

**Objectives**

- Identify the numbers that are  $\frac{1}{2}$  of 10; 100; 1,000; 10,000; 100,000; and 1,000,000
- Round a number to the place with the greatest value
- Round a number to a given place within the number

**Teacher Materials**

- Place Value Pocket Chart Kit
- Halfway Point transparency, page IA2 (CD)
- Fact family flashcards: 6-7-13, 5-8-13, 4-9-13, and previously memorized facts

**Student Materials**

- Halfway Point, page IA2 (CD)

**Practice and Review**

**Subtract 2- and 3-digit numbers**

1. Write these problems for display and choose students to solve them.

$\begin{array}{r} 92 \\ - 34 \\ \hline 58 \end{array}$	$\begin{array}{r} 38 \\ - 9 \\ \hline 29 \end{array}$	$\begin{array}{r} 413 \\ - 109 \\ \hline 304 \end{array}$	$\begin{array}{r} 862 \\ - 587 \\ \hline 275 \end{array}$	$\begin{array}{r} 354 \\ - 269 \\ \hline 85 \end{array}$	$\begin{array}{r} 728 \\ - 83 \\ \hline 645 \end{array}$
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2. Direct each student to explain the solution to his problem. Guide the explanation as needed.

**Fact families: 6-7-13, 5-8-13, 4-9-13**

Use fact family flashcards to review the facts in these fact families and those from previous lessons.

**Introduce the Lesson**

Long ago, many ships sank because of storms at sea. It has been said that shipwrecks are history hidden beneath the waves. Over the years, treasure hunters have searched for valuable cargo that was carried by these sunken ships.

In order to be successful in salvaging sunken treasure, these men need to estimate the depth of the sunken vessel and how much treasure might be on the ship. This information helps them to determine what equipment they need to retrieve the treasure.

**Teach for Understanding**

**Identify the numbers that are  $\frac{1}{2}$  of 10; 100; 1,000; 10,000; 100,000; and 1,000,000**

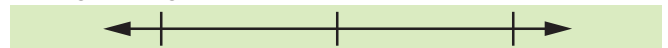
1. Display the Place Value Pocket Chart and distribute the Halfway Point worksheets.
  - **What is  $\frac{1}{2}$  of 10? 5 How many ones are in 5? 5**
2. Direct attention to the pocket chart.
  - **Where is the Ones place in relationship to the Tens place? immediately to the right of the Tens place** Place 5 in the Ones place. Point out that the 5 ones in 5 are in the place immediately to the right of the Tens place.
3. Demonstrate on the Halfway Point transparency as you guide the students in completing the first number sentence on their worksheet. **5, 5**

- **What is  $\frac{1}{2}$  of 100? 50 How many tens are in 50? 5**
4. Direction attention to the pocket chart.
    - **Where is the Tens place in relationship to the Hundreds place? to the right of the Hundreds place** Place 50 in the pocket chart. Point out that the 5 tens in 50 are in the place immediately to the right of the Hundreds place.
  5. Guide the students in completing the number sentence on their worksheet. **50, 5**
  6. Repeat the procedure for  $\frac{1}{2}$  of 1,000. **500, 5**
    - **What pattern do you notice in determining  $\frac{1}{2}$  of 10,  $\frac{1}{2}$  of 100, and  $\frac{1}{2}$  of 1,000? Elicit that  $\frac{1}{2}$  of each of the numbers is 5 of the place immediately to the right of the place with the greatest value.**
  7. Repeat the procedure as you guide in completing the worksheet. Remind the students that one-half of each number is 5 of the place immediately to the right of the place with the greatest value.
 

**5,000; 5      50,000; 5      500,000; 5**

**Round a number to the place with the greatest value**

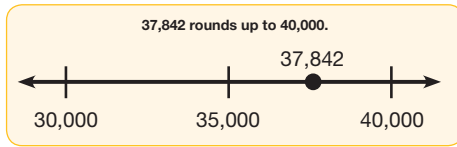
1. Draw for display a number line with 3 vertical lines to mark the first, last, and middle numbers. Write 4,825 below the number line. Explain that you want to round 4,825 to the nearest one thousand, the place with the greatest value in the number. Remind the students that the digit being rounded is called the *rounding digit*.



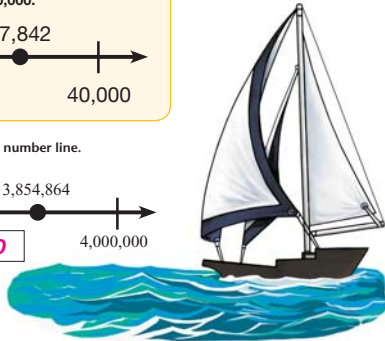
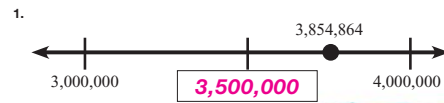
- **The number 4,825 is between which one thousand numbers? 4,000 and 5,000**
2. Write 4,000 below the first mark on the number line and 5,000 below the last mark. Explain that this number line shows the 1,000 from 4,000 to 5,000.
  3. Point to the middle mark on the number line.
    - **What is  $\frac{1}{2}$  of 1,000? 500 Since  $\frac{1}{2}$  of 1,000 is 500, what number is halfway between 4,000 and 5,000? 4,500** Write 4,500 below the middle mark.
    - **Does 4,825 come before or after the halfway point of 4,500 on the number line? Why? After; 4,825 is greater than 4,500.** Draw a dot on the number line to mark the approximate location of 4,825. Write 4,825 above the dot.
    - **Is 4,825 closer to 4,000 or 5,000? 5,000**
    - **Should 4,825 be rounded down to 4,000 or up to 5,000? Why? Up to 5,000; it is closer to 5,000.** Circle 5,000 below the number line.
  4. Follow a similar procedure as you guide the students in drawing number lines on paper to round these numbers. Demonstrate; leave each number line displayed.
 

