

# Lesson 1

READ, WRITE, AND COMPARE WHOLE NUMBERS 3.NSO.1.1, 3.NSO.1.3

## INTRODUCTION

### Real-World Connection

Fatima and her family are on a whale-watching outing. They see two whales right away! The guide says one is a Hector's beaked whale that weighs about two thousand, twenty pounds and the other is a strap-toothed whale that weighs about three thousand, three hundred pounds. Fatima wants to jot down the weight of the two whales using numbers instead of words. How does she write those numbers in words? She also wants to compare the weights of the whales. Let's practice the skills in the **Guided Instruction** and **Independent Practice** and, at the end of the lesson, see how Fatima compares and writes the numbers!

### What I Am Going to Learn

- How to find read and write whole numbers up to 10,000
- How to plot, order, and compare numbers up to 10,000

### What I May Already Know 2.NSO.1.1, 2.NSO.1.3

- I know how to read and write up to 1,000.
- I know how to plot, order, and compare numbers up to 1,000.

#### WORDS TO KNOW

place value

expanded form

compare

greater than ( $>$ )

less than ( $<$ )

equal ( $=$ )



## Vocabulary in Action

**Place value** is the value of each digit in a number. Understanding place value helps you read and write large numbers.

- A place-value chart shows the value of each digit in a number.
- The places in a five-digit number are ones, tens, hundreds, thousands, and ten thousands.

Ten Thousands	Thousands	Hundreds	Tens	Ones

- Place value helps you write numbers in **expanded form**. Expanded form shows the value of each digit in a large number. It is written as a sum of its parts.

Think of the number 1,251. In expanded form, it looks like this.

$$1,000 + 200 + 50 + 1$$

When you write it in words, looks like this.

One thousand, two hundred fifty-one.

You can use a number line to **compare** numbers. When you compare numbers, you are finding which number has the highest number in its place values.

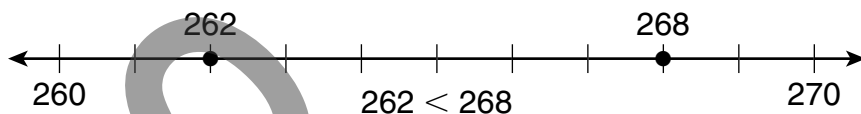
- A number that is **greater than** ( $>$ ) another number means it is higher in value or further right on a number line.
- A number that is **less than** ( $<$ ) another number is smaller or further left on a number line.
- A number that is **equal** ( $=$ ) to another number is at the same spot on a number line.

### TIPS AND HINTS

Remember to read number sentences from left to right. The greater than symbol will always open to the left ( $>$ ). The less than symbol will always have the smaller end on the left. ( $<$ )

**EXAMPLE**

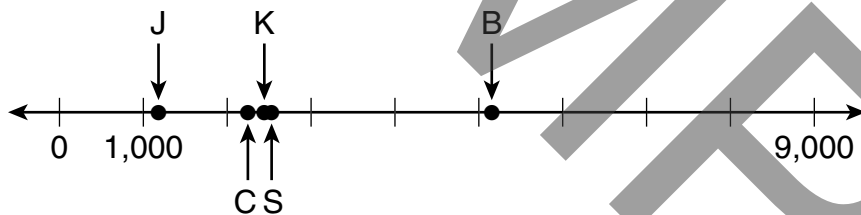
To compare the numbers 262 and 268, plot both numbers on a number line and see where they are compared to one another.



Since 262 is further left on the number line than 268, it is less than ( $<$ ) 268.

**EXAMPLE**

Carly, Jorge, Sampson, Kinya, and Bobby collect cards for a trading card game. Carly has 2,347 cards. Jorge has one thousand, forty-eight cards. Sampson has  $2000 + 400 + 2$  cards. Kinya has 2,400 cards. Bobby has 5,064 cards. Order the friends based on how many cards they own from least to greatest.



