP4, MP5, MP6



### Unlock the Problem



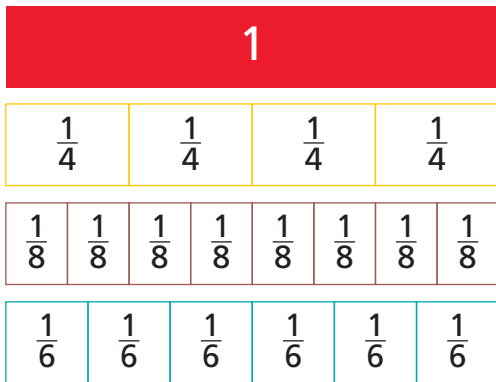
Sierra, Tad, and Dale ride their bikes to school. Sierra rides  $\frac{3}{4}$  mile, Tad rides  $\frac{3}{8}$  mile, and Dale rides  $\frac{3}{6}$  mile. Compare and order the distances from least to greatest.

- Circle the fractions you need to use.
- Underline the sentence that tells you what you need to do.

### **Activity 1** Order fractions with the same numerator.

**Materials** ■ color pencil

You can order fractions by reasoning about the size of unit fractions.



### Remember

- The *more* pieces a whole is divided into, the smaller the pieces are.
- The *fewer* pieces a whole is divided into, the larger the pieces are.

**STEP 1** Shade one unit fraction for each fraction strip.

\_\_\_\_\_ is the longest unit fraction.

\_\_\_\_\_ is the shortest unit fraction.

**STEP 2** Shade one more unit fraction for each fraction strip.

Are the shaded fourths still the longest? \_\_\_\_\_

Are the shaded eighths still the shortest? \_\_\_\_\_

**STEP 3** Continue shading the fraction strips so that three unit fractions are shaded for each strip.

Are the shaded fourths still the longest? \_\_\_\_\_

Are the shaded eighths still the shortest? \_\_\_\_\_

$\frac{3}{4}$  mile is the \_\_\_\_\_ distance.  $\frac{3}{8}$  mile is the \_\_\_\_\_ distance.  $\frac{3}{6}$  mile is *between* the other two distances.

So, the distances in order from least to greatest are

\_\_\_\_\_ mile, \_\_\_\_\_ mile, \_\_\_\_\_ mile.

**Try This!** Order  $\frac{2}{6}$ ,  $\frac{2}{3}$ , and  $\frac{2}{4}$  from greatest to least.

Order the fractions  $\frac{2}{6}$ ,  $\frac{2}{3}$ , and  $\frac{2}{4}$  by thinking about the length of the unit fraction strip. Then label the fractions *shortest*, *between*, or *longest*.

Fraction	Unit Fraction	Length
$\frac{2}{6}$		
$\frac{2}{3}$		
$\frac{2}{4}$		



**MATHEMATICAL PRACTICES 8**

**Generalize** When ordering three fractions, what do you know about the third fraction when you know which fraction is the shortest and which fraction is the longest? Explain your answer.

- When the numerators are the same, think about the \_\_\_\_\_ of the pieces to compare and order fractions.

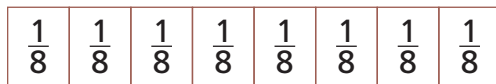
So, the order from greatest to least is \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.



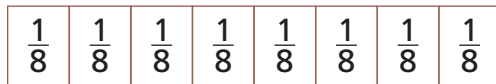
**Activity 2** Order fractions with the same denominator.

**Materials** ■ color pencil

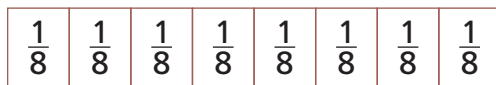
Shade fraction strips to order  $\frac{5}{8}$ ,  $\frac{8}{8}$ , and  $\frac{3}{8}$  from least to greatest.



Shade  $\frac{5}{8}$ .



Shade  $\frac{8}{8}$ .



Shade  $\frac{3}{8}$ .

- When the denominators are the same, the size of the pieces is the \_\_\_\_\_.

So, think about the \_\_\_\_\_ of pieces to compare and order fractions.

\_\_\_\_\_ is the shortest. \_\_\_\_\_ is the longest.

