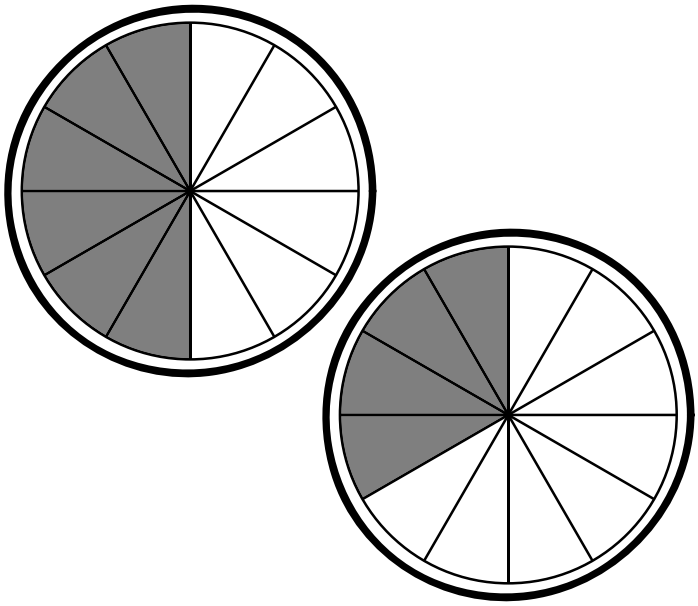
Comparing and Ordering Fractions

3rd–5th Grade



Objective

CCSS Math/Number and Operations-Fractions: 4.NF.2

- Extend understanding of fraction equivalence and ordering.

  2. Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2). Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, = or <, and justify the conclusions (e.g., by using a visual fraction model).

Materials Needed

- *Pizza Fractions* by Jerry Pallotta
- Chalkboard, whiteboard or document camera
- Fraction Pizza templates
- Comparing Fractions practice page and answer sheet
- Comparing Fractions activity card and recording sheet
- Comparing Fractions spinners and answer key
- Paper clips
- Pencils
- Pennies or other small objects (to use as game markers)

Preparation

Before teaching this lesson, you may want to introduce students to the concept of equivalent fractions. (Please visit http://www.lakeshorelearning.com/general_content/free_resources/teachers_corner/lesson_plans/equivalentFraction.jsp for a sample lesson.)

Introduction

Read aloud *Pizza Fractions* by Jerry Pallotta to give students a visual representation of fractions.

Procedure

1. Explain to students that they are going to compare and order fractions.
2. Print out and display the first two Fraction Pizza templates on the chalkboard, whiteboard or document camera.
3. Point out that the two pizzas are the same size, but the first pizza is cut into four slices and the second pizza is cut into eight slices. Ask students to identify which pizza has larger slices.
4. Say, "Imagine you are very hungry and someone offers you *one* slice of pizza. Would you rather have one slice of this pizza that is cut into fourths?" (Circle one of the slices on the first pizza and write "1/4" beneath the pizza.) Then ask, "Or would you rather have one slice of this pizza that is cut into eighths?" (Circle one of the slices on the second pizza and write "1/8" beneath the pizza.)

5. Invite students to respond. Then reinforce the correct answer by saying, "Yes, 1/4 is larger than 1/8!" (Write "1/4 > 1/8" on the board or camera.)
6. Reinforce the concept by explaining that, when comparing fractions with the same numerator (top number), the fraction with the smaller denominator (bottom number) is greater. To further illustrate that this is true even when the numerator is smaller than the denominators, write "4/10" and "4/6" and explain how 4/6 is greater than 4/10.
7. Write the fractions 5/12 and 7/12 on the board or document camera. Ask, "What about these two fractions? Their denominators are the same. How do we know which is greater?"
8. Display the pictures of the two pizzas that are cut into twelfths. Then say, "Think of pizzas again. These pizzas are cut into 12 slices. If you are really hungry, would you want five of the 12 slices (shade in 5/12) or seven of the 12 slices (shade in 7/12)?"
9. Reinforce correct answers and point out that when the denominator is the same, the fraction with the larger numerator is greater. (Write "7/12 > 5/12.")
10. Refer to the examples in *Pizza Fractions* to further reinforce learning. (See pages 6–11 in the book.)