- Since  $1,048 < 2,347$  and no other number is less than 2,000, Jorge should be first in the list.
- Carly's  $2,347 > 1,048$  but  $2,347 < 2,400$ . Since no other number is less than 2,400, Carly is next on the list.
- $2,400 < 2,402$  and as mentioned above,  $2,400 > 2,347$ , so Kinya is ordered after Carly.
- Sampson's total number of cards is greater than Kinya but  $2,402 < 5,064$  making him next in the list.
- Bobby has 5,064 cards which is greater than Sampson, allowing him to be the last name in the ordered list from least to greatest.

So, the friends should be ordered Jorge, Carly, Kinya, Sampson, and Bobby.

**TURN AND TALK**

If Ginger joins the group with 4,959 cards, where do you think she would be placed?

### ▶ THINK ABOUT IT

Think about the digit 2. It can have different values.

In the numbers 2 and 32, 2 has a value of 2 ones or 2.

In the number 23, the 2 has a value of 2 tens or 20.

In the number 237, the 2 has a value of 2 hundreds or 200.

In the number 2,370, the 2 has a value of 2 thousands or 2,000.

### EXAMPLE

There are 6,193 seats at Wild Cats baseball park. What is the value of the 1 in 6,193?

Use the place-value chart below to help you understand the value of each digit.

Thousands	Hundreds	Tens	Ones
6	1	9	3

There is one digit in each box.

The value of 1 is in the hundreds place.

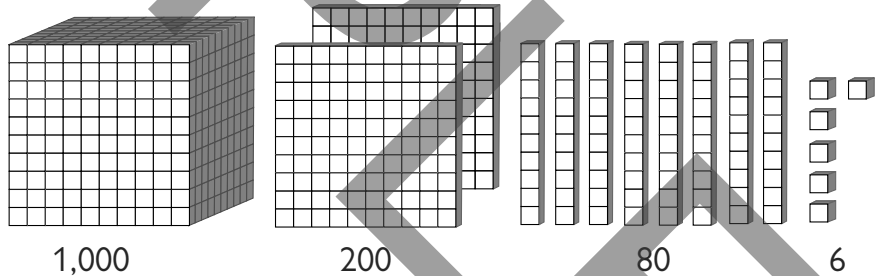
6,193 written in words is six thousand, one hundred ninety-three.

6,193 written in expanded form is  $6,000 + 100 + 90 + 3$ .

### EXAMPLE

Carmen's family drove from Staten Island to Myrtle Beach. Then they drove back to Staten Island.

They travelled 1,286 miles. How can you write the number in expanded form?



Write the number in expanded form as a sum of its parts.

$$1,000 + 200 + 80 + 6$$

Write the number in word form.

One thousand, two hundred eighty-six.

# GUIDED INSTRUCTION

1. Mr. Harper has some paper in his office. He has a box of 1,000 sheets, another box of 500 sheets, a stack of 30 sheets, and 2 sheets on his desk. How many sheets of paper does Mr. Harper have?

**Step One** Write this number in expanded form.

+  +  +

**Step Two** Write the number in the place-value chart.

Thousands	Hundreds	Tens	Ones
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Step Three** Solve.

Mr. Harper has  sheets of paper.

Now, write this number in word form.

## TIPS AND HINTS

When you are writing numbers larger than one thousand, using a comma to separate the thousands from the hundreds makes it easier to quickly read a number.

2. Pramod is travelling 7,786 miles from New York City to Mumbai, India to visit his family. Which shows this number written as words?

- (A) seven hundred eighty-six
- (B) seven thousand seven hundred eighty
- (C) seven thousand, seven hundred eighty-six
- (D) seven hundred sixty-eight

## THINK ABOUT IT

When you write a number in words, you should write it the same way you would say the number when looking at the number itself.

3. Maria used a place-value chart to write a number. Which choice shows a correct sentence?

Thousands	Hundreds	Tens	Ones
8	3	0	6

- Ⓐ  $800 + 30 + 6 >$  the number in the chart.  
 Ⓑ  $800 + 300 + 6 =$  the number in the chart.  
 Ⓒ  $8,000 + 30 + 6 >$  the number in the chart.  
 Ⓓ  $8,000 + 300 + 6 =$  the number in the chart.

