

Chapter Review

Objectives

- Identify the fraction that names part of a whole and part of a set
- Recognize fractions that are equal to 1 whole
- Determine the fraction of a set
- Compare like and unlike fractions
- Order like fractions from least to greatest
- Demonstrate an understanding of an improper fraction and its equivalent mixed number
- Compare mixed numbers
- Add and subtract like fractions
- Add and subtract mixed numbers

Teacher Materials

- Fraction Kit
- 2 student Fraction Kits
- Money Kit
- Fraction Number Lines transparency (from Lesson 30)

Note

This lesson reviews concepts presented in Chapter 3 to prepare students for the Chapter 3 Test. Worktext pages 83–88 and Math Reviews pages 65–66 provide students with an excellent study guide.

Practice and Review

Division facts

Select a Fact Fun activity from Appendix pages A10–A13 to practice previously reviewed facts.

Practice facts  
8–10 minutes  
daily.

Check for Understanding

Identify the fraction that names part of a whole

1. Trace for display the 1 whole bar and the 1 whole circle from your Fraction Kit. Place 3 one-fourth bars on the left of the 1 whole bar.

- ▶ **What part of the rectangle (1 whole bar) is covered?**  $\frac{3}{4}$   
Choose a student to write the fraction for display. Read the fraction together: *three-fourths*.
- ▶ **Which number is the numerator?** 3
- ▶ **What does the numerator tell you?** *the parts of the whole that are selected*
- ▶ **Which number is the denominator?** 4
- ▶ **What does the denominator tell you?** *the total number of equal parts that are in the whole*

Place another one-fourth bar on the 1 whole bar.

- ▶ **How many fourths equal 1 whole?** 4  
Write for display  $\frac{4}{4} = 1$  and lead in reading the equivalent: *4 fourths equal 1*.

2. Follow a similar procedure, using fraction bars or circles, to review other fractions: halves, thirds, and fifths through tenths.

Identify the fraction that names part of a set

1. Display 3 nickels and 2 pennies.
  - ▶ **When writing a fraction for part of a set, what does the denominator tell you?** *the equal parts of the whole set*
  - ▶ **What does the numerator tell you?** *the number of objects selected*

- ▶ **How many coins are in the set?** 5
  - ▶ **What part of the set is nickels?**  $\frac{3}{5}$
  - ▶ **What part of the set is pennies?**  $\frac{2}{5}$
2. Repeat the procedure using 1 nickel and 3 pennies  $\frac{1}{4}$  nickels,  $\frac{3}{4}$  pennies, 5 nickels and 2 pennies  $\frac{5}{7}$  nickels,  $\frac{2}{7}$  pennies, and 3 nickels and 5 pennies  $\frac{3}{8}$  nickels,  $\frac{5}{8}$  pennies.

Determine the fraction of a set

1. Write for display  $\frac{1}{4}$  of 8 = \_\_\_\_.
2. Choose a student to read aloud the number sentence and then to display the whole set of pennies from the Money Kit. 8  
Choose another student to arrange the set of pennies into the appropriate number of groups. *4 groups of 2 pennies*
  - ▶ **Is this arrangement correct? Why?** *Yes; the denominator 4 tells how many groups to divide the set into.*
  - ▶ **How many pennies are in 1 of the 4 groups?** 2  
Complete the number sentence.
3. Write for display  $\frac{3}{4}$  of 8 = \_\_\_\_.  
▶ **How many pennies are in  $\frac{3}{4}$  of the whole set?** 6
4. Follow a similar procedure for  $\frac{1}{2}$  of 6 = \_\_\_\_ *2 groups of 3, 3*;  $\frac{1}{3}$  of 9 = \_\_\_\_ *3 groups of 3, 3*;  $\frac{2}{3}$  of 9 = \_\_\_\_ *6*,  $\frac{1}{5}$  of 15 = \_\_\_\_ *3*; and  $\frac{3}{5}$  of 15 = \_\_\_\_ *9*.

