

Objectives

- Compare like fractions, with and without a number line
- Order like fractions from least to greatest
- Compare unlike fractions using a number line
- Compare unlike fractions using circles

Teacher Materials

- Fraction Number Lines transparency, page IA22 (CD)
- Compare Unlike Fractions transparency, page IA23 (CD)
- Division flashcards: 7 as a divisor, and previously reviewed division facts

Student Materials

- Fraction Number Lines, page IA22 (CD)
- Compare Unlike Fractions, page IA23 (CD)
- Number Cards: 0–9

Practice and Review

Count by 2s to 20 and count by 5s to 50

1. Write $\underline{\quad}, 4, 6, \underline{\quad}, \underline{\quad}, 12, \underline{\quad}, \underline{\quad}, 18, \underline{\quad}$ for display.

➤ **What counting pattern do you notice in this row of numbers? counting by 2s**

Remind the students that counting by 2s is similar to repeated addition.

2. Choose students to write the missing numbers. Then lead the students in counting by 2s to 20.

3. Follow a similar procedure for counting by 5s to 50.

Practice facts
8–10 minutes
daily.

Division facts: 7 as a divisor

Teach for Understanding

Compare and order like fractions

1. Distribute the Fraction Number Lines worksheets and display the Fraction Number Lines transparency. Remind the students that numbers that are less than 1 are fractions or parts of 1 whole. Explain that you can use a number line to compare *like fractions*, fractions that have the same denominator.

2. Call attention to 0 on the first number line. Explain that the fraction closest to 0 has the least value, and that fractions with zero as the numerator, or zero parts of 1 whole, have a value of zero; the fraction closest to 1 has the greatest value.

➤ **How many equal parts is this number line divided into? 4 or fourths. What is the denominator in each of these fractions? 4**

➤ **On this number line, how is 1 whole written as a fraction? $\frac{4}{4}$ zero? $\frac{0}{4}$ $\frac{1}{2}$? $\frac{2}{4}$**

➤ **Which fourth has the least value or is closest to 0 without equaling 0? $\frac{1}{4}$**

➤ **Which fourth has the greatest value or is closest to 1 without equaling 1? $\frac{3}{4}$**

3. Write $\frac{1}{4} \underline{\quad} \frac{3}{4}$ for display.

➤ **Is a greater than sign or a less than sign needed to complete this number sentence? less than, <** Complete the number sentence.

4. Write $\frac{2}{4} \underline{\quad} \frac{1}{4}$ for display.

- **What sign is needed to complete this number sentence? greater than, >** Complete the number sentence.
- **What does each like fraction on the first number line have in common? denominator of 4**
- **What do you notice about the numerators as like fractions get closer to 1? They become larger or increase.**
- **How do you compare fractions with like denominators? Elicit that you look at the numerators. The fraction with the greater numerator has the greater value because it has more of the equal parts.**

5. Write $\frac{2}{4}$, $\frac{1}{4}$, and $\frac{3}{4}$ for display. Explain that ordering like fractions is similar to comparing them.

➤ **How would you order these like fractions from least to greatest? Why? $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$; answers will vary, but elicit that since the denominators are the same, you order the fractions according to the value of the numerators.**

6. Direct attention to the second number line.

➤ **How many equal parts is this number line divided into? 8 or eighths**

Guide the students in labeling 0 as $\frac{0}{8}$, 1 as $\frac{8}{8}$, and the halfway point as $\frac{4}{8}$ on their worksheets as you do the same on the transparency.

➤ **Which fraction equals 1? $\frac{8}{8}$ zero? $\frac{0}{8}$ $\frac{1}{2}$? $\frac{4}{8}$**

➤ **Which fraction has the least value or is closest to 0 without equaling 0? $\frac{1}{8}$**

➤ **Which fraction has the greatest value or is closest to 1 without equaling 1? $\frac{7}{8}$**

7. Write $\frac{1}{8} \underline{\quad} \frac{7}{8}$ for display.

➤ **What sign is needed to complete this number sentence? less than, <** Complete the number sentence.

