**Objective**
To demonstrate naming quantities greater than 1 with fractions and mixed numbers.

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### Key Concepts and Skills
- Shade fractional parts of regions to represent fractions greater than 1.  
  [Number and Numeration Goal 2]
- Model and name mixed numbers and fractions.  
  [Number and Numeration Goal 2]
- Identify equivalent fractions.  
  [Number and Numeration Goal 5]
- Use lines of symmetry to divide figures into equal parts.  
  [Geometry Goal 3]

### Key Activities
Children model fractions greater than 1 and equivalent mixed numbers by gluing fractional parts of a unit circle onto unit circles. They practice naming numbers of fractional parts as fractions and mixed numbers.

### Ongoing Assessment: Informing Instruction
See page 685.

### Key Vocabulary
- mixed number

### Materials
- Math Journal 2, pp. 197 and 198
- Home Link 8-6
- Math Masters, p. 436 (one copy per 3 children)
- scissors  ●  glue  ●  slates  ●  crayons

### Advance Preparation
Make enough copies of Math Masters, page 436 so each child can have one strip of 4 circles. Cut the strips apart and place them next to the Math Message.

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**Playing the Equivalent Fractions Game**
Student Reference Book, pp. 283 and 284
per partnership: 1 deck of Fraction Cards, half-sheet of paper
Children practice recognizing equivalent fractions.

**Ongoing Assessment: Recognizing Student Achievement**
Use the record sheet for the Equivalent Fractions Game.  
[Number and Numeration Goal 5]

**Math Boxes 8-7**
Math Journal 2, p. 199
Children practice and maintain skills through Math Box problems.

**Home Link 8-7**
Math Masters, pp. 258 and 259
Children practice and maintain skills through Home Link activities.

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**READYNESS**
Modeling Fractions of Regions Larger Than One Whole
Math Masters, p. 260
pattern blocks  ●  Pattern-Block Template
Children use pattern blocks to compare fractions of regions to one whole.

**ENRICHMENT**
Placing Fractions on a Number Line
Math Masters, p. 261
half-sheet of paper
Children write fractions on a number line.

**EXTRA PRACTICE**
Playing Fraction Top-It
Student Reference Book, pp. 287 and 288
per partnership: 1 deck of Fraction Cards  
(Math Journal 2, Activity Sheets 5–8)
Children play Fraction Top-It.

**ELL SUPPORT**
Building a Math Word Bank
Differentiation Handbook, p. 132
Children add the term mixed number to their Math Word Banks.
1. Take a strip and cut out the 4 circles.

2. How would you answer the following problems?
   - Emily had 3 apples. She cut one in half and ate one of the halves. How many apples were left?
   - Then she cut each of the other whole apples in half. She gave all the half-apples to her friends. How many half-apples did she give away?

Home Link 8-6 Follow-Up

Have partners share their answers for Problems 11–14. Ask a few volunteers to share their solution strategies with the class.

Getting Started

Mental Math and Reflexes

Dictate pairs of decimals. Children write them on their slates and circle the larger number. Suggestions:
- twenty-seven hundredths; sixty-seven hundredths 0.27; 0.67
- five-tenths; five-hundredths 0.5; 0.05
- three and six-tenths; thirty and sixteen-hundredths 3.06; 31.6
- seventy-two hundredths; nine-tenths 0.72; 0.9

Math Message

1. Illustrate the number story in the Math Message on the board.
   - Emily had 3 apples. She cut one in half and ate one of the halves. How many apples were left?

   2 1/2 apples

   - Then she cut each of the other whole apples in half. She gave all of the half-apples to her friends. How many half-apples did she give away?

   Five halves of apples

Write 2 1/2 and 5/2 on the board. Ask: Do these numbers—2 1/2 and 5/2—name equivalent amounts of apples? Yes
More Than ONE

Use the circles that you cut out for the Math Message.

1. Glue 3 halves into the two whole circles.
   - 3 halves or 1 1/2
   - 1 1/2 or one and 1 half

2. Glue 6 fourths into the two whole circles. Fill in the missing digits in the question, the fraction, and the mixed number.
   - 6 fourths
   - Write the fraction: 6/4
   - Write the mixed number: 1 1/4
   - 1/4

How many fourths?

Math Journal 2, p. 197

Naming Fractional Parts Greater Than ONE

(Math Journal 2, p. 197; Math Masters, p. 436)

First, ask children to take two of the circles they cut out and fold them in half. Write 1/2 on each half, and then cut each circle along the fold line. Have the class count halves while you write the fractions on the board: one half 1/2 two halves 2/2 three halves, STOP.

Ask: How would you write a fraction that names three halves? 3/3
How is this fraction different from the fractions you have used so far? The numerator is greater than the denominator.

Draw two pairs of circles on the board. In one pair, divide both circles in half and shade three of the halves. Label the picture 3/2. In the second pair, divide only one circle in half. Shade one of the halves and the complete circle. Label the picture 1 1/2. Ask children to compare the two pictures. The same amount of space is shaded.


