

**Objectives**

- Add and subtract like fractions
- Develop an understanding of improper fractions
- Solve fraction word problems

**Teacher Materials**

- Fraction Kit: fraction circles
- Fraction Word Problems transparency, page IA24 (CD)
- Multiplication flashcards: 8, 9, or 10 as factors, and previously reviewed multiplication facts
- Overhead markers: red and blue

**Student Materials**

- Fraction Kit: fraction circles
- Number Cards: 0–9

**Practice and Review**

Multiplication facts: 8, 9, or 10 as factors

**Introduce the Lesson**

Sharks use their senses to find food. They can see up to 50 feet away in clear water, and they can hear and feel vibrations as far away as 100 feet.

God also created man with five senses—sight, hearing, taste, smell, and touch. Christians should use their bodies and senses to glorify God. [BAT: 3d Body as a temple; Bible Promise: I. God as Master]

- **What are some ways that you can use your five senses to glorify God?**

**Teach for Understanding**

**Add like fractions**

1. Distribute the Fraction Kit circles and direct the students to place the whole circle on their desks. Trace your circle for display. Demonstrate each step.
2. Write for display *1 sixth* and direct the students to place 1 sixth on the 1 whole circle with the curved edges even. Tell the students to place 4 more sixths on 1 whole next to the 1 sixth. Write  $+ 4 \text{ sixths} = \underline{\hspace{1cm}} \text{ sixths}$ . Write  $\frac{1}{6} + \frac{4}{6} = \underline{\hspace{1cm}}$  below the first equation. Lead in counting the sixths:  $\frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}$ .
  - **How many sixths are on the circle? 5 sixths**
  - **What is 1 sixth + 4 sixths? 5 sixths**  
Complete both equations:  $5, \frac{5}{6}$ . Lead in reading the equation:  $\frac{1}{6} \text{ plus } \frac{4}{6} \text{ equals } \frac{5}{6}$ .
  - **What do you notice about the denominators in each of these fractions? They are the same, 6. the numerators?**  
*Possible answers: They are different, 1, 4, and 5; the 1 and the 4 added together equal 5.*
3. Remind the students that fractions that have the same denominator are called *like fractions*. Explain that when you add like fractions, the denominator (the name of the parts you are adding) stays the same, and you add the numerators (the selected parts).

4. Repeat the procedure for  $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$  and  $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$ . Emphasize that when you add like fractions, you add the numerators but the denominator stays the same.
5. Write for display *2 fourths* and direct each student to place 2 fourths on his desk. Tell each student to place 3 more fourths on his desk. Write  $+ 3 \text{ fourths} = \underline{\hspace{1cm}}$  fourths. Write  $\frac{2}{4} + \frac{3}{4} = \underline{\hspace{1cm}}$  below the first equation. Lead in counting the fourths:  $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$ .
  - **What is  $\frac{2}{4} + \frac{3}{4}$ ?  $\frac{5}{4}$**   
Complete both equations:  $5, \frac{5}{4}$ . Lead in reading the equation:  $\frac{2}{4} \text{ plus } \frac{3}{4} \text{ equals } \frac{5}{4}$ .
  - **How many fourths equal 1 whole? 4 fourths**  
Direct the students to arrange 4 fourths on the 1 whole circle.
  - **How many fourths are left over? 1**
  - **What do you notice about the value of  $\frac{5}{4}$ ? Elicit that  $\frac{5}{4}$  is greater than 1 whole.**
  - **What do you notice about the numerator and the denominator in  $\frac{5}{4}$ ? The numerator is greater than the denominator.**  
Explain that when the numerator of a fraction is equal to or greater than the denominator, the fraction is called an *improper fraction*, and that the value of an improper fraction is equal to or greater than 1 whole.
  - **Why is  $\frac{5}{4}$  an improper fraction? The numerator is greater than the denominator;  $\frac{5}{4}$  is greater than 1 whole.**
6. Repeat the procedure for  $\frac{2}{3} + \frac{2}{3} = \frac{4}{3}$  and  $\frac{4}{5} + \frac{3}{5} = \frac{7}{5}$ .
7. Display the Fraction Word Problems transparency; cover the 2 word problems at the bottom. Read aloud the first word problem.
  - **What is the question asking you to find? how much of the pizza Emily and Joshua ate for lunch**
  - **What operation do you use? addition**
  - **What part of the pizza did Emily eat?  $\frac{1}{4}$**  Choose a student to color  $\frac{1}{4}$  of the circle red. Write  $\frac{1}{4}$  for display.
  - **How much of the pizza did Joshua eat?  $\frac{2}{4}$**  Choose a student to color  $\frac{2}{4}$  of the circle blue. Write  $+ \frac{2}{4}$ .
  - **How much of the pizza did they eat?  $\frac{3}{4}$**  Write  $= \frac{3}{4}$  of the pizza. Lead in reading the equation.
8. Follow a similar procedure for the second word problem.  
 $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$
9. Write for display  $\frac{3}{10} + \frac{4}{10}$  in vertical form.
  - **What is the denominator in the answer? Why? 10 or tenths; when adding like fractions, the denominator stays the same.**
  - **What do you add? numerators, 3 and 4**
  - **What is 3 tenths + 4 tenths? 7 tenths,  $\frac{7}{10}$**  Complete the problem. Leave the problem displayed.
10. Repeat the procedure for  $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$ ,  $\frac{3}{8} + \frac{5}{8} = \frac{8}{8}$ ,  $\frac{8}{10} + \frac{3}{10} = \frac{11}{10}$ 
  - **Which of these sums are improper fractions? Why?  $\frac{8}{8}$  and  $\frac{11}{10}$ ;  $\frac{8}{8}$  is equal to 1, the numerator and denominator are the same, and  $\frac{11}{10}$  is greater than 1, the numerator is greater than the denominator.**

