

Objectives

- Add and subtract mixed numbers
- Write mixed numbers

Teacher Materials

- Fraction Kit: fraction circles
- Add & Subtract Mixed Numbers transparency, page IA26 (CD)
- Division flashcards: 9 as a divisor, and previously reviewed division facts

Student Materials

- Fraction Kit: fraction circles
- Add & Subtract Mixed Numbers, page IA26 (CD)
- Number Cards: 0–9

Practice and Review

Round numbers to the place with the greatest value, using a number line

Guide the students in using a number line to round these numbers as was taught in Lesson 6.

814 **800** 7,563 **8,000** 3,286 **3,000** 40,965 **40,000**

Division facts: 9 as a divisor

Introduce the Lesson

A mother shark might have as few as one or two baby sharks at a time or as many as 100. A baby shark is called a pup. The pups are born with teeth and the ability to swim. Unlike many other newborn animals, sharks live on their own after birth.

Nehemiah 9:6 states that God preserves the earth and the seas and everything that is in them. God cares for all creatures on land and sea. [Bible Promise: I. God as Master]

Teach for Understanding

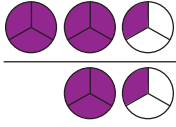
Add mixed numbers

1. Distribute the Fraction Kit circles and arrange the students in pairs. Write for display $2\frac{1}{3} + 1\frac{1}{3} = \underline{\hspace{1cm}}$ in vertical form. Direct one student in each pair to show the first mixed number using the circle fraction pieces and the other student to show the second mixed number.
2. Remind the students to start with the smallest unit or the place with the least value when adding.
 - **Which unit is smaller—parts of a whole or 1 whole? parts of a whole**
 - **What do you add first when adding mixed numbers? the fractions**
Instruct each pair of students to combine the thirds.
 - **What is $\frac{1}{3} + \frac{1}{3}$? $\frac{2}{3}$** Write $\frac{2}{3}$ below the base line of the problem.
Tell the students to combine the wholes.
 - **What does $2 + 1$ equal? 3** Write 3 below the base line.
Choose a student to read the sum: $3 \text{ and } \frac{2}{3}$.

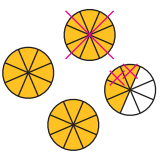
3. Write $1\frac{3}{5} + 1\frac{2}{5} = \underline{\hspace{1cm}}$ vertically for display.
Direct one student in each pair to show the first mixed number and the other student to show the second mixed number.
Instruct each pair of students to combine the fifths.
 - **What does $\frac{3}{5} + \frac{2}{5}$ equal? $\frac{5}{5}$** Write $\frac{5}{5}$ below the base line of the problem.
Direct the students to combine the wholes.
 - **What is $1 + 1$? 2** Write 2 below the base line.
Select a student to read the sum: $2 \text{ and } \frac{5}{5}$.
 - **What do you notice about the fraction in the sum? The numerator and the denominator are the same number.**
 - **What does $\frac{5}{5}$ equal? 1 whole**
 - **What do you think you should do with the $\frac{5}{5}$? Elicit to rename it as 1 whole and add the 1 whole to the 2 wholes.**
4. Remind the students that when the numerator and denominator of a fraction are the same, the fraction is equal to 1 whole. Explain that it is renamed as 1 whole and added to the whole number of the mixed number in the sum.
Write $2 + 1 =$ below $2\frac{5}{5}$.
 - **What is $2 + 1$? 3** Write 3.
 - **What does $1\frac{3}{5} + 1\frac{2}{5}$ equal? 3**
5. Repeat the procedure for $2\frac{3}{6} + 2\frac{2}{6} = 4\frac{5}{6}$ and $1\frac{3}{4} + 2\frac{1}{4} = 3\frac{4}{4}, 3 + 1 = 4$.
6. Distribute the Add & Subtract Mixed Numbers worksheets. Display the transparency with the subtraction problems covered. Call attention to the first problem.
 - **What do you add first? Why? The fractions or parts of a whole; when you add, you start with the smallest unit or the place with the least value.**
 - **What is $\frac{1}{4} + \frac{2}{4}$? $\frac{3}{4}$**
Direct the students to write $\frac{3}{4}$ in the answer below the partially colored circles. Demonstrate each step.
 - **What do you add next? the wholes**
 - **What is $2 + 2$? 4**
Instruct the students to write 4 in front of the fraction.
Read the sum together: $4 \text{ and } \frac{3}{4}$.
7. Follow a similar procedure for problem 2; add the renamed halves on the second answer line:
 $2\frac{1}{2} + 1\frac{1}{2} = 3\frac{2}{2}, 3 + 1 = 4$.
8. Write for display $3\frac{3}{6} + 2\frac{3}{6} = \underline{\hspace{1cm}}$ in vertical form.
 - **What do you add first? the fractions**
 - **What is $\frac{3}{6} + \frac{3}{6}$? $\frac{6}{6}$** Write $\frac{6}{6}$ in the answer.
 - **What do you do next? Add the wholes.**
 - **What does $3 + 2$ equal? 5** Write 5.
 - **What do you notice about the fraction in the sum? The numerator and the denominator are the same number. What must you do? Rename $\frac{6}{6}$ as 1 whole and add 1 whole to the sum.**
Write $5 + 1 =$ below $5\frac{6}{6}$.
 - **What does $5 + 1$ equal? 6** Write 6.
 - **What is $3\frac{3}{6} + 2\frac{3}{6}$? 6**
9. Follow a similar procedure for $3\frac{2}{8} + 4\frac{1}{8} = 7\frac{3}{8}, 5\frac{4}{8} + 4\frac{2}{8} = 9\frac{6}{8}, 2\frac{1}{3} + 4\frac{2}{3} = 6\frac{3}{3}, 6 + 1 = 7$.