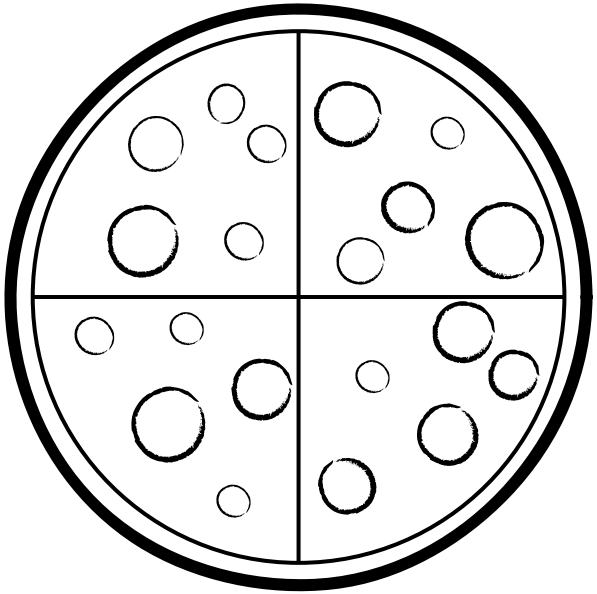
Guided Practice

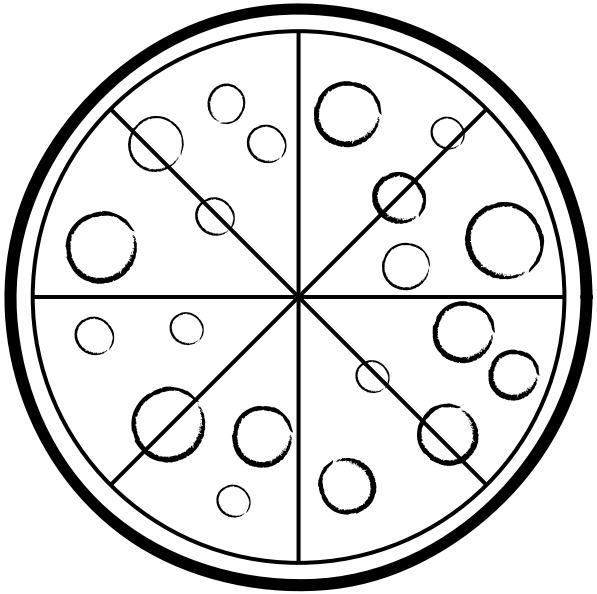
1. Give each student a copy of the Comparing Fractions practice page and a pencil.
2. Invite students to shade in the parts of the pizzas that correspond to the fractions beneath them.
3. Then have students compare the pizzas to determine which fractions are greater than, less than or equal to the others. (Students can use the answer sheet to check their answers.)

