Have the students look at the place value chart on Skill 4 and place each number to be compared in the chart.

Remind students that they always start from the left and compare digits until they are different.

Ask: Do the two numbers hold the same place? (yes)

Direct attention to Step 1 and have students compare the digits in the ten millions place.

Ask: How many ten millions are in each number? (3) Which is larger? (They are the same). Which number place do you move to next? (one millions place)

Continue in a similar manner with Steps 2 and 3.

TRY THESE In Exercises 1–3 students determine which place they need to use to compare the numbers and insert the greater than, less than, or equal to symbol.

- Exercise 1 <, determined by the hundreds place
- Exercise 2 >, do not hold the same place
- Exercise 3 <, determined by the tens place

PRACTICE ON YOUR OWN Review the example at the top of the page.

Ask: What is the furthest place to the left? (hundred thousands)

Have students make sure that they are comparing digits in the same place by putting numbers in a chart or using lined notebook paper turned sideways.

CHECK Determine that the students can differentiate between the < and > symbols. Success is indicated by 4 out of 4 correct responses.

Students who successfully complete the Practice on Your Own and Check are ready to move on to the next skill.

COMMON ERRORS

- Students may choose the wrong number as the larger number if they do not have the same number of digits.
- Students may get confused when they put a number containing zeros in the chart.

Students who made more than 3 errors in the Practice on Your Own, or who were not successful in the Check section, may benefit from the Alternative Teaching Strategy on the next page.
You may wish to have students work in pairs. Give each set of students a pair of numbers such as 4,586 and 4,568. Have students label the number line according to the numbers they are given.

Partners each place a dot on the number line to show where each number is located.

Ask: Which number is the farthest to the right? (4,586)

4,586 is to the right of 4,568, so it is greater than 4,568.

Ask: Which symbol would you use to compare 4,586 and 4,568? (>)

Ask: Which number is the farthest to the left? (4,568)

4,568 is to the left of 4,586, so it is less than 4,586.

Ask: Which symbol would you use to compare 4,568 and 4,586? (<)

Repeat the activity several times with different numbers including numbers that are equal. Point out that the inequality symbol always opens to the larger number.

When students show an understanding of the comparing process, give larger numbers to compare.
**Compare Whole Numbers**

Use place values to compare the numbers 34,518,763 and 34,603,845. To compare numbers, you must determine which number is greater.

<table>
<thead>
<tr>
<th>MILLIONS</th>
<th>THOUSANDS</th>
<th>ONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hundreds</td>
<td>Tens</td>
<td>Ones</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

**Step 1**
Start with the first place on the left. Compare the digits.

34,518,763

3 = 3

34,603,845

They are the same number.

**Step 2**
Compare the next place, the millions.

34,518,763

4 = 4

34,603,845

They are the same.

**Step 3**
Continue comparing digits until two are different.

34,518,763

5 < 6

34,603,845

Five hundred thousands are less than six hundred thousands. So, 34,518,763 < 34,603,845.

---

**Try These**

Compare. Write <, >, or = for each.

1. 16,034 _____ 16,134
   Place value to compare:
   ____________________________

2. 458,764 _____ 45,976
   Place value to compare:
   ____________________________

3. 42,245,589 _____ 42,245,598
   Place value to compare:
   ____________________________

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Practice on Your Own

Compare 684,582 and 648,632.

Place each number in the place value chart.
Start on the left.
Both numbers have six hundred thousands, so look to the next place to the right.
The numbers are different, so compare them.
8 > 4, so 684,582 > 648,632.

Compare. Write <, >, or = for each.

1. \( \text{6,125} \quad \underline{<} \quad \text{6,215} \)
   Place value to compare: 

2. \( \text{65,851} \quad \underline{<} \quad \text{67,264} \)
   Place value to compare: 

3. \( \text{5,648,602} \quad \underline{<} \quad \text{600,687} \)
   Place value to compare: 

4. \( \text{725,438,900} \quad \underline{<} \quad \text{725,428,901} \)
   Place value to compare: 

Find all of the digits that can replace the missing digits to make each statement true.

5. \( 8 \underline{\text{□}} \text{,598} < \text{864,689} \)

6. \( \text{496,} \underline{\text{□}} \text{56,200} > \text{496,745,310} \)

Find all of the digits that can replace the missing digits to make each statement true.

7. \( \text{3,548} \quad \underline{<} \quad \text{3,548} \)

8. \( \text{266,148} \quad \underline{<} \quad \text{26,418} \)

9. \( \text{6,400,512} \quad \underline{<} \quad \text{6,401,496} \)

10. \( \text{946,548,620} \quad \underline{<} \quad \text{946,548,619} \)
Begin by directing students’ attention to the numbers to be ordered. Point out that there is one 4-digit number, and there are three 3-digit numbers. Have students note that the digit in the hundreds place for all three 3-digit numbers is 4.

For Step 1, explain how the numbers are arranged under place-value labels so that the digits in each place-value position can be easily compared. Then ask: How many numbers have a digit in the thousands place? (one) Which number? (1,650) Point out that since it is the only 4-digit number, it is the greatest.