8. Write $\frac{4}{8} \underline{\quad} \frac{2}{8}$ for display.

➤ **What sign is needed to complete this number sentence? greater than, >**

➤ **What does each like fraction on this number line have in common? denominator of 8**

➤ **What do you notice about the numerators as like fractions get closer to 1? They become larger or increase.**

9. Write $\frac{6}{8}$, $\frac{5}{8}$, and $\frac{3}{8}$ for display.

➤ **How would you order these like fractions from least to greatest? Why? $\frac{3}{8}$, $\frac{5}{8}$, and $\frac{6}{8}$; answers will vary.**

10. Follow a similar procedure as you guide the students in labeling the remaining number lines and comparing these fractions.

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

11. Guide the students in ordering $\frac{1}{6}$, $\frac{4}{6}$, and $\frac{2}{6}$ from least to greatest. $\frac{1}{6}$, $\frac{2}{6}$, $\frac{4}{6}$

12. Write these fractions for display. Guide the students in comparing them without using a number line.

$$\frac{6}{7} > \frac{3}{7} \quad \frac{4}{7} > \frac{2}{7} \quad \frac{1}{7} < \frac{7}{7}$$

$$\frac{7}{9} < \frac{8}{9} \quad \frac{2}{9} < \frac{5}{9} \quad \frac{6}{9} > \frac{3}{9}$$

13. Write these fractions for display. Guide the students in ordering them from least to greatest without using a number line.

$$\frac{4}{7}, \frac{2}{7}, \frac{5}{7}, \frac{2}{7}, \frac{4}{7}, \frac{5}{7} \quad \frac{8}{9}, \frac{3}{9}, \frac{6}{9}, \frac{3}{9}, \frac{6}{9}, \frac{8}{9}$$

Compare unlike fractions

1. Direct attention to the first 2 number lines on the Fraction Number Lines transparency.

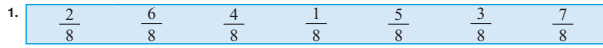
➤ **Do you think that you can combine these 2 number lines? How? Elicit that you can combine them by writing the fourths on the same number line as the eighths.**

➤ **Which fractions are equal to 0? $\frac{0}{4}$ and $\frac{0}{8}$**

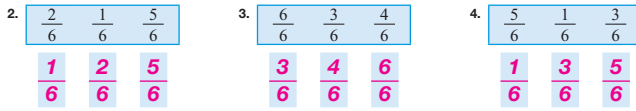
Compare & Order Fractions

Name _____

Write the fractions in order on the number line.



Order the fractions from least to greatest.

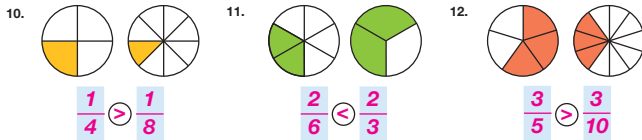


Write > or < to compare the fractions.

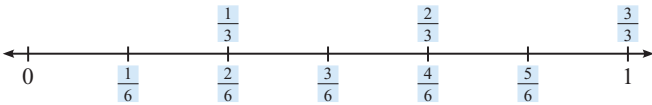
5. $\frac{2}{6} < \frac{5}{6}$ 6. $\frac{4}{6} > \frac{1}{6}$ 7. $\frac{2}{6} < \frac{3}{6}$ 8. $\frac{6}{6} > \frac{1}{6}$ 9. $\frac{5}{6} > \frac{3}{6}$

Write the fraction.

Write >, <, or = to compare the unlike fractions.

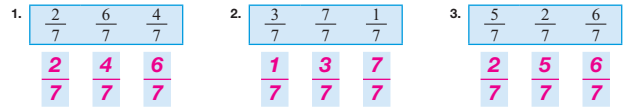


Use the number line to compare the unlike fractions. Write >, <, or = to compare.



13. $\frac{1}{6} < \frac{1}{3}$ 14. $\frac{2}{3} = \frac{4}{6}$ 15. $\frac{3}{6} < \frac{3}{3}$ 16. $\frac{2}{3} > \frac{2}{6}$ 17. $\frac{5}{6} > \frac{1}{3}$

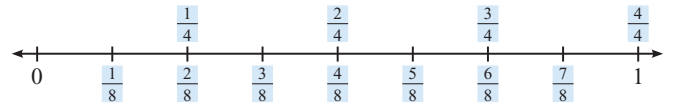
Order the fractions from least to greatest.



Write > or < to compare the fractions.

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

Use the number line to compare the unlike fractions. Write >, <, or = to compare.