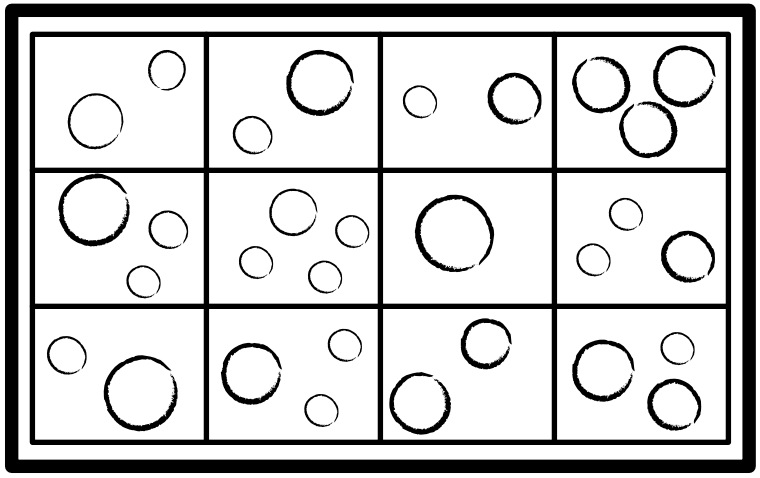
Independent Practice

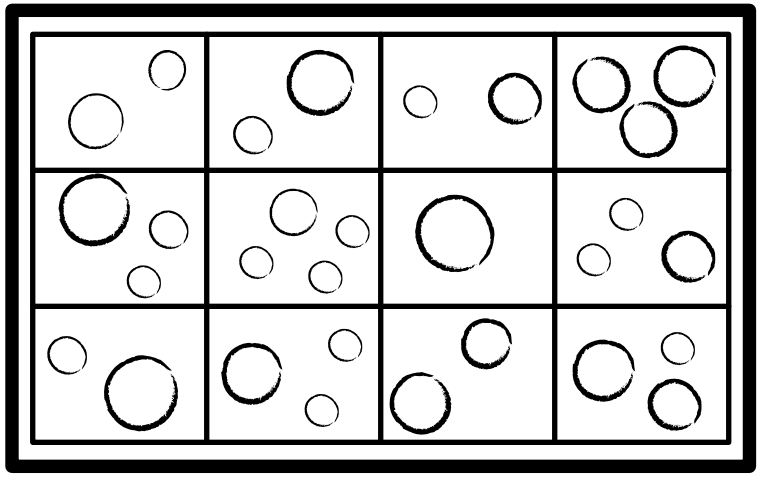
1. Pair students with a partner and give each student a copy of the Comparing Fractions activity card/ recording sheet and spinners. (Each pair of students should have a set of two spinners.)
2. Have students insert a pencil through a paper clip and hold the pencil upright as an arrow for the spinners.
3. Instruct students to use the pennies or other small objects as game markers and follow the recording sheet directions to play the Comparing Fractions game! (An answer key is provided.)