\_\_\_\_\_ is between the other two fractions.

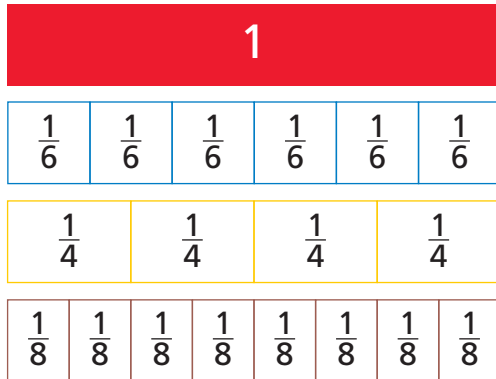
So, the order from least to greatest is \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

Name \_\_\_\_\_

## Share and Show



1. Shade the fraction strips to order  $\frac{4}{6}$ ,  $\frac{4}{4}$ , and  $\frac{4}{8}$  from least to greatest.



**Math Talk**

### MATHEMATICAL PRACTICES 5

**Use a Concrete Model** Why does using fraction strips help you order fractions with unlike denominators?

\_\_\_\_\_ is the shortest. \_\_\_\_\_ is the longest.  
 \_\_\_\_\_ is between the other two lengths. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Write the fractions in order from least to greatest.

2.  $\frac{1}{2}, \frac{0}{2}, \frac{2}{2}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
3.  $\frac{1}{6}, \frac{1}{2}, \frac{1}{3}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

## On Your Own

Write the fractions in order from greatest to least.

4.  $\frac{6}{6}, \frac{2}{6}, \frac{5}{6}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
5.  $\frac{1}{8}, \frac{1}{4}, \frac{1}{2}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Write the fractions in order from least to greatest.

6. **THINK SMARTER**  
 $\frac{6}{3}, \frac{6}{2}, \frac{6}{8}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
7. **THINK SMARTER**  
 $\frac{4}{2}, \frac{2}{2}, \frac{8}{2}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

8. **MATHEMATICAL PRACTICE 6 Compare** Pam is making biscuits. She needs  $\frac{2}{6}$  cup of oil,  $\frac{2}{3}$  cup of water, and  $\frac{2}{4}$  cup of milk. Write the ingredients from greatest to least amount.

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

## Problem Solving • Applications



9. In fifteen minutes, Greg's sailboat went  $\frac{3}{6}$  mile, Gina's sailboat went  $\frac{6}{6}$  mile, and Stuart's sailboat went  $\frac{4}{6}$  mile. Whose sailboat went the longest distance in fifteen minutes?

---

Whose sailboat went the shortest distance?

---

10. **GO DEEPER** Look back at Problem 9. Write a similar problem by changing the fraction of a mile each sailboat traveled, so the answers are different from Problem 9. Then solve the problem.

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11. **THINK SMARTER** Tom has three pieces of wood. The length of the longest piece is  $\frac{3}{4}$  foot. The length of the shortest piece is  $\frac{3}{8}$  foot. What might be the length of the third piece of wood?

---

12. **THINK SMARTER** Jesse ran  $\frac{2}{4}$  mile on Monday,  $\frac{2}{3}$  mile on Tuesday, and  $\frac{2}{8}$  mile on Wednesday. Order the fractions from least to greatest.

$\frac{2}{4}$  ,  $\frac{2}{3}$  and  $\frac{2}{8}$    



**WRITE** *Math* • Show Your Work • • • • •



Name \_\_\_\_\_

## Compare and Order Fractions



COMMON CORE STANDARD—3.NF.A.3d  
Develop understanding of fractions as numbers.

Write the fractions in order from greatest to least.

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

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

**Think:** The denominators are the same, so compare the numerators:  $4 > 3 > 1$ .

3.  $\frac{1}{3}, \frac{1}{6}, \frac{1}{2}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

4.  $\frac{2}{3}, \frac{2}{6}, \frac{2}{8}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Write the fractions in order from least to greatest.

5.  $\frac{2}{4}, \frac{4}{4}, \frac{3}{4}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

6.  $\frac{4}{6}, \frac{5}{6}, \frac{2}{6}$  \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

### Problem Solving



7. Mr. Jackson ran  $\frac{7}{8}$  mile on Monday. He ran  $\frac{3}{8}$  mile on Wednesday and  $\frac{5}{8}$  mile on Friday. On which day did Mr. Jackson run the shortest distance?

