

Compare Whole Numbers



Dear Family,

This week your child is learning how to compare whole numbers.

Your child can use a place-value chart to compare multi-digit numbers. For example, this place-value chart can be used to compare 39,521 and 39,743.

Ten Thousands	Thousands	Hundreds	Tens	Ones
3	9	5	2	1
3	9	7	4	3

To compare the two numbers in the place-value chart above, look down each column in the chart. Start at the left column and compare the digits in each column.

The ten-thousands digits are the same.

The thousands digits are the same.

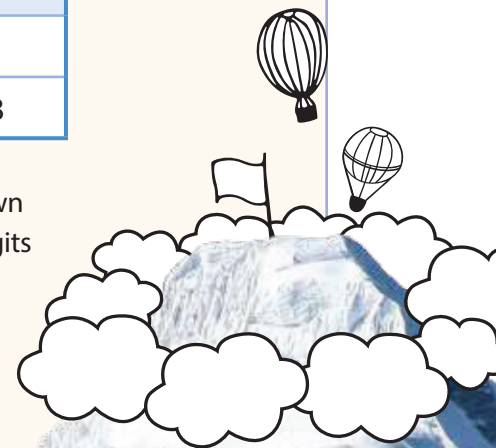
The hundreds digits are different.

Because 5 hundreds is less than 7 hundreds, the top number, 39,521, is less than the bottom number, 39,743.

Your child is learning to use a symbol to write the comparison:

$$39,521 < 39,743$$

Invite your child to share what he or she knows about comparing whole numbers by doing the following activity together.



ACTIVITY COMPARE WHOLE NUMBERS

Do this activity with your child to compare whole numbers.

Famous mountains around the world have the following heights:

Mount Kilimanjaro: 19,341 feet

K2 (mountain in Asia): 28,251 feet

Mount Everest: 29,035 feet

Denali: 20,310 feet

- Have your child read aloud the mountain heights.
- Ask your child to compare the heights. Encourage your child to use comparison words and symbols as shown in the table below.

symbol	<	>	=
meaning	is less than	is greater than	is equal to

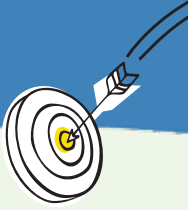
For example, your child could say: *The height of Mount Everest is greater than the height of Denali.*

Or he or she could write $29,035 > 20,310$.

Look for other real-life opportunities to compare numbers with your child.



Explore Comparing Whole Numbers



Learning Target

- Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

SMP 1, 2, 3, 4, 5, 6, 8

You have already learned how to compare numbers up to 999. Now you will compare numbers in the thousands. Use what you know to try to solve the problem below.

Students in Mrs. Allen's math class are divided into teams. Each team collects points by doing projects and playing math games.

Team A has 1,347 points. Team B has 1,295 points.


Which team has more points?



TRY IT



Math Toolkit

- base-ten blocks
- hundred thousands place-value charts
- number lines 
- index cards



DISCUSS IT

Ask your partner: How did you get started?

Tell your partner: I knew ... so I ...

CONNECT IT

1 LOOK BACK

Which team has more points? Explain which place value shows the team that has more points.

2 LOOK AHEAD

You can use place value to compare numbers. Start with the greatest place-value position. Sometimes numbers you compare have the same number of digits. Sometimes they have different numbers of digits.

a. Circle the box with the greater number of staples.



b. What place value helps you tell which box has more staples? Explain.

c. Circle the greater price.



d. What place value helps you tell which price is greater? Explain.

3 REFLECT

Was it easier to compare the number of staples or the two prices? Explain.


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Prepare for Comparing Whole Numbers

- 1 Think about what you know about comparing. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

What Is It?	What I Know About It	
 compare		
Examples	Examples	Examples

- 2 Circle the lesser price. Explain how using place value helps you know this is the lesser price.

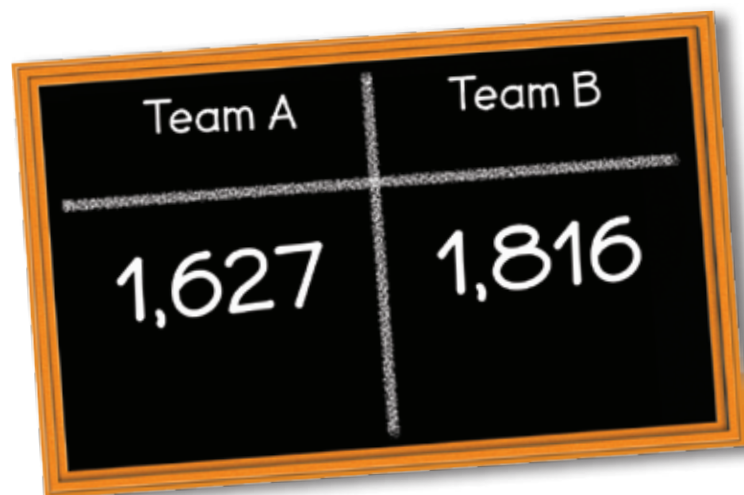


- 3 Solve the problem. Show your work.