64,904	<b>60,000</b>	8,587,116	<b>9,000,000</b>
136	<b>100</b>	984,272	<b>1,000,000</b>

    - **In each of these numbers, what do you notice about the digit immediately to the right of the rounding digit? Elicit that when the digit immediately to the right of the rounding digit is less than 5, you round the number down; when the digit immediately to the right of the rounding digit is 5 or more, you round the number up.**
  5. Write 73,985 for display.
    - **What ten thousand numbers is 73,985 between? 70,000 and 80,000** Write 70,000 and 80,000 for display.
    - **What number is halfway between 70,000 and 80,000? 75,000**
  6. Point to the 3 in 73,985.



Write the number for the halfway point on the number line.



Round to the place with the greatest value. Circle the number.

2.  $8,721$   
8,000      9,000

3.  $52,017$   
50,000      60,000

4.  $629$   
600      700

5.  $248,446$   
200,000      300,000

6.  $926,281$   
900,000      1,000,000

7.  $457,247$   
400,000      500,000

Round to the nearest ten. Circle the number.

8.  $2,173$   
2,170      2,180

10.  $28,631$   
28,600      28,700

9.  $17,539$   
17,530      17,540

11.  $574,125$   
574,100      574,200

Round to the place with the greatest value. Circle the number.

1.  $378$   
300      400

2.  $513,981$   
500,000      600,000

3.  $5,276$   
5,000      6,000

4.  $194,538$   
100,000      200,000

Round to the place with the greatest value. Write the number.

5.  $84,126$       80,000

6.  $3,542$       4,000

7.  $760,044$       800,000

8.  $324,517$       300,000

Match the number to the word form or expanded form.

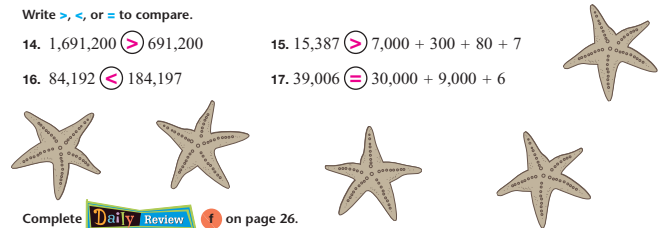
9. B 1,596,301      A. forty-eight thousand, five hundred ninety-three  
 10. D 791,416      B.  $1,000,000 + 500,000 + 90,000 + 6,000 + 300 + 1$   
 11. A 48,593      C. one million, nine hundred fifty-six thousand, one hundred thirty-three  
 12. C 1,956,133      D. seven hundred ninety-one thousand, four hundred sixteen

Write the numbers from least to greatest.

13.  $36,628$        $152,453$        $18,165$        $351,126$   
18,165      36,628      152,453      351,126

Write  $>$ ,  $<$ , or  $=$  to compare.

14.  $1,691,200$   $>$   $691,200$       15.  $15,387$   $>$   $7,000 + 300 + 80 + 7$   
 16.  $84,192$   $<$   $184,197$       17.  $39,006$   $=$   $30,000 + 9,000 + 6$



Complete **Daily Review** on page 26.

- Does 73,985 come before or after the halfway point of 75,000? *before*
- Should 73,985 be rounded down to 70,000 or up to 80,000? Why? *Down to 70,000; answers will vary, but elicit that the digit to the right of the rounding digit is less than 5.* Circle the 70,000.
- Repeat the procedure for 9,165 *9,000*; 1,802,961 *2,000,000*; 659,083 *700,000*; and 92,712 *90,000*.
- Explain that people often round numbers to the place that has the greatest value because these estimates are easier to remember and compute than the exact numbers.
- When might it be simpler to use estimates such as 200; 3,000; or 5,000,000? *Answers will vary.*

**Round a number to a given place within the number**

- Explain that at times you may need to round a number to a place other than the place with the greatest value so that the estimate is more accurate and closer to the exact number.
- Draw a number line with 3 vertical lines to mark the first, last, and middle numbers and write 2,436,942 below the number line.
  - What is the rounding digit if you want to round this number to the nearest ten thousand? *3* Underline the 3.
- Write 2,4\_\_ below the first and last marks on the number line. Explain that the 2 millions and 4 hundred thousands stay the same and that you need to determine what ten thousands the number 2,436,942 is between. Underline 36,942 in 2,436,942.
  - What ten thousand numbers is 36,942 between? *30,000 and 40,000*

- Write 30,000 on the blanks below the first mark on the number line and 40,000 on the blanks below the last mark.
- Write 2,4\_\_ below the middle mark on the number line.
  - What number is halfway between 2,430,000 and 2,440,000? *2,435,000*
  - Write 35,000 on the blanks below the middle mark on the number line.
  - Does 2,436,942 come before or after the halfway point of 2,435,000 on the number line? Why? *After; 2,436,942 is greater than 2,435,000.*
  - Draw a dot on the number line to mark the approximate location of 2,435,000. Write 2,436,942 above the dot.
  - Is 2,436,942 closer to 2,430,000 or 2,440,000? *2,440,000*
  - Should 2,436,942 be rounded down to 2,430,000 or up to 2,440,000? Why? *Up to 2,440,000; it is closer to 2,440,000.*
  - Circle 2,440,000 below the number line. Remind the students that they can look at the digit immediately to the right of the rounding digit to determine whether to round up or down.
- Follow a similar procedure to round 2,436,942 to the nearest hundred *2,436,900* and 8,212 first to the nearest ten *8,210* and then to the nearest hundred *8,200*.

**Worktext pages 13–14, 26 (f)**