Adding Mixed Numbers		Subtracting Mixed Numbers	
$\begin{array}{r} 2\frac{2}{4} \\ + 1\frac{1}{4} \\ \hline 3\frac{3}{4} \end{array}$	1. Add the fractions. 2. Add the whole numbers.	$\begin{array}{r} 3\frac{3}{4} \\ - 1\frac{1}{4} \\ \hline 2\frac{2}{4} \end{array}$	1. Subtract the fractions. 2. Subtract the whole numbers.
$5 + 1 = 6$			

Add.

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

Subtract.

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

Add the mixed numbers. Rename if needed.

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

4. $1\frac{2}{8} + 2\frac{5}{8} = 3\frac{7}{8}$

5. $5\frac{2}{6} + 2\frac{1}{6} = 7\frac{3}{6}$

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

Subtract the mixed numbers.

7. $5\frac{7}{8} - 3\frac{1}{8} = 2\frac{6}{8}$

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

9. $3\frac{5}{6} - 1\frac{2}{6} = 2\frac{3}{6}$


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

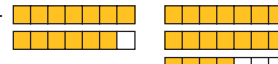
11. $2\frac{4}{5} - 1\frac{2}{5} = 1\frac{2}{5}$

 Color the parts to show the answer.

1. Mrs. Park had a set of 10 buttons. She used $\frac{5}{10}$ of the buttons for a doll outfit. Color the buttons to show how many she used.

Write the mixed numbers. Write $>$ or $<$ to compare.

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

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

Add the mixed numbers. Rename if needed.

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

5. $6\frac{3}{10} + 2\frac{6}{10} = 8\frac{9}{10}$

6. $4\frac{2}{7} + 1\frac{2}{7} = 5\frac{4}{7}$

7. $8\frac{1}{9} + 3\frac{4}{9} = 11\frac{5}{9}$

Subtract the mixed numbers.