8. Delia has three pieces of ribbon. Her red ribbon is  $\frac{2}{4}$  foot long. Her green ribbon is  $\frac{2}{3}$  foot long. Her yellow ribbon is  $\frac{2}{6}$  foot long. She wants to use the longest piece for a project. Which color ribbon should Delia use?

\_\_\_\_\_

9. **WRITE** *Math* Describe how fraction strip can help you order fractions.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Lesson Check (3.NF.A.3d)

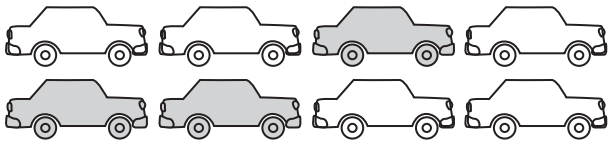
- Write the fractions in order from least to greatest.
- Write the fractions in order from greatest to least.

$$\frac{1}{8}, \frac{1}{3}, \frac{1}{6}$$

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

## Spiral Review (3.OA.B.5, 3.NF.A.1, 3.MD.B.3)

- What fraction of the group of cars is shaded?
- Wendy has 6 pieces of fruit. Of these, 2 pieces are bananas. What fraction of Wendy's fruit is bananas?



- Toby collects data and makes a bar graph about his classmates' pets. He finds that 9 classmates have dogs, 2 classmates have fish, 6 classmates have cats, and 3 classmates have gerbils. What pet will have the longest bar on the bar graph?
- The number sentence is an example of which multiplication property?  
$$6 \times 7 = (6 \times 5) + (6 \times 2)$$



Name \_\_\_\_\_

## Model Equivalent Fractions

**Essential Question** How can you use models to find equivalent fractions?

Common Core

**Number and Operations—Fractions—3.NF.A.3a** Also 3.NF.A.1, 3.NF.A.2a, 3.NF.A.2b, 3.NF.A.3, 3.NF.A.3b, 3.NF.A.3c, 3.G.A.2

**MATHEMATICAL PRACTICES**  
MP4, MP5, MP7

### Investigate



**Materials** ■ sheet of paper ■ crayon or color pencil

Two or more fractions that name the same amount are called **equivalent fractions**. You can use a sheet of paper to model fractions equivalent to  $\frac{1}{2}$ .

- A.** First, fold a sheet of paper into two equal parts. Open the paper and count the parts.

There are \_\_\_\_\_ equal parts. Each part is \_\_\_\_\_ of the paper.

Shade one of the halves. Write  $\frac{1}{2}$  on each of the halves.

- B.** Next, fold the paper in half two times. Open the paper.

Now there are \_\_\_\_\_ equal parts. Each part is \_\_\_\_\_ of the paper.

Write  $\frac{1}{4}$  on each of the fourths.

Look at the shaded parts.  $\frac{1}{2} = \frac{\square}{4}$

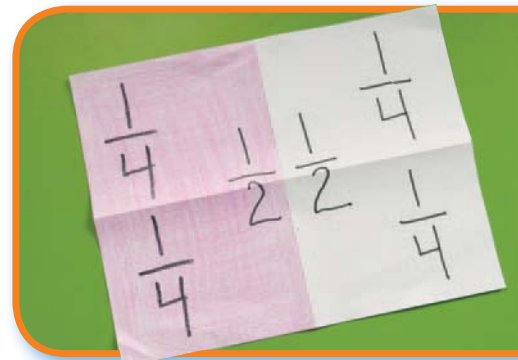
- C.** Last, fold the paper in half three times.

Now there are \_\_\_\_\_ equal parts. Each part is \_\_\_\_\_ of the paper.

Write  $\frac{1}{8}$  on each of the eighths.

Find the fractions equivalent to  $\frac{1}{2}$  on your paper.

So,  $\frac{1}{2}$ ,  $\frac{\square}{\square}$ , and  $\frac{\square}{\square}$  are equivalent.