Fraction Pizzas



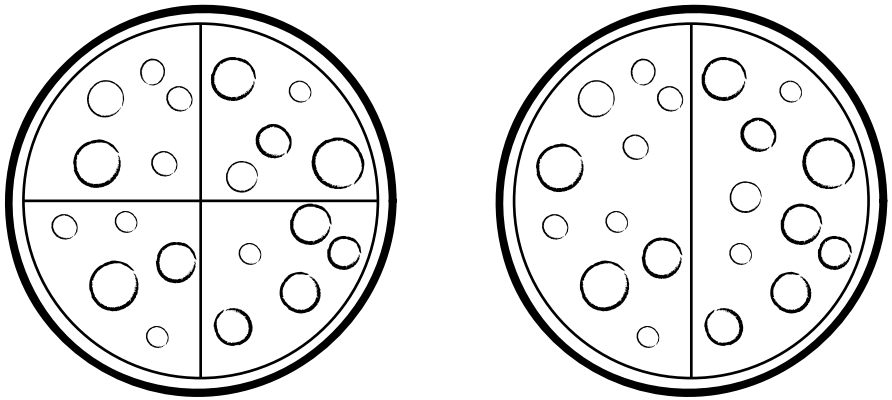




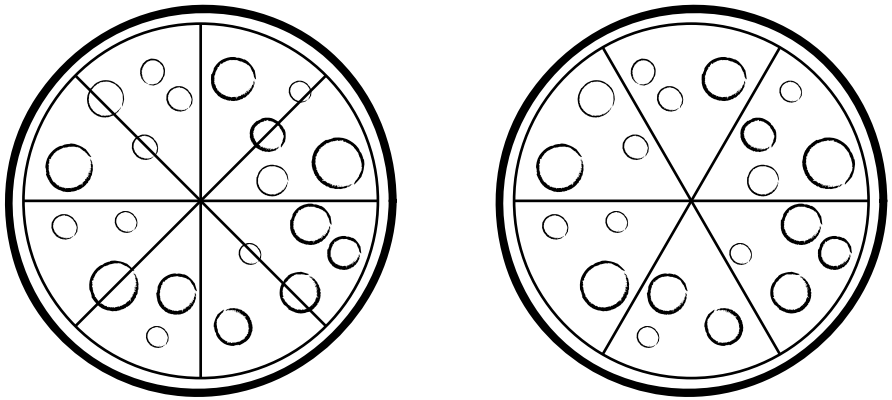


Comparing Fractions

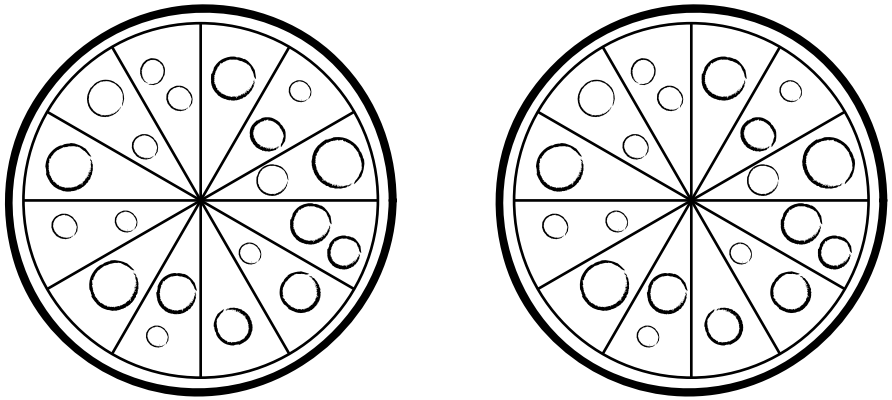
Directions: Shade in the fractions on each pizza and compare. Then write the correct sign.