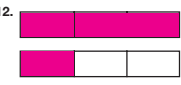
8. $2\frac{5}{6} - 1\frac{2}{6} = 1\frac{3}{6}$

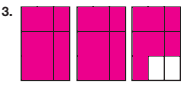
9. $8\frac{7}{9} - 4\frac{6}{9} = 4\frac{1}{9}$

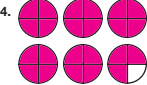
10. $25\frac{3}{4} - 12\frac{1}{4} = 13\frac{2}{4}$

11. $4\frac{4}{5} - 1\frac{2}{5} = 3\frac{2}{5}$

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

12.  $\frac{4}{3} = 1\frac{1}{3}$

13.  $\frac{25}{9} = 2\frac{7}{9}$

14.  $\frac{23}{4} = 5\frac{3}{4}$

Complete **Daily Review** on page 86.

Subtract mixed numbers

- Write $2\frac{3}{4} - 1\frac{1}{4} = \underline{\hspace{2cm}}$ vertically for display. Direct each student to show the first mixed number on his desk, using the Fraction Kit circles. Demonstrate each step.
- Remind the students to start with the smallest unit or the place with the least value when subtracting.
 - ▶ **What is the smaller unit in these mixed numbers? How do you know? Fractions; they represent parts of 1 whole.**
 - ▶ **What do you subtract first? the fractions**
 - Instruct the students to remove 1 fourth from 3 fourths.
 - ▶ **What is $\frac{3}{4} - \frac{1}{4}$? $\frac{2}{4}$** Write $\frac{2}{4}$ below the base line. Direct the students to subtract the wholes.
 - ▶ **What does $2 - 1$ equal? 1** Write 1.
- Choose a student to read the difference: *1 and $\frac{2}{4}$.*
- Repeat the procedure for $2\frac{6}{8} - 1\frac{2}{8} = 1\frac{4}{8}$ and $2\frac{5}{6} - 1\frac{4}{6} = 1\frac{1}{6}$.
- Direct attention to problem 3 on the Add & Subtract Mixed Numbers transparency. Demonstrate each step.
 - ▶ **What mixed number does the picture represent? $2\frac{2}{3}$**
 - Guide the students in writing $2\frac{2}{3}$.
 - ▶ **What do you subtract first? the fractions, $\frac{2}{3} - \frac{1}{3}$**
 - ▶ **How many thirds are there? 2**
 - Tell the students to subtract $\frac{1}{3}$ by drawing an X on $\frac{1}{3}$ of the circle to show that you have taken $\frac{1}{3}$ away.
 - ▶ **What is $\frac{2}{3} - \frac{1}{3}$? $\frac{1}{3}$**
 - Direct the students to write $\frac{1}{3}$ below the base line.
 - ▶ **What do you subtract next? the wholes, $2 - 1$**
 - Direct the students to subtract 1 by drawing an X on 1 of the wholes.
 - ▶ **What is $2 - 1$? 1**
 - Direct the students to write 1 in front of the fraction $\frac{1}{3}$.

- ▶ **What does $2\frac{2}{3} - 1\frac{1}{3}$ equal? $1\frac{1}{3}$** Read the difference together: *1 and $\frac{1}{3}$.*
- 6. Repeat the procedure for problem 4. $2\frac{5}{6} - 1\frac{3}{6} = 1\frac{2}{6}$
- 7. Write for display $7\frac{5}{8} - 4\frac{1}{8} = \underline{\hspace{2cm}}$ in vertical form.
 - ▶ **What do you subtract first? the fractions**
 - ▶ **What is $\frac{5}{8} - \frac{1}{8}$? $\frac{4}{8}$** Write $\frac{4}{8}$ in the answer.
 - ▶ **What do you do next? Subtract the wholes.**
 - ▶ **What is $7 - 4$? 3** Write 3.
 - ▶ **What does $7\frac{5}{8} - 4\frac{1}{8}$ equal? $3\frac{4}{8}$**
- 8. Follow the procedure for $8\frac{3}{4} - 2\frac{1}{4} = 6\frac{2}{4}$, $5\frac{6}{7} - 3\frac{2}{7} = 2\frac{4}{7}$, $6\frac{3}{5} - 1\frac{2}{5} = 5\frac{1}{5}$.

 **Worktext pages 79–80, 86 (g)**