## Draw Conclusions

1. Explain how many  $\frac{1}{8}$  parts are equivalent to one  $\frac{1}{4}$  part on your paper.

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2. **THINK SMARTER** What do you notice about how the numerators changed for the shaded part as you folded the paper? \_\_\_\_\_

What does this tell you about the change in the number of parts? \_\_\_\_\_

How did the denominators change for the shaded part as you folded? \_\_\_\_\_

What does this tell you about the change in the size of the parts? \_\_\_\_\_

### Math Idea

Two or more numbers that have the same value or name the same amount are *equivalent*.

## Make Connections

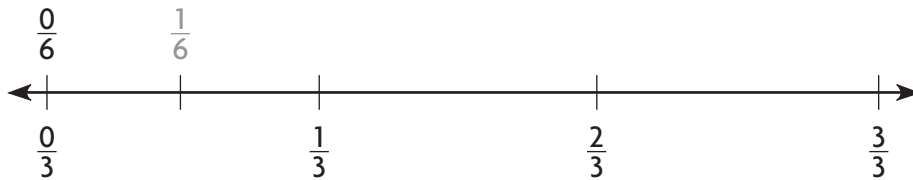


### MATHEMATICAL PRACTICES 2

You can use a number line to find equivalent fractions.

Find a fraction equivalent to  $\frac{2}{3}$ .

**Materials** ■ fraction strips



**STEP 1** Draw a point on the number line to represent the distance  $\frac{2}{3}$ .

**STEP 2** Use fraction strips to divide the number line into sixths. At the end of each strip, draw a mark on the number line and label the marks to show sixths.

**STEP 3** Identify the fraction that names the same point as  $\frac{2}{3}$ . \_\_\_\_\_

So,  $\frac{2}{3} = \frac{\square}{6}$ .

Name \_\_\_\_\_

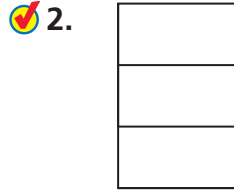
## Share and Show



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

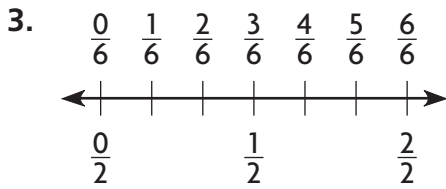


$$\frac{1}{4} = \frac{\square}{8}$$



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

Use the number line to find the equivalent fraction.



$$\frac{1}{2} = \frac{\square}{6}$$



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

## Problem Solving • Applications



5. **MATHEMATICAL PRACTICE 6** Explain why  $\frac{2}{2} = 1$ .  
Write another fraction that is equal to 1. Draw to justify your answer.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



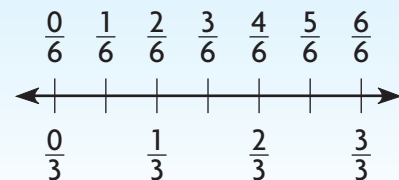
6. **THINK SMARTER +** For numbers 6a–6d, select True or False to tell whether the fractions are equivalent.

6a.  $\frac{6}{6}$  and  $\frac{3}{3}$        True       False

6b.  $\frac{4}{6}$  and  $\frac{1}{3}$        True       False

6c.  $\frac{2}{3}$  and  $\frac{3}{6}$        True       False

6d.  $\frac{1}{3}$  and  $\frac{2}{6}$        True       False



### Personal Math Trainer

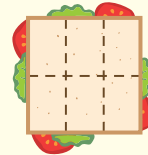
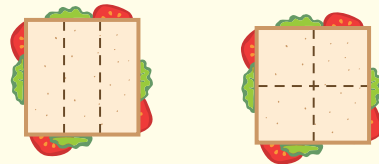


**Summarize**

You can *summarize* the information in a problem by underlining it or writing the information needed to answer a question.

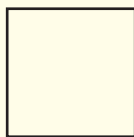
Read the problem. Underline the important information.

7. **THINK SMARTER** Mrs. Akers bought three sandwiches that were the same size. She cut the first one into thirds. She cut the second one into fourths and the third one into sixths. Marian ate 2 pieces of the first sandwich. Jason ate 2 pieces of the second sandwich. Marcos ate 3 pieces of the third sandwich. Which children ate the same amount of a sandwich? Explain.



The first sandwich was cut into \_\_\_\_\_.

