

Name \_\_\_\_\_

# Round Numbers

**Essential Question** How can you round numbers?



Number and Operations in Base Ten—4.NBT.A.3

**MATHEMATICAL PRACTICES**  
MP1, MP2, MP5, MP7

## Unlock the Problem Real World

During May 2008, the Mount Rushmore National Monument in South Dakota welcomed 138,202 visitors. A website reported that about 1 hundred thousand people visited the park during that month. Was the estimate reasonable?

- Underline what you are asked to find.
- Circle the information you will use.

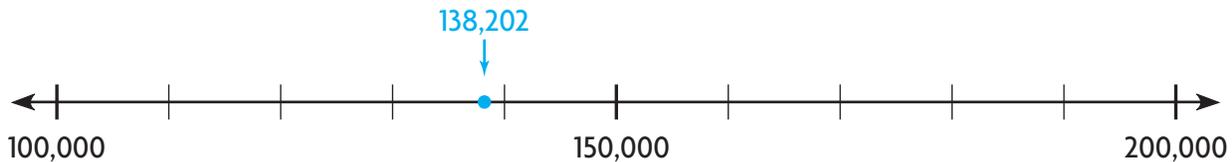
An **estimate** tells you about how many or about how much. It is close to an exact amount. You can **round** a number to find an estimate.

### **One Way** Use a number line.

To round a number to the nearest hundred thousand, find the hundred thousands it is between.

\_\_\_\_\_ < 138,202 < \_\_\_\_\_

Use a number line to see which hundred thousand 138,202 is closest to.



138,202 is closer to \_\_\_\_\_ than \_\_\_\_\_.

So, 1 hundred thousand is a reasonable estimate for 138,202.



**MATHEMATICAL PRACTICES 4**

**Use Models** How can you use a model to round numbers?

1. What number is halfway between 100,000 and 200,000?

\_\_\_\_\_

2. How does knowing where the halfway point is help you find which hundred thousand 138,202 is closest to? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Another Way** Use place value.

Mount Rushmore is located 5,725 feet above sea level. About how high is Mount Rushmore above sea level, to the nearest thousand feet?

To round a number to the nearest thousand, find the thousands it is between.

\_\_\_\_\_ < 5,725 < \_\_\_\_\_

Look at the digit in the place-value position to the right.

5,725  
↑  
**Think:** The digit in the hundreds place is 7.  
So, 5,725 is closer to 6,000 than 5,000.

So, Mount Rushmore is about \_\_\_\_\_ feet above sea level.



**MATHEMATICAL PRACTICES 6**

**Explain** the difference in using a model and using place value when rounding numbers.

3. What number is halfway between 70,000 and 80,000?

\_\_\_\_\_

4. What is 75,000 rounded to the nearest ten thousand? Explain.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Math Idea**

When a number is exactly half way between two rounding numbers, round to the greater number.

**Try This!** Round to the place value of the underlined digit.

**A** 64,999

\_\_\_\_\_

**C** 301,587

\_\_\_\_\_

**B** 850,000

\_\_\_\_\_

**D** 10,832

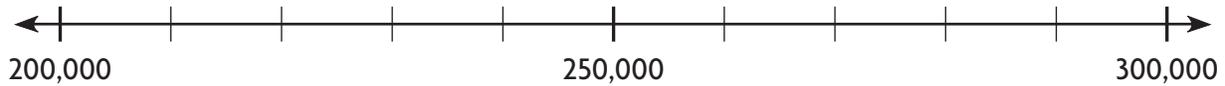
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Name \_\_\_\_\_

## Share and Show



1. Suppose 255,113 people live in a city. Is it reasonable to say that about 300,000 people live in the city? Use the number line to help you solve the problem. Explain.



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Round to the place value of the underlined digit.

2. 934,567

3. 641,267

4. 234,890

5. 347,456

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## On Your Own

6. **GO DEEPER** To the nearest hundred, a factory produced 3,600 jars of applesauce on Thursday and 4,200 jars of apple juice on Friday. To the nearest thousand, how many jars of apple juice did they produce during the two days?