Next, have children glue three of the halves inside the two circles in Problem 1 on journal page 197. Point out that because each circle is ONE, or 1 whole, 3/2 is 1 1/2 more than 1, and can be written as 1 1/2. Emphasize that 1 1/2 and 3/2 are equivalent names and represent the same amount. Write 1 1/2 on the board and explain that the number 1 1/2 is called a mixed number because it is made up of a whole number and a fraction.

Ask children to fold the other two circles into four equal parts: Write 1/4 in each part and cut each circle along the fold lines. Have children glue six of the fourth pieces inside the two remaining circles (in Problem 2) on the journal page. Then they write a fraction that names the six pieces 6/6 or 3/3 and a mixed number that names the six pieces 1 5/6 or 1 1/2.

If no one wrote 3/2 or 1 1/2, ask the class to compare the two pairs of circles for 3 halves and 6 fourths. Ask: Why is 6/6 equivalent to 3/3? Why is 1 1/2 equivalent to 1 1/2? Both name the same amount of circles.

Draw 4 equal-sized circles on the board. Ask children to think of ways to name all four circles with a fraction. From their journal work, children can probably come up with equivalent halves (8/2) and fourths (16). Encourage them to try other denominators. If no one suggests it, ask about 4/1. Remind them that the denominator of the fraction names the number of parts into which the whole has been divided. If the circles are not divided into parts, then the denominator is 1. Since there are 4 circles, 4 is the number in the numerator.
Ongoing Assessment: Informing Instruction

Watch for children who have difficulty writing mixed numbers. Write them on the board as you say them to provide a visual reference for children.

Links to the Future

The activities in this lesson expose children to the concept of naming fractional parts greater than one as fractions and mixed numbers. Converting between fractions and mixed numbers is a Grade 5 Goal.

Naming Parts with Fractions and Mixed Numbers

(Math Journal 2, p. 198)

You may want to do Problem 3 with the class to make sure children know what is expected. They color a given number of fractional parts of circles and use the resulting diagrams to name them with a fraction and a mixed number. Note that the answer to Problem 6 is a mixed number greater than 2.

2 Ongoing Learning & Practice

Playing the Equivalent Fractions Game

(Student Reference Book, pp. 283 and 284)

The game was introduced in Lesson 8-5. If necessary, children can read the rules for the Equivalent Fractions Game in the Student Reference Book on pages 283 and 284. Have children record equivalent fraction pairs they make on a record sheet made from a half-sheet of paper. Remind them to write an = symbol between equivalent fractions.

Ongoing Assessment: Recognizing Student Achievement

Use the Record Sheet to assess children’s progress toward using Fraction Cards to find equivalent fractions. Children are making adequate progress if they record at least 2 pairs. Some children may be able to identify equivalent fractions without using the shaded sides of the cards.

(Number and Numeration Goal 5)
1. In the number 56,714:
   the 7 means ________
   the 6 means ________
   the 5 means ________
   the 1 means ________

2. Share $10.00 equally among 3 people.
   Each person gets $ ________

   Each person gets $ ________

4. On which color is the arrow most likely to land? ________
   Least likely to land? ________

5. What fraction of the WHOLE carton is each egg?
   Each egg is ________

   a. 6 x 9 = ________
   b. 7 x 7 = ________
   c. 8 x 9 = ________
   d. 4 x 8 = ________

7. In the number 56.714:
   the 5 means ________
   the 4 means ________
   the 6 means ________
   the 7 means ________

8. Write the fraction: ________
   Write the mixed number: ________

9. Write these problems on the back of this page. Solve and show your work.
   a. 301
   b. 27
   c. 600
   d. 101
   e. 13
   f. 46
   g. 124
   h. 230

Home Link 8-7
(Math Masters, pp. 258 and 259)

Home Connection
Children color figures according to directions and then write fractions and mixed numbers to describe those pictures.
3 Differentiation Options

**READINESS**

► Modeling Fractions of Regions Larger Than One Whole

(Math Masters, p. 260)

To provide experience with comparing fractions of regions to the WHOLE, have children build the shapes on Math Masters, page 260 with pattern blocks.

**ENRICHMENT**

► Placing Fractions on a Number Line

(Math Masters, p. 261)

To apply children’s understanding of mixed numbers, have them identify and locate numbers between consecutive whole numbers on a number line. Have children discuss how they decided where to place their fractions on the number lines.

**EXTRA PRACTICE**

► Playing Fraction Top-It

(Student Reference Book, pp. 287 and 288)

To provide practice with comparing fractions, have children play Fraction Top-It, which was introduced in Lesson 8-6. Children may play the advanced version of the game. If necessary, they can read the rules for both versions of Fraction Top-It in the Student Reference Book on pages 287 and 288.

**ELL SUPPORT**

► Building a Math Word Bank

(Differentiation Handbook, p. 132)

To provide language support for fractions, have children use the Word Bank template found on Differentiation Handbook, page 132. Ask children to write the term *mixed number*, draw a picture representing the term, and write other related words. See the Differentiation Handbook for more information.