Marian ate \_\_\_\_\_ pieces of the sandwich. Shade the part Marian ate.



Marian ate  $\frac{\square}{\square}$  of the first sandwich.

The second sandwich was cut into \_\_\_\_\_.

Jason ate \_\_\_\_\_ pieces of the sandwich. Shade the part Jason ate.



Jason ate  $\frac{\square}{\square}$  of the second sandwich.

The third sandwich was cut into \_\_\_\_\_.

Marcos ate \_\_\_\_\_ pieces of the sandwich. Shade the part Marcos ate.



Marcos ate  $\frac{\square}{\square}$  of the third sandwich.

Are all the fractions equivalent? \_\_\_\_\_

Which fractions are equivalent?  $\frac{\square}{\square} = \frac{\square}{\square}$

So, \_\_\_\_\_ and \_\_\_\_\_ ate the same amount of a sandwich.

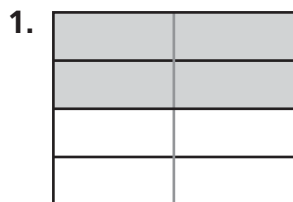
Name \_\_\_\_\_

## Model Equivalent Fractions



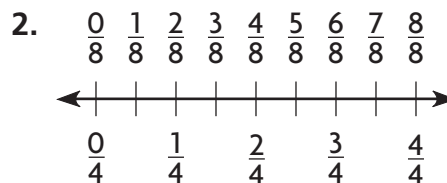
COMMON CORE STANDARD—3.NF.A.3a  
Develop understanding of fractions as numbers.

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



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

Use the number line to find the equivalent fraction.



$$\frac{3}{4} = \frac{\boxed{\phantom{000}}}{8}$$

### Problem Solving



- Mike says that  $\frac{3}{3}$  of his fraction model is shaded blue. Ryan says that  $\frac{6}{6}$  of the same model is shaded blue. Are the two fractions equivalent? If so, what is another equivalent fraction?
- Brett shaded  $\frac{4}{8}$  of a sheet of notebook paper. Aisha says he shaded  $\frac{1}{2}$  of the paper. Are the two fractions equivalent? If so, what is another equivalent fraction?

\_\_\_\_\_

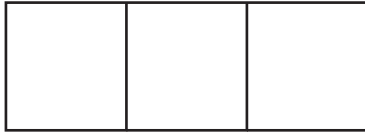
\_\_\_\_\_

5. **WRITE** *Math* Draw a number line that shows two equivalent fractions. Label your number line and explain how you know the fractions are equivalent.

\_\_\_\_\_

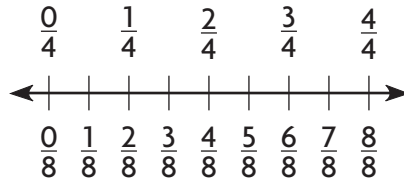
## Lesson Check (3.NF.A.3b)

1. Name a fraction equivalent to  $\frac{2}{3}$ .



\_\_\_\_\_

2. Find the fraction equivalent to  $\frac{1}{4}$ .



\_\_\_\_\_

## Spiral Review (3.OA.A.3, 3.OA.C.7, 3.NF.A.1)

3. Eric practiced piano and guitar for a total of 8 hours this week. He practiced the piano for  $\frac{1}{4}$  of that time. How many hours did Eric practice the piano this week?

\_\_\_\_\_

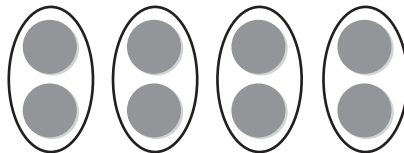
4. Kylee bought a pack of 12 cookies. One-third of the cookies are peanut butter. How many of the cookies in the pack are peanut butter?

\_\_\_\_\_

5. There are 56 students going to the game. The coach puts 7 students in each van. How many vans are needed to take the students to the game?