**Subtract like fractions**

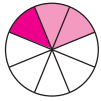
1. Direct each student to place 3 fourths from his Fraction Kit circles on the 1 whole circle. Demonstrate each step. Lead in counting the fourths:  $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}$ .
  - **What fraction is shown on the 1 whole?  $\frac{3}{4}$**
2. Instruct the students to remove  $\frac{2}{4}$ .
  - **What did you do to the  $\frac{3}{4}$ ? took away  $\frac{2}{4}$**
  - **When you take an amount away, what kind of equation do you write? subtraction**

## Add & Subtract Fractions

Name \_\_\_\_\_

Color to show each part that is added. Solve.

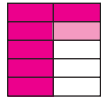
1.



$$\frac{1}{\text{eighth}} + \frac{2}{\text{eighths}} = \frac{3}{\text{eighths}}$$

$$\frac{1}{8} + \frac{2}{8} = \frac{3}{8}$$

2.



$$\frac{6}{10} + \frac{1}{10} = \frac{7}{10}$$

Add.

3.  $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$

4.  $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

5.  $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$

6.  $\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$

7.  $\frac{4}{8} + \frac{2}{8} = \frac{6}{8}$

8.  $\frac{3}{10} + \frac{4}{10} = \frac{7}{10}$

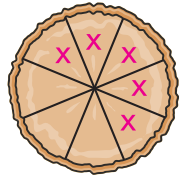
9.  $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$

10.  $\frac{3}{6} + \frac{1}{6} = \frac{4}{6}$

Draw an X to show each part subtracted. Solve.

9. Rosa cut a pie. She served  $\frac{5}{8}$  of the pie for dessert. How much of the pie is left?

$$\frac{8}{8} - \frac{5}{8} = \frac{3}{8} \text{ of the pie}$$



Subtract.

10.  $\frac{7}{9} - \frac{3}{9} = \frac{4}{9}$

11.  $\frac{8}{10} - \frac{3}{10} = \frac{5}{10}$

12.  $\frac{6}{6} - \frac{1}{6} = \frac{5}{6}$

13.  $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

14.  $\frac{7}{8} - \frac{5}{8} = \frac{2}{8}$

15.  $\frac{5}{6} - \frac{2}{6} = \frac{3}{6}$

16.  $\frac{5}{6} - \frac{1}{6} = \frac{4}{6}$

17.  $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$

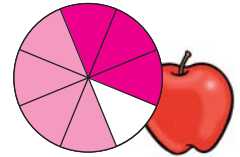
Math 4 Worktext, Chapter 3, Lesson 31

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Color to show each part that is added. Solve and label.

1. Mrs. Simms cut a large apple. She ate  $\frac{3}{8}$  of the apple and her son ate  $\frac{4}{8}$  of the apple. How much of the apple did they eat?

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{8} \text{ of the apple}$$

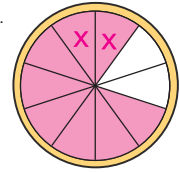


Color the parts.

Draw an X to show each part subtracted. Solve and label.

2. The Simms family had  $\frac{8}{10}$  of a pizza. Ashley took  $\frac{2}{10}$  of the pizza for lunch. How much pizza is left?

$$\frac{8}{10} - \frac{2}{10} = \frac{6}{10} \text{ of the pizza}$$



Solve.