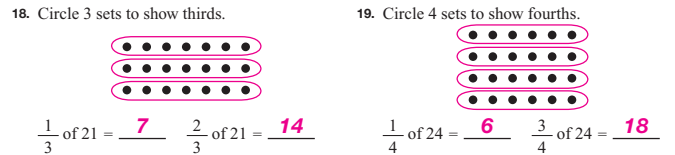


9. $\frac{1}{4} > \frac{1}{8}$ 10. $\frac{3}{8} < \frac{3}{4}$ 11. $\frac{2}{4} = \frac{4}{8}$ 12. $\frac{2}{8} < \frac{4}{4}$ 13. $\frac{5}{8} > \frac{1}{4}$

Color the parts to show the fraction. Write the fraction for the uncolored parts.



Circle the sets. Write the answer.



Complete **Daily Review** on page 84.

Write $\frac{0}{4}$ above 0 on the second number line. Write the corresponding fraction above the number line as students answer each of these questions.

- Which fraction on the eighths number line is equal to $\frac{1}{4}$? $\frac{2}{8}$, $\frac{4}{8}$, $\frac{3}{4}$? $\frac{6}{8}$, $\frac{4}{4}$? $\frac{8}{8}$
- 2. Write $\frac{1}{8} - \frac{1}{4}$ for display. Explain to the students that fractions with different denominators are called *unlike fractions*.
 - What sign is needed to complete the number sentence? Why? *Less than, <*; possible answers: $\frac{1}{8}$ is closer to 0 on the number line than $\frac{1}{4}$; $\frac{1}{4}$ is equal to $\frac{2}{8}$, and $\frac{1}{8}$ is less than $\frac{2}{8}$. Complete the number sentence.
- 3. Write $\frac{2}{4} - \frac{2}{8}$ for display. Direct each student to compare these unlike fractions by placing a pointer finger below each fraction on the second number line on his worksheet.
 - What sign is needed to complete the number sentence? Why? *Greater than, >*; possible answers: $\frac{2}{4}$ is closer to 1 on the number line than $\frac{2}{8}$; $\frac{2}{4}$ is equal to $\frac{4}{8}$, and $\frac{4}{8}$ is greater than $\frac{2}{8}$. Complete the number sentence.
- 4. Write $\frac{3}{8} - \frac{3}{4}$ for display. Direct the students to place a pointer finger below each fraction and compare them.
 - What sign is needed to complete the number sentence? Why? *Less than, <*; possible answers: $\frac{3}{8}$ is closer to 0 on the number line than $\frac{3}{4}$; $\frac{3}{4}$ is equal to $\frac{6}{8}$, and $\frac{3}{8}$ is less than $\frac{6}{8}$. Complete the number sentence.
- 5. Distribute the Compare Unlike Fractions worksheets and direct attention to the thirds and tenths circles on the Compare Unlike Fractions transparency. Explain that each circle represents 1 whole pizza.

- If you were very hungry and could only have one piece of pizza, would you choose $\frac{1}{3}$ or $\frac{1}{10}$ of a pizza? Why? $\frac{1}{3}$; $\frac{1}{3}$ is larger than $\frac{1}{10}$. Write $\frac{1}{3} - \frac{1}{10}$ for display.
- What sign is needed to complete the number sentence? *greater than, >* Complete the number sentence. (*Note:* Leave this and the following number sentences displayed.)
- 6. Direct attention to the halves and eighths circles.
 - If you were not very hungry and could only have one piece of pizza, would you choose $\frac{1}{2}$ or $\frac{1}{8}$ of a pizza? Why? $\frac{1}{2}$; $\frac{1}{8}$ is smaller than $\frac{1}{2}$. Write $\frac{1}{8} - \frac{1}{2}$ for display.
 - What sign is needed to complete the number sentence? *less than, <* Complete the number sentence.
- 7. Direct attention to the fourths and sixths circles.
 - Which is larger, $\frac{3}{4}$ or $\frac{3}{6}$? $\frac{3}{4}$ Write $\frac{3}{4} - \frac{3}{6}$ for display.
 - What sign is needed to complete the number sentence? *greater than, >* Complete the number sentence.
 - Look at all of the circles. What do you notice about the size of the parts as the number in the denominator increases? *The parts get smaller.*
 - Why is it true that when the numerators are the same, the fraction with the larger denominator is the smaller fractional part? *Elicit that the larger denominator indicates that the whole has been divided into more parts, and therefore, the parts are smaller.*

Worktext pages 73–74, 84 (d)