\_\_\_\_\_  
\_\_\_\_\_

6. Write a division equation for the picture.



\_\_\_\_\_  
\_\_\_\_\_



Name \_\_\_\_\_

## Equivalent Fractions

**Essential Question** How can you use models to name equivalent fractions?



**Number and Operations—Fractions—3.NF.A.3b** Also 3.NF.A.1, 3.NF.A.3, 3.NF.A.3a, 3.G.A.2

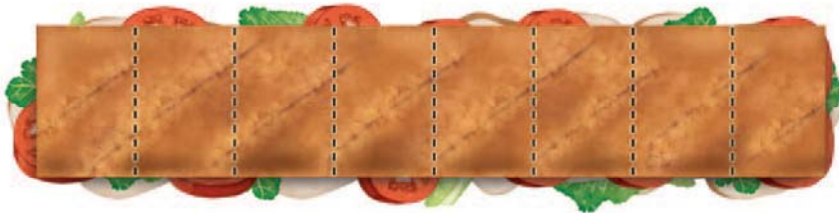
**MATHEMATICAL PRACTICES**  
MP1, MP3, MP4, MP8

### Unlock the Problem Real World

Cole brought a submarine sandwich to the picnic. He shared the sandwich equally with 3 friends. The sandwich was cut into eighths. What are two ways to describe the part of the sandwich each friend ate?

- How many people shared the sandwich?

Cole grouped the smaller pieces into twos. Draw circles to show equal groups of two pieces to show what each friend ate.



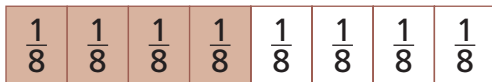
There are 4 equal groups. Each group is  $\frac{1}{4}$  of the whole sandwich. So, each friend ate  $\frac{1}{4}$  of the whole sandwich.

How many eighths did each friend eat? \_\_\_\_\_

$\frac{1}{4}$  and \_\_\_\_\_ are equivalent fractions since they both name the \_\_\_\_\_ amount of the sandwich.

So,  $\frac{1}{4}$  and \_\_\_\_\_ of the sandwich are two ways to describe the part of the sandwich each friend ate.

**Try This!** Circle equal groups. Write an equivalent fraction for the shaded part of the whole.



$\frac{4}{8} =$  \_\_\_\_\_

**Math Talk**

**MATHEMATICAL PRACTICES 3**

**Apply** What is a different way you could have circled the equal groups?





### Example Model the problem.

Heidi ate  $\frac{3}{6}$  of her fruit bar. Molly ate  $\frac{4}{8}$  of her fruit bar, which is the same size. Which girl ate more of her fruit bar?

Shade  $\frac{3}{6}$  of Heidi's fruit bar and  $\frac{4}{8}$  of Molly's fruit bar.

• Is  $\frac{3}{6}$  greater than, less than, or equal to  $\frac{4}{8}$ ? \_\_\_\_\_

So, both girls ate the \_\_\_\_\_ amount.

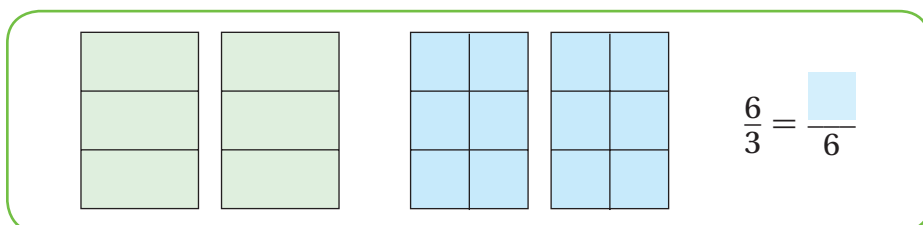
Heidi

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Molly

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

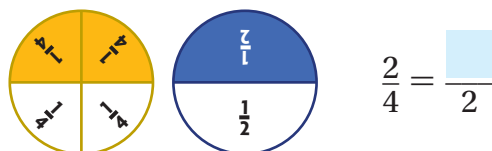
**Try This!** Each shape is 1 whole. Write an equivalent fraction for the shaded part of the models.