Two teams are competing in a trivia game. Team A has 1,627 points.

Team B has 1,816 points.

Which team has more points?



Team A	Team B
1,627	1,816

Solution

- 4 Check your answer. Show your work.

Develop Comparing Multi-Digit Numbers


Read and try to solve the problem below.

There were 23,643 fans at a football game last week and 23,987 fans at a football game this week. Which game had fewer fans?

TRY IT



Math Toolkit

- base-ten blocks
- hundred thousands place-value charts
- number lines 
- index cards



DISCUSS IT

Ask your partner: Do you agree with me? Why or why not?

Tell your partner: I started by ...

Explore different ways to understand how to compare multi-digit numbers.

There were 23,643 fans at a football game last week and 23,987 fans at a football game this week. Which game had fewer fans?

MODEL IT

You can use a place-value chart to compare multi-digit numbers.

When the numbers are in a place-value chart, it is easy to look down the columns and compare the digits. Start at the greatest place value.

Ten Thousands	Thousands	Hundreds	Tens	Ones
2	3	6	4	3
2	3	9	8	7

The ten-thousands digits are the same. The thousands digits are the same. The hundreds digits are different. So, compare the digits in the hundreds place.

$$6 \text{ hundreds} < 9 \text{ hundreds}$$

MODEL IT

You can break apart numbers by place value to compare multi-digit numbers.

$$23,643 = 20,000 + 3,000 + 600 + 40 + 3$$

$$23,987 = 20,000 + 3,000 + 900 + 80 + 7$$

Compare the numbers place by place.
The ten thousands and thousands are the same.
The hundreds are different.

$$600 < 900$$



CONNECT IT

Now you will use the problem from the previous page to help you understand how to use place value to compare multi-digit numbers.

- 1 Write the numbers 23,643 and 23,987 so that they line up by place value. Explain how to line them up.

- 2 In what place-value position do you begin comparing the two numbers?

- 3 What is the first place in which the numbers are different?
- 4 Explain how to compare the numbers. Then write the comparison using $>$ or $<$. Tell which game had fewer fans.

5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for comparing multi-digit numbers? Explain.

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APPLY IT

Use what you just learned to solve these problems.

- 6 There are two baby macaw parrots at a zoo. Zeke has a mass of 1,582 grams, and Tao has a mass of 819 grams. Which bird has a greater mass? Use $>$, $<$, or $=$ to write a comparison. Show your work.



Solution

- 7 Write the symbol that makes the statement true. Show your work.

$$91,146 \bigcirc 908,043$$

- 8 Which statements correctly compare two numbers?
- (A) $37,046 > 37,064$
 - (B) $37,064 < 37,046$
 - (C) $37,046 < 37,064$
 - (D) $37,064 > 37,046$
 - (E) $37,064 = 37,046$

Practice Comparing Multi-Digit Numbers

Study the Example showing one way to compare multi-digit numbers.
Then solve problems 1–6.

EXAMPLE

Cara flies an airplane 30,825 feet high on one flight. She flies 30,750 feet high on another flight. Compare how high Cara flies on the two flights.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
	3	0	8	2	5
	3	0	7	5	0

The ten-thousands and thousands digits are the same.

The hundreds digits are different. **8 hundreds** > **7 hundreds**

$$30,825 > 30,750$$

- 1 In a certain year, 50,266 runners finished the New York City Marathon and 38,879 runners finished the Chicago Marathon. Compare these numbers by lining up the place values. Explain which number is greater.

- 2 Explain how to compare the two numbers shown in expanded form.

$$60,000 + 2,000 + 500 + 80 + 3$$

$$60,000 + 7,000 + 200 + 40 + 5$$

3 Write the symbol ($>$, $<$, $=$) that makes each statement true.

a. 8,035 894

b. 62,999 63,000

c. 142,073 143,750

d. 501,348 500,348

4 Walnut Elementary raises \$1,950 for new technology in their school. Grove Elementary raises \$1,890. Which school raises more money? Explain how you know.

5 Select all the numbers that are greater than 98,765.

(A) 100,100

(B) 89,975

(C) 99,132

(D) 987,650

(E) 87,956

6 Select $>$, $<$, or $=$ to complete a true comparison for each pair of numbers.

	$>$	$<$	$=$
33,003 <input type="text"/> 33,030	(A)	(B)	(C)
524,980 <input type="text"/> 52,498	(D)	(E)	(F)
279,615 <input type="text"/> 279,615	(G)	(H)	(I)
100,000 <input type="text"/> 99,999	(J)	(K)	(L)

Refine Comparing Whole Numbers

Complete the Example below. Then solve problems 1–9.

EXAMPLE

Millennium Force and Formula Rossa are two famous roller coasters. Millennium Force is 6,595 feet long and Formula Rossa is 6,562 feet long. Which roller coaster is shorter? Use $>$, $<$, or $=$ to write a comparison.