► TIPS AND HINTS

Remember, when the value of a digit is 0, it represents 0 of that place value.

4. In the past 3 months, Charity's car has driven 3,580 miles. In the same time, Gwen's truck traveled three thousand five hundred seventy-one miles. Put the two numbers in the place-value charts and then use the proper symbol to compare the two numbers.

Thousands	Hundreds	Tens	Ones

3,580 ○ three thousand five hundred seventy-one

How Am I Doing?

What questions do you have?

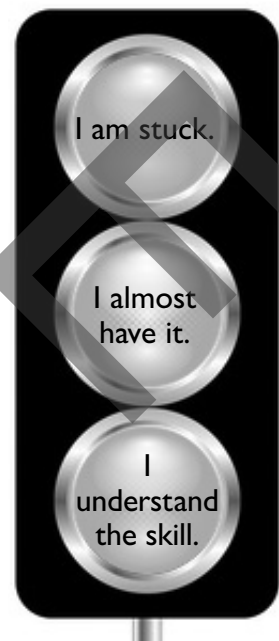
Why is it important to understand place value?

How could you use your knowledge of comparing numbers in real life?

◀ TURN AND TALK

With a partner, play a matching game. You will need markers and index cards. Work together to write a 4-digit number on each of 10 index cards. Then write the same numbers in word form or expanded form on different cards. Now put the 20 cards face down in rows. Take turns. Turn over two cards to find a match—a number and the word form or expanded form of the same number. If two cards match, keep the cards. If not, turn the cards face down. Keep playing until all the cards have been taken. Trade cards with another pair and play again.

Color in the traffic signal that shows how you are doing with the skill.



# INDEPENDENT PRACTICE

Answer the questions.

## TIPS AND HINTS

In your head, picture a place-value chart with the four digits of 1,572 in order across the chart.

## TIPS AND HINTS

Create a quick place-value chart by writing Th, H, Te, and O at the top of the first answer and drawing column lines from the first answer through the last answer.

- 1.** Arturo lives in New York City and his grandfather lives in Austin, TX. Arturo travels 1,572 miles to visit his grandfather. Which of the following shows 1,572?

- (A)  $1,000 + 700 + 50 + 2$   
 (B)  $1,000 + 500 + 70 + 2$   
 (C)  $1,000 + 500 + 7 + 2$   
 (D)  $1,000 + 500 + 60 + 2$

- 2.** Joseph's lucky number has a 5 in the thousands place and a 1 in the tens place. Which of these could be his lucky number?

- (A) 1,574  
 (B) 2,517  
 (C) 5,013  
 (D) 5,108

- 3.** Nina's older sister was born in 2002. Nina adds fifty to this year to find out when her sister will be fifty years old. In what year will Nina's sister be fifty years old? Write the year in expanded form.

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4. Yolanda used a place-value chart to write a number.

Thousands	Hundreds	Tens	Ones
3	5	1	2

Which of the following is another way to write this number?

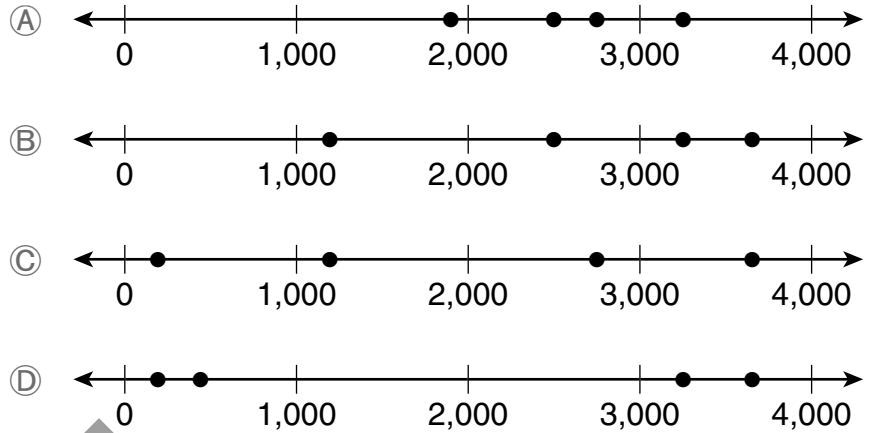
- (A)  $300 + 50 + 10 + 2$   
(B)  $3,000 + 500 + 10 + 2$   
(C)  $3,000 + 500 + 2$   
(D)  $3,000 + 500 + 20 + 1$
5. Which statements correctly compare two numbers?
- (A)  $7,041 < 7,014$   
(B)  $7,014 > 7,041$   
(C)  $7,041 > 7,014$   
(D)  $7,014 < 7,041$   
(E)  $7,041 = 7,014$
6. Emma ran five thousand feet. Jose ran  $(900 + 7)$  feet. Emma writes the total number of feet the two ran in written form. Which of the following shows the number Emma writes?
- (A) five thousand ninety-seven  
(B) five thousand nine hundred seventy  
(C) nine thousand five hundred seven  
(D) five thousand nine hundred seven