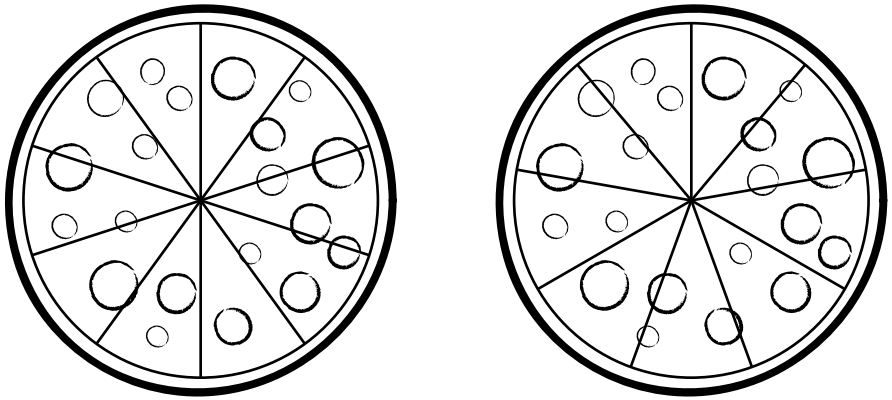
$\frac{2}{4} \_\_\_ \frac{1}{2}$



$\frac{7}{8} \_\_\_ \frac{5}{6}$

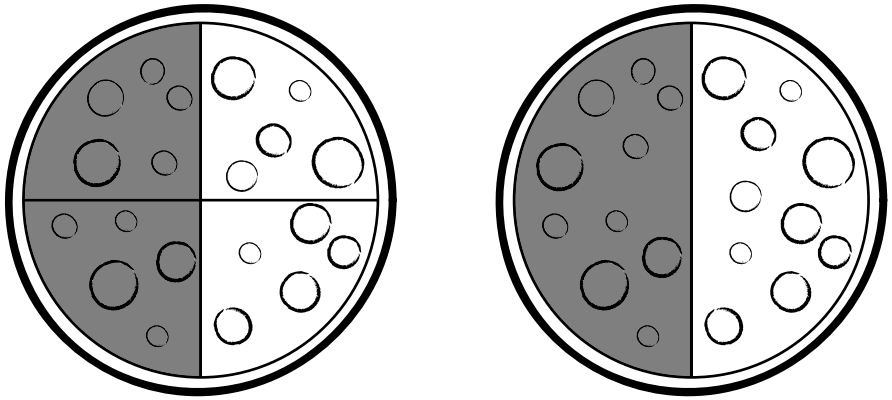


$\frac{6}{12} \_\_\_ \frac{4}{12}$

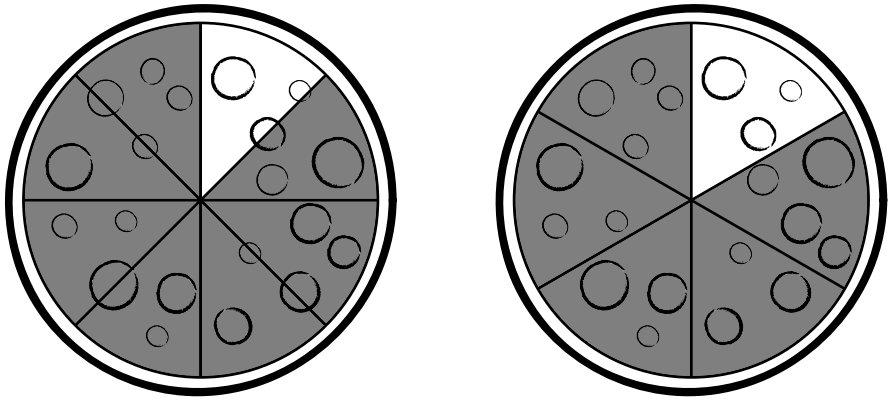


$\frac{3}{10} \_\_\_ \frac{5}{9}$

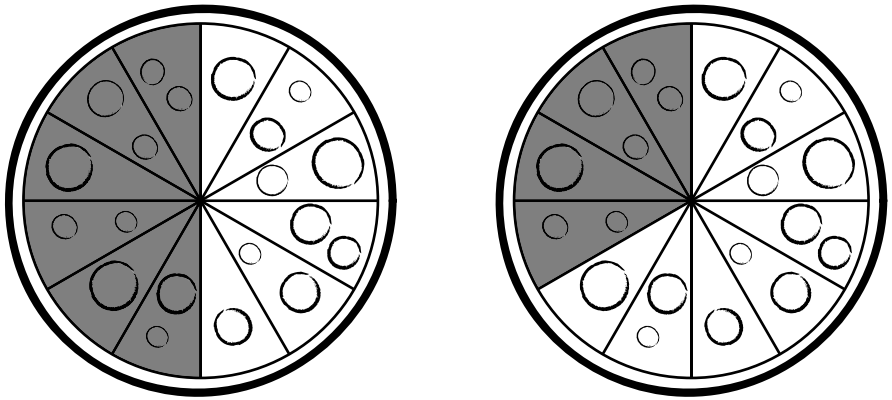
Comparing Fractions - Answers



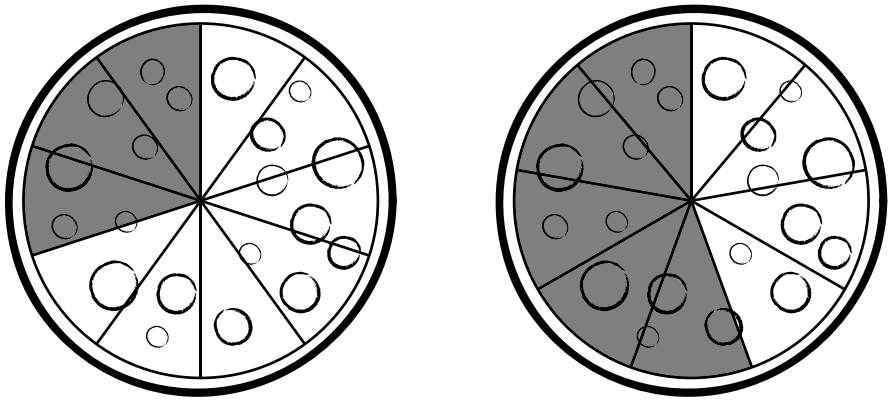
$\frac{2}{4} \; = \; \frac{1}{2}$



$\frac{7}{8} \; > \; \frac{5}{6}$

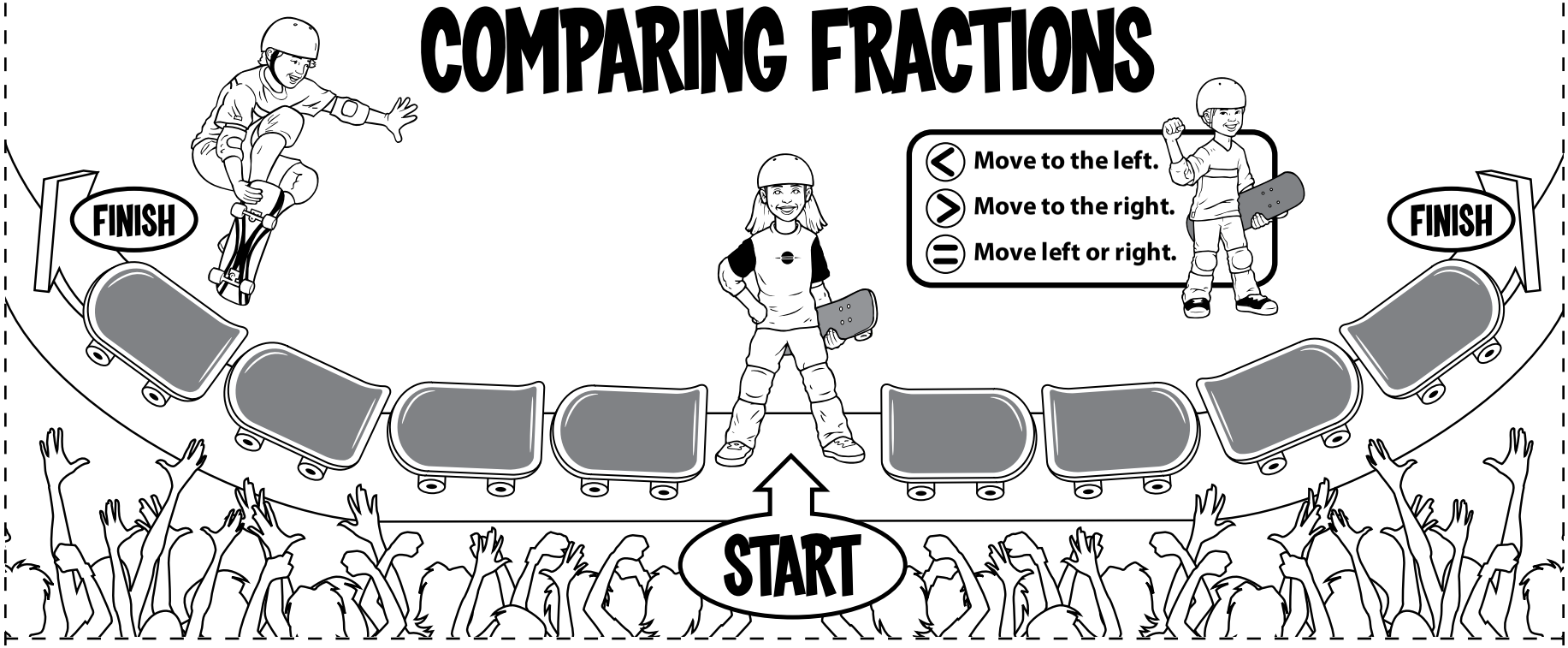


$\frac{6}{12} \; > \; \frac{4}{12}$

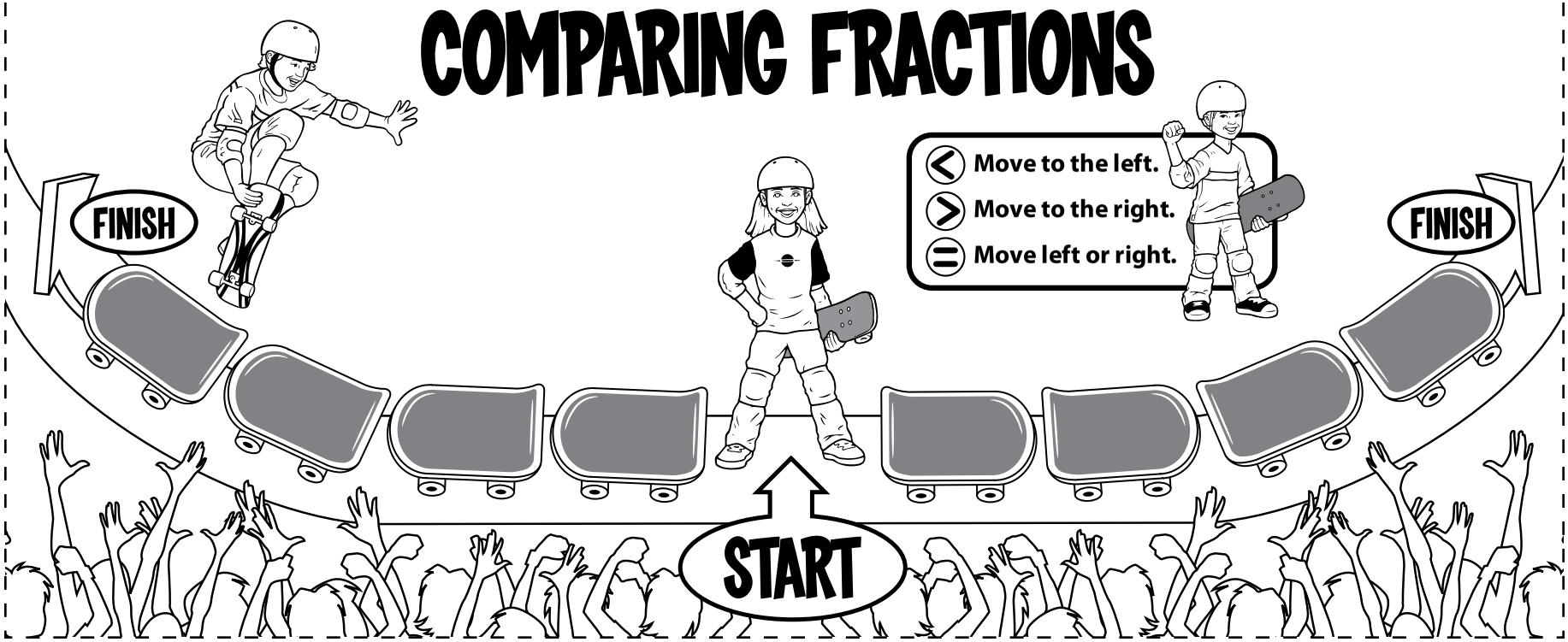


$\frac{3}{10} \; < \; \frac{5}{9}$

COMPARING FRACTIONS



COMPARING FRACTIONS



Name: _____

Comparing Fractions Recording Sheet

How to Play