Proceed to Step 2 and have students compare the digits in the hundreds place. Ask: Since the digits are all the same, what digits should you compare next? (digits in the tens place)

In Step 3, point out that because two of the numbers have a 7 in the tens place, they both are greater than 438. Ask: Then which number is the least? (438)

Continue to Step 4. Ask: Which number has the greater digit in the ones place? (476) So, which number is greater? (476)

Have students say the numbers in order from least to greatest and greatest to least.

TRY THESE In Exercises 1–3 students order 3-digit numbers and then 3- and 4-digit numbers.

• Exercises 1–2 Order 3-digit numbers.
• Exercise 3 Order 3- and 4-digit numbers.

PRACTICE ON YOUR OWN Review the example at the top of the page. Focus on the place-value labels. Ask students to explain how they use place value to order numbers.

CHECK Determine if students know how to align and compare the digits in each place to order the numbers from least to greatest. Success is indicated by 4 out of 4 correct responses.

Students who successfully complete the Practice on Your Own and Check are ready to move to the next skill.

COMMON ERRORS

• Students may compare digits from right to left instead of from left to right.

Students who made more than 2 errors in the Practice on Your Own or who were not successful in the Check section, may benefit from the Alternative Teaching Strategy on the next page.
Alternative Teaching Strategy

Use Models to Order Numbers

OBJECTIVE Order numbers using base-ten blocks as models

MATERIALS base-ten blocks

Have students work in pairs. Ask each partner to model one of the numbers being compared.

Display the numbers 236 and 218. Have the partners use hundreds, tens, and ones to model and order the numbers.

236

218

Ask: How many hundreds did you use to show 236? (2) How many hundreds did you use to show 218? (2)

Can you tell from comparing the hundreds which number is greater? (No.) Why not? (The hundreds are the same.)

Ask: How many tens did you use to show 236? (3) How many tens did you use to show 218? (1)

Ask: Can you tell from the tens which number is greater? (yes, 236.) How do you know? (3 tens is greater than 1 ten, so 236 is greater than 218.)

Ask: Which number is the greatest? (236)

Repeat the activity using the numbers, such as 423 and 427, in which the digits in both the hundreds and tens places are the same. Ask similar questions as students order the numbers.

Then present three numbers to order. 376, 374, 368

Suggest to students that they order the numbers by aligning the base-ten blocks for each number one above the other.

Then have students record the numbers from least to greatest (368, 374, 376) and greatest to least. (376, 374, 368)

It may help to remind students that the least number is the number that is less than all the others. The greatest number is the number that is greater than all the others.

Now include a 4-digit number and repeat the activity several times.

When students show an understanding of ordering numbers, have them order 3- and 4-digit numbers without using base-ten blocks.
Order Whole Numbers

Order the numbers from least to greatest: 472; 1,650; 438; and 476, and from greatest to least.

**Step 1** Align the digits.

<table>
<thead>
<tr>
<th>Th</th>
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<tbody>
<tr>
<td>4</td>
<td>7</td>
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<tr>
<td>1</td>
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Since 1,650 has the most places, it is the greatest number.

**Step 2** Compare hundreds.

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<td>4</td>
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</table>

The digits are the same.

**Step 3** Compare tens.

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<tr>
<th>Th</th>
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</table>

Since 3 < 7, 438 is the least number.

**Step 4** Compare ones.

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<tr>
<td>4</td>
<td>7</td>
<td>6</td>
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</tbody>
</table>

Since 2 < 6, 472 < 476.

So, the order from least to greatest is: 438, 472, 476, 1,650.
The order from greatest to least is: 1,650, 476, 472, 438.

**Try These**

1. Order the numbers from least to greatest: 258; 379; 251

<table>
<thead>
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<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>8</td>
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<tr>
<td>3</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>1</td>
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</tbody>
</table>

   greatest number _______  
   least number _______

   Order ________________

2. Order the numbers from greatest to least: 586; 514; 591

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<td>4</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>1</td>
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</table>

   greatest number _______  
   least number _______

   Order ________________

3. Order the numbers from least to greatest: 635; 1,204; 499; 501

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<tr>
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<tbody>
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<tr>
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<td>4</td>
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<tr>
<td>4</td>
<td>9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>1</td>
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</tr>
</tbody>
</table>

   greatest number _______  
   least number _______

   Order ________________

Go to the next side.
Practice on Your Own

Order the numbers from greatest to least: 436; 1,058; 375; and 497.

Think: Align the digits. Compress the numbers in each place starting with the greatest place.

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<thead>
<tr>
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<tr>
<td>4</td>
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</tr>
</tbody>
</table>

The greatest number is 1,058. The least number is 375.

The order is 1,058, 497, 436, and 375.

Order the numbers from least to greatest.

1. 175, 182, 115

   H T O
   1 7 5 greatest number ________
   1 8 2
   1 1 5 least number ________

   Order _______________________

2. 867; 1,025; 876

   Th H T O
   8 6 7 greatest number ________
   1, 0 2 5
   8 7 6 least number ________

   Order _______________________

Order the numbers from greatest to least.