WORK SPACE

WORK SPACE

S  
A  
M  
P  
L  
E

7. Which number line shows the numbers 2,500, 3,250, 2,750, and 1,900 plotted correctly?



8. This question has **two** parts.

**Part A.** Marcelo and his friends collect pennies. Marcelo has two thousand pennies. Viriato has one thousand nine hundred pennies. Sabrina has six pennies. Plot the numbers on the number line.



**Part B.** Explain how you found where to plot the numbers in Part A.

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9. Match each number in the rows by the number in the columns to show the order of numbers from least to greatest.

	<b>3,053</b>	<b>two thousand, five hundred forty-two</b>	<b>(3000 + 700 + 20 + 9)</b>
<b>1<sup>st</sup></b>	(A)	(B)	(C)
<b>2<sup>nd</sup></b>	(D)	(E)	(F)
<b>3<sup>rd</sup></b>	(G)	(H)	(I)

10. Fill in the bubble that correctly completes the comparison.

1,249 

(A) >
(B) <
(C) =

 1,244



## EXIT TICKET

3.NSO.1.1, 3.NSO.1.3

Now that you understand writing four-digit numbers, let's revisit the Real-World Connection.

Fatima and her family are on a whale-watching outing. They see two whales right away! The guide says one is a Hector's beaked whale that weighs about two-thousand twenty pounds and the other is a strap-toothed whale that weighs about three thousand three hundred pounds. How can Fatima write these weights using numbers instead of words? Draw a place-value chart and show your work.



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Compare the two weights using  $<$ ,  $>$ , or  $=$ .

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# TEACHER NOTES

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## REAL-WORLD GOAL FOR STUDENTS

- Students will use place value to write whole numbers up to 10,000 in word form.
- Students will express whole numbers up to 10,000 in expanded form.
- Students will compare whole numbers up to 10,000 using greater than, less than, and equal to symbols.

## TIPS FOR THE STRUGGLING LEARNER

- Struggling students may have trouble using the comparison symbols accurately to show a whole number is greater than or less than another number. Explain to students that the greater-than symbol “ $>$ ” opens to the left since number sentences should be read from left to right.
- Misunderstanding place value can cause problems when dealing with larger numbers. Have students count from 1 to 9. Discuss that these numbers, along with 0, make up the tens place value numbers. Repeat counting by 10 from 10 to 100 and discuss that these numbers, along with 0, make up the tens place value numbers.

## TIPS FOR THE ENGLISH LEARNER

- Point out that the word “greater” in “greater than” means “bigger”. The word “less” in “less than” means “smaller”. The word “equal” means “the same amount”.
- Discuss that the word “place” can mean “a certain spot or location,” Discuss that “value” means “worth.” Clarify that the term “place value” shows how big a number is.

## ACTIVITIES FOR THE ADVANCED LEARNER

- Give students four random digits. Ask them to each create the largest possible number with the given digits and then write the created number in expanded form. Repeat, asking students to create the smallest possible number.
- Have students write four different numbers above 1,000 and let their partners place them in order from least to greatest.