Compare fractions

1. Direct attention to the first number line on the Fraction Number Lines transparency. Remind the students that  $\frac{0}{4}$  is equal to 0 and  $\frac{4}{4}$  is equal to 1. Write for display  $\frac{3}{4} - \frac{1}{4}$ .
  - ▶ **Which fraction is greater? How do you know?**  $\frac{3}{4}$ ; *Answers will vary, but elicit that since both fractions are fourths, the fraction with the greater numerator is the greater fraction.*
  - ▶ **What sign is needed to complete the number sentence?** *greater than, >* Complete the number sentence.
2. Repeat the procedure for  $\frac{3}{8} - \frac{5}{8}$ , using the second number line. *less than, <*
3. Guide the students in comparing these fractions without using a number line. Remind them to compare the numerators when the denominators are the same.  
 $\frac{2}{5} < \frac{4}{5}$        $\frac{3}{6} > \frac{1}{6}$        $\frac{7}{8} > \frac{5}{8}$        $\frac{3}{7} < \frac{4}{7}$
4. Call attention to the first 2 number lines. Write  $\frac{1}{8} - \frac{1}{4}$  for display. Instruct the students to compare the fractions using both number lines.
  - ▶ **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 is  $\frac{1}{4}$ ;  $\frac{1}{4}$  is equal to  $\frac{2}{8}$ , and  $\frac{1}{8}$  is less than  $\frac{2}{8}$ .* Complete the number sentence.
5. Direct attention to the bottom 2 number lines and repeat the procedure for  $\frac{1}{3} < \frac{4}{6}$ ,  $\frac{5}{6} > \frac{1}{3}$ , and  $\frac{2}{6} < \frac{2}{3}$ .

Order like fractions from least to greatest

Write each set of fractions for display and guide the students in ordering them. Remind the students that ordering like fractions is similar to comparing them.

$$\frac{5}{8}, \frac{7}{8}, \frac{1}{8}, \frac{5}{8}, \frac{7}{8} \qquad \frac{4}{5}, \frac{2}{5}, \frac{3}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}$$

$$\frac{3}{9}, \frac{8}{9}, \frac{5}{9}, \frac{3}{9}, \frac{5}{9}, \frac{8}{9} \qquad \frac{5}{6}, \frac{3}{6}, \frac{1}{6}, \frac{3}{6}, \frac{5}{6}$$

Demonstrate an understanding of an improper fraction and its equivalent mixed number

1. Write  $\frac{7}{4}$  for display.
  - ▶ **What is this fraction called? Why?** *Improper fraction; the numerator is greater than the denominator.*
 Remind the students that the value of an improper fraction is equal to or greater than 1.

Write the fraction that tells what part is colored.

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

4.  $\frac{2}{5}$       5.  $\frac{8}{10}$

Write the missing numerator or denominator.

6.  $\frac{3}{3} = 1$       7.  $\frac{2}{8}$

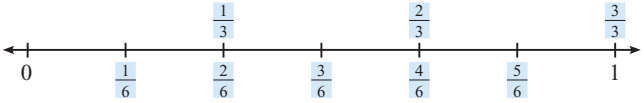
8.  $\frac{2}{4}$       9.  $\frac{5}{5} = 1$

Circle the sets. Write the answer.

10. Circle 4 sets to find fourths.  $\frac{1}{4}$  of 12 = 3

11. Circle 3 sets to find thirds.  $\frac{1}{3}$  of 15 = 5

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



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

Write  $>$  or  $<$  to compare.

17.  $\frac{5}{8} > \frac{1}{8}$       18.  $\frac{2}{7} < \frac{4}{7}$       19.  $\frac{7}{10} > \frac{6}{10}$       20.  $\frac{5}{6} > \frac{3}{6}$       21.  $\frac{1}{5} < \frac{4}{5}$

22.  $2\frac{6}{8} < 2\frac{7}{8}$       23.  $4\frac{5}{7} > 3\frac{6}{7}$       24.  $1\frac{1}{5} < 1\frac{4}{5}$       25.  $2\frac{3}{6} > 1\frac{4}{6}$

Order the fractions from least to greatest.

26.  $\frac{3}{8}, \frac{1}{8}, \frac{6}{8}$       27.  $\frac{6}{6}, \frac{5}{6}, \frac{2}{6}$       28.  $\frac{2}{4}, \frac{3}{4}, \frac{1}{4}$

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

Solve. Rename if needed.

29.  $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$       30.  $\frac{1}{6} + \frac{4}{6} = \frac{5}{6}$       31.  $\frac{9}{8} - \frac{2}{8} = \frac{7}{8}$       32.  $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

33.  $2\frac{1}{3} + 1\frac{1}{3} = 3\frac{2}{3}$       34.  $3\frac{3}{4} - 1\frac{1}{4} = 2\frac{2}{4}$       35.  $1\frac{4}{6} - 1\frac{2}{6} = 2\frac{6}{6} = 2 + 1 = 3$

Color the parts to show the improper fraction. Write the mixed number.