1. Place your marker in the center of your mat. Spin once, and write that fraction in the "First Spin" column below. Spin again, and write that fraction in the "Second Spin" column.
2. Compare the two fractions. In the circle, write >, <, or = to make the number sentence true.
3. If the symbol points left (<), move your marker one space to the left. If the symbol points right (>), move your marker one space to the right. If you used an equal sign (=), you can move your marker one space in either direction.
4. Keep playing until you move your marker to either end of the mat or you run out of room below. Check your work using the answer card.

If you need more space to show your work, use the back of this page.

First Spin		Second Spin	First Spin		Second Spin
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	
	○			○	

Comparing Fractions - Answers

1/6 < 4/5	6/12 < 4/5	7/8 > 1/6
1/6 < 2/8	6/12 > 2/8	7/8 > 5/7
1/6 < 7/8	6/12 < 7/8	7/8 > 3/9
1/6 < 2/10	6/12 > 2/10	7/8 > 4/9
1/6 < 1/3	6/12 > 1/3	7/8 > 6/12
1/6 < 8/10	6/12 < 8/10	7/8 > 8/12
5/7 < 4/5	8/12 < 4/5	2/10 > 1/6
5/7 > 2/8	8/12 > 2/8	2/10 < 5/7
5/7 < 7/8	8/12 < 7/8	2/10 < 3/9
5/7 > 2/10	8/12 > 2/10	2/10 < 4/9
5/7 > 1/3	8/12 > 1/3	2/10 < 6/12
5/7 < 8/10	8/12 < 8/10	2/10 < 8/12
3/9 < 4/5	4/5 > 1/6	1/3 > 1/6
3/9 > 2/8	4/5 > 5/7	1/3 < 5/7
3/9 < 7/8	4/5 > 3/9	1/3 = 3/9
3/9 > 2/10	4/5 > 4/9	1/3 < 4/9
3/9 = 1/3	4/5 > 6/12	1/3 < 6/12
3/9 < 8/10	4/5 > 8/12	1/3 < 8/12
4/9 < 4/5	2/8 > 1/6	8/10 > 1/6
4/9 > 2/8	2/8 < 5/7	8/10 > 5/7
4/9 < 7/8	2/8 < 3/9	8/10 > 3/9
4/9 > 2/10	2/8 < 4/9	8/10 > 4/9
4/9 > 1/3	2/8 < 6/12	8/10 > 6/12
4/9 < 8/10	2/8 < 8/12	8/10 > 8/12