Look at how you could show your work using a place-value chart.

Thousands	Hundreds	Tens	Ones
6	5	9	5
6	5	6	2

Solution

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The student used a place-value chart to compare the digits in the two numbers.



PAIR/SHARE

How else could you solve this problem?

APPLY IT

- 1 A tile factory shipped 342,085 ceramic tiles in 2016. In 2017, it shipped 342,805 tiles. In which year did the tile factory ship more tiles? Use $>$, $<$, or $=$ to write a comparison. Show your work.

Solution

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What is the first place in which the digits are different?

PAIR/SHARE

How did you and your partner decide where to start comparing?

- 2 Val’s Video Games sells 11,806 new games and 10,899 used games from May to July. Does Val’s Video Games sell more new games or more used games? Use $>$, $<$, or $=$ to write a comparison. Show your work.

I think the comparison can be shown in different ways.



Solution

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PAIR/SHARE

What are some different ways to state this comparison?

- 3 Kara has twenty-four thousand, five hundred sixty stickers in her album. Raul has $20,000 + 4,000 + 500 + 60$ stickers in his collection.

Which statement correctly compares Kara’s and Raul’s stickers? Who has more stickers?

- Ⓐ $2,456 < 24,560$; Raul has more stickers.
- Ⓑ $24,560 > 24,506$; Kara has more stickers.
- Ⓒ $24,560 < 24,650$; Raul has more stickers.
- Ⓓ $24,560 = 24,560$; They each have the same number.

Anna chose Ⓐ as the correct answer. How did she get that answer?

To compare the two numbers, I can write them both in standard form.

PAIR/SHARE

Does Anna’s answer make sense?

- 4 Dalton has 1,168 marbles, Juan has 1,079 marbles, Gilbert has 967 marbles, and Lydia has 199 marbles. Who has the greatest number of marbles?
- (A) Dalton
 - (B) Juan
 - (C) Gilbert
 - (D) Lydia

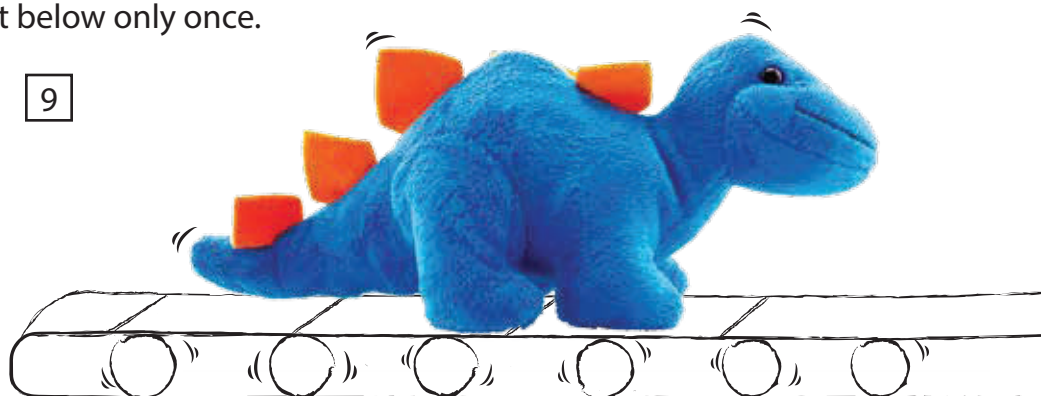
- 5 A company makes 189,909 stuffed animals one year. The company makes 198,909 stuffed animals the next year. Which statements correctly compare the numbers of stuffed animals the company makes?
- (A) $189,909 > 198,909$
 - (B) $198,909 < 189,909$
 - (C) $189,909 < 198,909$
 - (D) $198,909 = 189,909$
 - (E) $198,909 > 189,909$

- 6 Mr. Hunter writes the following comparison on the board:

$$96,341 < \square\square, \square\square\square$$

Use the digits in the tiles below to find a number that makes the comparison true. Fill in the boxes in the comparison using each digit below only once.

2
3
5
6
9



- 7 Selena organizes her music files into four online albums. Album A has one thousand eleven songs, Album B has $1,000 + 100 + 10$ songs, Album C has 1,101 songs, and Album D has eleven hundred songs.

Write the number of songs in the four albums in the place-value chart. Which album has the most songs?

	Thousands	Hundreds	Tens	Ones
Album A				
Album B				
Album C				
Album D				

Solution

- 8 North Elementary School collects 14,128 cans of soup during a food drive. South Elementary School collects 14,210 cans. Which school collects more cans? Use $>$, $<$, or $=$ to write a comparison. Show your work.



Solution

9 MATH JOURNAL

Choose 2 six-digit numbers. Use symbols and words to write comparison statements. Explain how you know the comparisons are correct.

 **SELF CHECK** Go back to the Unit 1 Opener and see what you can check off.