36.  $\frac{6}{4} = 1\frac{2}{4}$



- Display 7 one-fourths from the fraction circles in the student Fraction Kits. Choose a student to make as many whole circles as possible. **1**  
Remind the students that  $\frac{7}{4}$  is one name for this picture.  
**> What mixed number can you write for this picture?  $1\frac{3}{4}$**   
Write  $= 1\frac{3}{4}$  beside  $\frac{7}{4}$ .
- Follow a similar procedure for  $\frac{8}{3} = 2\frac{2}{3}$ ,  $\frac{9}{6} = 1\frac{3}{6}$ , and  $\frac{7}{2} = 3\frac{1}{2}$ .

### Compare mixed numbers

- Write  $3\frac{3}{4} \underline{\quad} 5\frac{1}{4}$  for display.  
**> How do these mixed numbers compare? How do you know?**  
 *$3\frac{3}{4}$  is less than  $5\frac{1}{4}$ ; elicit that the whole number 3 is less than the whole number 5.*  
Write  $<$  to complete the number sentence.
- Write  $2\frac{4}{5} \underline{\quad} 2\frac{2}{5}$ .  
**> What do you do when the whole numbers are the same? Compare the fractions.**  
**> How do these mixed numbers compare? How do you know?**  
 *$2\frac{4}{5}$  is greater than  $2\frac{2}{5}$ ;  $\frac{4}{5}$  is greater than  $\frac{2}{5}$ .*  
Write  $>$  to complete the number sentence.
- Follow a similar procedure for  $6\frac{1}{3} < 6\frac{2}{3}$ ,  $4\frac{5}{8} > 1\frac{2}{8}$ , and  $3\frac{4}{6} > 3\frac{3}{6}$ .

### Add and subtract like fractions

- Write for display  $\frac{2}{6} + \frac{3}{6} = \underline{\quad}$  in vertical form.  
**> What is  $\frac{2}{6} + \frac{3}{6}$ ? How do you know?  $\frac{5}{6}$ ; elicit that when adding like fractions, the denominator stays the same, and you add the numerators.**
- Repeat the procedure for  $\frac{5}{8} - \frac{2}{8} = \underline{\quad}$ .  $\frac{3}{8}$ ; elicit that when subtracting like fractions, the denominator stays the same, and you subtract the numerators.

- Write these problems vertically. Choose students to solve them.

$$\begin{array}{r} \frac{2}{5} + \frac{1}{5} = \frac{3}{5} \\ \frac{4}{3} - \frac{2}{3} = \frac{2}{3} \\ \frac{3}{6} + \frac{1}{6} = \frac{4}{6} \\ \frac{7}{8} - \frac{2}{8} = \frac{5}{8} \\ \frac{2}{7} + \frac{4}{7} = \frac{6}{7} \\ \frac{6}{9} - \frac{3}{9} = \frac{3}{9} \end{array}$$

### Add and subtract mixed numbers

- Write  $2\frac{3}{4} + 1\frac{1}{4} = \underline{\quad}$  in vertical form.  
**> What do you add first? the fractions What do you add next? the whole numbers**
- Choose a student to solve the problem.  $3\frac{4}{4}$   
**> What do you do when the numerator and the denominator in the sum are the same? Rename the fraction as 1 and add it to the whole number.**  
**> What is  $3 + 1$ ? 4** Write  $3 + 1 = 4$  below  $3\frac{4}{4}$ .  
**> What does  $2\frac{3}{4} + 1\frac{1}{4}$  equal? 4**
- Follow a similar procedure for  $2\frac{6}{8} - 1\frac{1}{8} = 1\frac{5}{8}$ .
- Write these problems vertically. Choose students to solve them.
 

$3\frac{2}{3} - 2\frac{1}{3} = 1\frac{1}{3}$	$3\frac{6}{8} + 2\frac{2}{8} = 5\frac{8}{8}, 5 + 1 = 6$
$8\frac{3}{4} - 4\frac{1}{4} = 4\frac{2}{4}$	$4\frac{2}{6} + 3\frac{1}{6} = 7\frac{3}{6}$
$9\frac{7}{8} - 3\frac{2}{8} = 6\frac{5}{8}$	$6\frac{2}{3} + 1\frac{1}{3} = 7\frac{3}{3}, 7 + 1 = 8$

## Worktext pages 87–88