### Share and Show



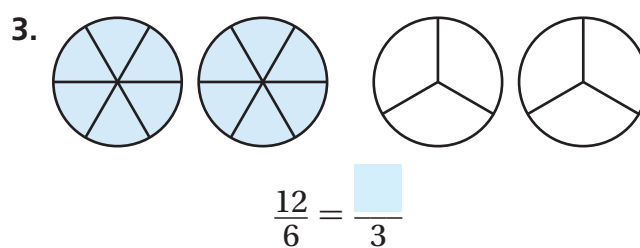
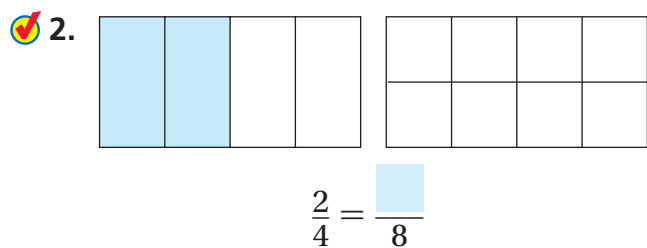
1. Each shape is 1 whole. Use the model to find the equivalent fraction.



### MATHEMATICAL PRACTICES 2

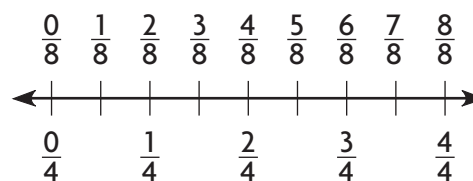
**Use Reasoning** Explain why equivalent fractions name the same amount.

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



4. Andy swam  $\frac{8}{8}$  mile in a race. Use the number line to find a fraction that is equivalent to  $\frac{8}{8}$ .

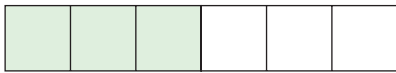
$$\frac{8}{8} = \frac{\quad}{\quad}$$



Name \_\_\_\_\_

**Circle equal groups to find the equivalent fraction.**

5.



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

6.

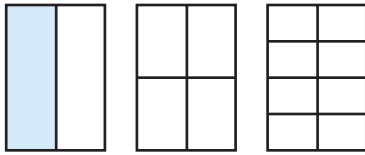


$$\frac{6}{6} = \frac{\square}{3}$$

**On Your Own**

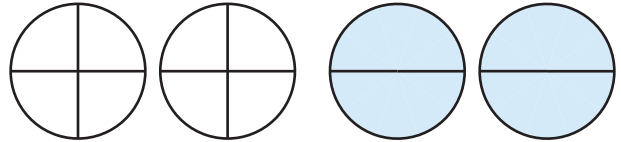
**Each shape is 1 whole. Shade the model to find the equivalent fraction.**

7.



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

8.



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

**Circle equal groups to find the equivalent fraction.**

9.



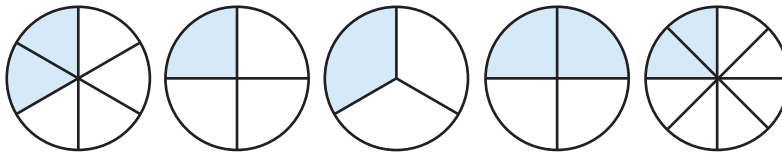
$$\frac{6}{8} = \frac{\square}{4}$$

10.



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

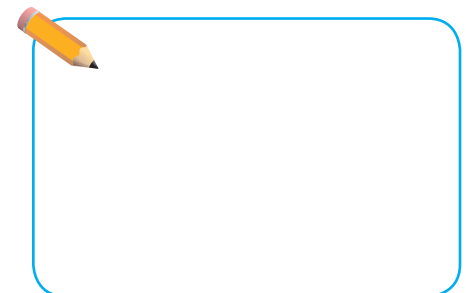
11. Write the fraction that names the shaded part of each circle.



\_\_\_\_\_

Which pairs of fractions are equivalent? \_\_\_\_\_

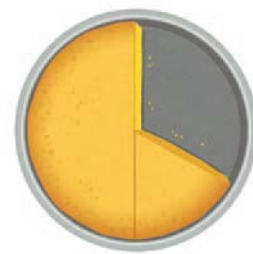
12. **MATHEMATICAL PRACTICE** **Apply** Matt cut his small pizza into 6 equal pieces and ate 4 of them. Josh cut his small pizza, which is the same size, into 3 equal pieces and ate 2 of them. Write fractions for the amount they each ate. Are the fractions equivalent? Draw to explain.