3. 279, 251, 62, 352

   279 greatest number ________
   251
   62
   352 least number ________

   Order _______________________

4. 2,345; 507; 624; 2,405

   2,345 greatest number ________
   507
   624
   2,405 least number ________

   Order _______________________

Check

Order the numbers from greatest to least.

5. 584; 3,896; 3,215

   Order _______________________

6. 5,109; 4,116; 4,876; 823

   Order _______________________

Order the numbers from least to greatest.

7. 348, 327, 316

   Order _______________________

8. 835; 1,218; 1,409; 1,401

   Order _______________________

Holt McDougal Mathematics

Name ____________________________  Skill ____________________________
Using Skill 61

OBJECTIVE Graph numbers on a number line

On Skill 61, draw students’ attention to the different number lines. Be sure students know how to read a number line. Direct students’ attention to both number lines. Ask: What number is in the middle of both number lines? (0)

Guide students to move their fingers to the right of zero. Ask: What type of numbers are located to the right of zero? (positive)

Repeat the experience for numbers to the left of zero. Ask: What type of numbers do you see to the left of zero? (negative)

Help students realize that the graph of a number is the point associated with that number on a number line.

Ask: How are the two number lines different from each other? (One number line has an interval of one and the other number line has an interval of two.) How are the number lines alike? (Both have intervals, and zero is in the middle.)

Guide students to recognize that the sign of any number determines the direction from zero.

PRACTICE ON YOUR OWN Review the example at the top of the page. Ask students to state the direction from zero for the graph of a given number.

CHECK Determine if students can graph a number correctly on a number line.

Success is indicated by 3 out of 4 correct responses.

Students who successfully complete the Practice on Your Own and Check are ready to move on to the next skill.

COMMON ERRORS

- Students might graph numbers on the incorrect side of zero.
- Students might count units from zero incorrectly.

Students who made more than 4 errors in the Practice on Your Own, or who were not successful in the Check section, may benefit from the Alternative Teaching Strategy on the next page.
OBJECTIVE Locate points on a number line

Prepare on index cards instructions for students to locate points on a number line. For example,

- locate –3 on the number line
- locate the opposite of 4 on the number line,
- name the point that is 5 units to the left of zero
- locate positive 2

Present students with a number line such as the one below:

```
-6 -4 -2  0  2  4  6
```

Remind students that all numbers to the left of zero name negative numbers and include negative signs (−). All numbers to the right of zero name positive numbers and may or may not include positive signs (+).

Remind students that the number zero has no sign, because it is neither positive nor negative.

It may help some students to put their fingers on the number line, and actually move their fingers to the left or right of zero to locate points. Encourage students to say “positive” as they move to the right of zero, and “negative” as they move to the left of zero.

Next, ask volunteers to draw from the stack of prepared index cards. After reading aloud, encourage students to verbalize or explain the movement on the number line.

As students become more comfortable with locating numbers on a number line, the number line can be extended to include a wider range of numbers and the difficulty level of the instructions on the index cards can be increased.

MATERIALS index cards, number line

Alternative Teaching Strategy

Plotting on a Number Line

15 Minutes

Optional

-6 -4 -2  0  2  4  6

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Holt McDougal Mathematics
Locate Points on a Number Line

Graph numbers on a number line.

Graph \( -2 \) and \( +3 \) on the number line.

**Step 1**
-2 is a negative number.
So start at 0. Count 2 units to the left.
Mark the point on the number line.

**Step 2**
3 is a positive number.
So start at 0. Count 3 units to the right.
Mark the point on the number line.

Graph \( -4, 2, -12 \) and 10 on the number line.

**Step 1**
-4 is a negative number.
So start at 0. Each mark on the number line represents 2 so move 2 spaces to the left.
Mark the point on the number line.

**Step 2**
2 is a positive number.
So start at 0. Count 1 space to the right.
Mark the point on the number line.

The intervals on the number line are in decimal form. So, you can write an equivalent decimal to graph a fraction.

**Step 3**
-10 is a negative number
So start at 0. Count 5 spaces to the left.
Mark the point on the number line.

**Step 4**
10 is a positive number.
So start at 0. Count 5 spaces to the right.
Mark the point on the number line.
**Think:**
The sign in front of a number tells you the direction from zero on the number line.

-7 is a negative number.

Start at 0. Move to the ______.  
Mark the point.

1 is a ______ number.

Start at ___. Move to the ______.  
Mark the point.

-10 is a ______ number.

Start at ___. Move to the ______.  
Mark the point.

4 is a positive number.

Move to the ______.  
Mark the point.

-1 is a ______ number.

Move to the ______.  
Mark the point.

2 is a ______ number.

Move to the ______.  
Mark the point.

-5 is a ______ number.

Move to the ______.  
Mark the point.

**Check**

Graph each number on the number line.

8. 2  
9. -3  
10. 0.5  
11. -2