3.  $\frac{4}{9} + \frac{3}{9} = \frac{7}{9}$

4.  $\frac{9}{10} - \frac{5}{10} = \frac{4}{10}$

5.  $\frac{3}{5} - \frac{1}{5} = \frac{2}{5}$

6.  $\frac{6}{8} - \frac{3}{8} = \frac{3}{8}$

7.  $\frac{7}{10} + \frac{2}{10} = \frac{9}{10}$

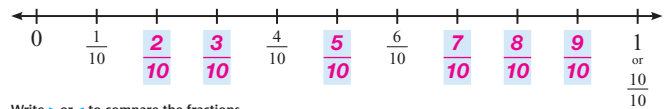
8.  $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

9.  $\frac{7}{8} - \frac{1}{8} = \frac{6}{8}$

10.  $\frac{2}{3} + \frac{1}{3} = \frac{3}{3}$

Write the remaining tenths in order on the number line.

11.



Write > or < to compare the fractions.

12.  $\frac{6}{9} > \frac{2}{9}$

13.  $\frac{3}{9} < \frac{5}{9}$

14.  $\frac{7}{9} < \frac{9}{9}$

15.  $\frac{4}{9} > \frac{1}{9}$

16.  $\frac{8}{9} > \frac{6}{9}$

Complete **Daily Review** on page 85.

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Math 4 Worktext, Chapter 3, Lesson 31

Write for display  $3 \text{ fourths} - 2 \text{ fourths} = \underline{\hspace{1cm}} \text{ fourths}$  and write  $\frac{3}{4} - \frac{2}{4} = \underline{\hspace{1cm}}$  below it.

► How many fourths remain? **1 fourth**

Complete both equations:  $1, \frac{1}{4}$ . Lead in reading the equation:  $\frac{3}{4} \text{ minus } \frac{2}{4} \text{ equals } \frac{1}{4}$ .

► What do you notice about the denominators in this equation? **They are the same or like denominators. the numerators? They are different; you subtract them.**

3. Remind the students that when you subtract like fractions, the denominator stays the same because it names the parts you are subtracting; you subtract the selected parts, the numerators.

4. Direct the students to place 2 thirds on the 1 whole circle. Lead in counting the thirds:  $\frac{1}{3}, \frac{2}{3}$ .

► What fraction of 1 whole is shown?  $\frac{2}{3}$

Instruct the students to remove 1 third.

► What did you do to the  $\frac{2}{3}$ ? **took away  $\frac{1}{3}$**

Write for display  $2 \text{ thirds} - 1 \text{ third} = \underline{\hspace{1cm}} \text{ thirds}$  and write  $\frac{2}{3} - \frac{1}{3} = \underline{\hspace{1cm}}$  below it.

► How do you subtract like fractions? **The denominator stays the same, and you subtract the numerators.**

► What does  $\frac{2}{3} - \frac{1}{3}$  equal?  $\frac{1}{3}$

Complete both equations:  $1, \frac{1}{3}$ . Lead in reading the equation:  $\frac{2}{3} \text{ minus } \frac{1}{3} \text{ equals } \frac{1}{3}$ .

5. Repeat the procedure for  $\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$  and  $\frac{5}{6} - \frac{4}{6} = \frac{1}{6}$ .

6. Erase the coloring in the circle and the square on the Fraction Word Problems transparency. Read aloud word problem 3. [BAT: 5b Sharing]

► What is the question asking you to find? **how much of the cookie is left**

► What operation do you use? **subtraction**

► How much of the cookie did Miss Ashley take to share with her Sunday school class? **all of it or 1 whole**

► How many fourths equal 1 whole? **4** Color the whole circle red. Write  $\frac{4}{4}$  for display.

► How much of the pan cookie did the children eat?  $\frac{3}{4}$  Choose a student to draw an X on, or cross out, 3 parts of the "cookie." Write  $-\frac{3}{4}$ .

► How much of the cookie is left?  $\frac{1}{4}$  Write  $= \frac{1}{4}$  of the cookie. Read together the equation.

7. Follow a similar procedure for word problem 4; use the square to illustrate it.  $\frac{4}{6} - \frac{1}{6} = \frac{3}{6}$  of the bag

8. Write for display  $\frac{10}{8} - \frac{3}{8} = \underline{\hspace{1cm}}$  in vertical form.

► What is the numerator of the answer? **7** Write 7 with a horizontal line below it.

► What is the denominator? **8** Write 8 below the horizontal line.

► What is  $\frac{10}{8} - \frac{3}{8}$ ?  $\frac{7}{8}$  Leave the problem displayed.

Follow a similar procedure for  $\frac{7}{6} - \frac{2}{6} = \frac{5}{6}$ ,  $\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$ , and  $\frac{8}{5} - \frac{3}{5} = \frac{5}{5}$ .



Worktext pages 75–76, 85 (e)