## Problem Solving • Applications

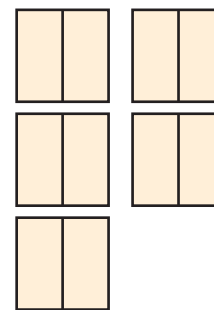
13. **GO DEEPER** Christy bought 8 muffins. She chose 2 apple, 2 banana, and 4 blueberry. She and her family ate the apple and banana muffins for breakfast. What fraction of the muffins did they eat? Write an equivalent fraction. Draw a picture.
- 

14. **THINK SMARTER** After dinner,  $\frac{2}{3}$  of the corn bread is left. Suppose 4 friends want to share it equally. What fraction names how much of the whole pan of corn bread each friend will get? Use the model on the right. Explain your answer.
- 
- 



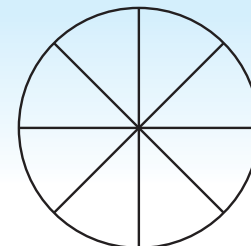
15. There are 16 people having lunch. Each person wants  $\frac{1}{4}$  of a pizza. How many whole pizzas are needed? Draw a picture to show your answer.
- 

16. Lucy has 5 oatmeal bars, each cut in half. What fraction names all of the oatmeal bar halves?  $\frac{\square}{2}$
- What if Lucy cuts each part of the oatmeal bar into 2 equal pieces to share with friends? What fraction names all of the oatmeal bar pieces now?  $\frac{\square}{4}$
- $\frac{\square}{2}$  and  $\frac{\square}{4}$  are equivalent fractions.



17. **THINK SMARTER** Mr. Peters made a pizza. There is  $\frac{4}{8}$  of the pizza left over. Select the fraction that are equivalent to the part of the pizza that is left over. Mark all that apply.

- A**  $\frac{5}{8}$       **B**  $\frac{3}{4}$       **C**  $\frac{2}{4}$       **D**  $\frac{1}{2}$



Name \_\_\_\_\_

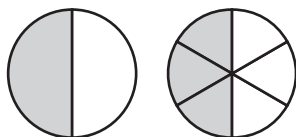
## Equivalent Fractions



COMMON CORE STANDARD—3.NF.A.3b  
Develop understanding of fractions as numbers.

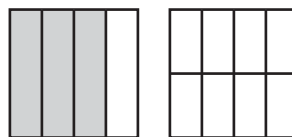
Each shape is 1 whole. Shade the model to find the equivalent fraction.

1.



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

2.



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

Circle equal groups to find the equivalent fraction.

3.



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

4.



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

### Problem Solving



5. May painted 4 out of 8 equal parts of a poster board blue. Jared painted 2 out of 4 equal parts of a same-size poster board red. Write fractions to show which part of the poster board each person painted.

6. **WRITE** *Math* Explain how you can find a fraction that is equivalent to  $\frac{1}{4}$ .

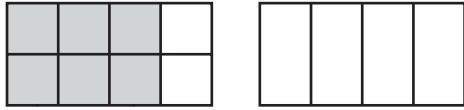
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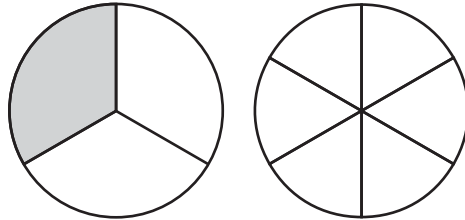
## Lesson Check (3.NF.A.3b)

1. What fraction is equivalent to  $\frac{6}{8}$ ?



\_\_\_\_\_

2. What fraction is equivalent to  $\frac{1}{3}$ ?



\_\_\_\_\_

## Spiral Review (3.OA.B.5, 3.OA.B.6, 3.OA.C.7)

3. What division number sentence is shown by the array?



\_\_\_\_\_  
\_\_\_\_\_

4. Cody put 4 plates on the table. He put 1 apple on each plate. What number sentence can be used to find the total number of apples on the table?

\_\_\_\_\_  
\_\_\_\_\_

5. Write a division number sentence that is a related fact to  $7 \times 3 = 21$ .

\_\_\_\_\_  
\_\_\_\_\_

6. Find the quotient.

$$4 \overline{)36}$$

\_\_\_\_\_  
\_\_\_\_\_