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## Problem Solving • Applications



7. **THINK SMARTER** The number 2,    00 is missing a digit. The number rounded to the nearest thousand is 3,000. List all of the possibilities for the missing digit. Explain your answer.

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8. **GO DEEPER** A male elephant weighs 6,728 pounds. A female elephant weighs 5,843 pounds. To the nearest hundred, what is the total weight of the two elephants?

9. **THINK SMARTER +** About 300,000 people attended a festival. For numbers 9a–9e choose Yes or No to show whether each number could be the exact number of people that attended the festival.

- 9a. 351,213  Yes  No  
 9b. 249,899  Yes  No  
 9c. 252,348  Yes  No  
 9d. 389,001  Yes  No  
 9e. 305,992  Yes  No

## Connect to Science

### Data Gathering

Some scientists count and measure groups of things. Benchmarks can be used to estimate the size of a group or a population. A *benchmark* is a known number of things that helps you understand the size or amount of a different number of things.

Use the benchmark to find a reasonable estimate for the number of coquina shells it would take to fill a jar.

It would take about 5 times the benchmark to fill the jar.

$$100 + 100 + 100 + 100 + 100 = 500$$

The most reasonable estimate for the number of coquina shells it would take to fill the jar is 500 shells.



Benchmark  
100 shells



200; 500;  
or 5,000

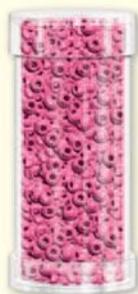
### MATHEMATICAL PRACTICE 1

**Evaluate Reasonableness** Use the benchmark to find a reasonable estimate. Circle the reasonable estimate.

10.



500 beads



1,500; 2,500;  
or 3,500

11.



10,000 blades  
of grass



1,000; 10,000;  
or 100,000

Name \_\_\_\_\_

## Round Numbers



**COMMON CORE STANDARD—4.NBT.A.3**  
Generalize place value understanding for multi-digit whole numbers.

Round to the place value of the underlined digit.

1. 862,840

862,840     860,000  
 ↑  
 less than 5

2. 123,499

\_\_\_\_\_

3. 552,945

\_\_\_\_\_

- Look at the digit to the right. If the digit to the right is *less than* 5, the digit in the rounding place stays the same.
- Change all the digits to the right of the rounding place to zero.

4. 389,422

\_\_\_\_\_

5. 209,767

\_\_\_\_\_

6. 191,306

\_\_\_\_\_

7. 66,098

\_\_\_\_\_

## Problem Solving

Use the table for 8–9.

8. Find the height of Mt. Whitney in the table. Round the height to the nearest thousand feet.

\_\_\_\_\_ feet

9. What is the height of Mt. Bona rounded to the nearest ten thousand feet?

\_\_\_\_\_ feet

Mountain Heights		
Name	State	Height (feet)
Mt. Bona	Alaska	16,500
Mt. Whitney	California	14,494

10.  *Math* Jessie says to round 763,400 to the nearest ten thousand, he will round to 770,000. Is he right? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Lesson Check (4.NBT.A.3)

1. What is 247,039 rounded to the nearest thousand?
2. To the nearest ten thousand, the population of Vermont was estimated to be about 620,000 in 2008. What might have been the exact population of Vermont in 2008?

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## Spiral Review (Reviews 3.NF.A.1, 4.NBT.A.2)

3. Write the symbol that makes the following number sentence true?
4. Pittsburgh International Airport had approximately 714,587 passengers in August 2009. Write a number that is greater than 714,587.

$$\$546,322 \bigcirc \$540,997$$

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5. June made a design with 6 equal tiles. One tile is yellow, 2 tiles are blue, and 3 tiles are purple. What fraction of the tiles are yellow or purple?
6. The fourth grade collected 40,583 cans and plastic bottles. Write this number in word form.

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