

Nine Digit Detectives

Read, write, and analyze big whole numbers.

GRADE 4 • 4.NS.1

4.NS.1 "The student will use place value understanding to read, write, and identify the place and value of each digit in a nine-digit whole number. Read nine-digit whole numbers, presented in standard form..."

NAME _____

DATE _____

PLACE VALUE POWER

A nine-digit number has three groups of digits: millions, thousands, and ones. Each place to the left is worth 10 times as much as the place to its right, so a digit's value depends on where it is located.

WORKED EXAMPLE

In 742,309,615, what place and value does the digit 2 have?

1. Separate the number into periods: 742 | 309 | 615.
2. The digit 2 is in the millions place.
3. Multiply 2 by 1,000,000 to find its value.
4. $2 \times 1,000,000 = 2,000,000$.

Answer: The 2 is in the millions place, and its value is 2,000,000.

PRACTICE 6 problems

- 1** Write 381,406,029 in written form.

ANSWER _____

- 2** Write six hundred five million, seventy thousand, eight in standard form.

ANSWER _____

- 3** In 274,518,963, what place and value does the digit 7 have?

ANSWER _____

- 4** In 918,342,156, what place and value does the digit 4 have?

ANSWER _____

- 5** Write nine hundred nine million, twelve thousand, forty in standard form.

ANSWER _____

- 6** In 163,804,275, what place and value does the digit 6 have?

ANSWER _____

APPLY IT Show your work

- 1** A citywide reading challenge recorded three hundred twenty-seven million, forty-six thousand, nine pages read. Write the number in standard form. Then name the place and value of the digit 4.

WORK SPACE

ANSWER _____

- 2** A video game has 518,700,204 points on its global leaderboard. Write the number in written form. Then name the place and value of the digit 8.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

The number 505,070,500 has three digits that are 5. Name the place and value of each 5. Then explain how the value of a digit changes when it moves one place to the left.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write 381,406,029 in written form.	three hundred eighty-one million, four hundred six thousand, twenty-nine
2	Write six hundred five million, seventy thousand, eight in standard form.	605,070,008
3	In 274,518,963, what place and value does the digit 7 have?	ten-millions place, 70,000,000
4	In 918,342,156, what place and value does the digit 4 have?	ten-thousands place, 40,000
5	Write nine hundred nine million, twelve thousand, forty in standard form.	909,012,040
6	In 163,804,275, what place and value does the digit 6 have?	ten-millions place, 60,000,000

PART 2 • APPLY IT

- 327,046,009; the 4 is in the ten-thousands place and has a value of 40,000.** Write the millions, thousands, and ones periods as 327 | 046 | 009. The 4 is the first digit in the thousands period, so it is worth 40,000.
- five hundred eighteen million, seven hundred thousand, two hundred four; the 8 is in the millions place and has a value of 8,000,000.** Read the number by periods: 518 million, 700 thousand, and 204. The 8 is in the millions place, so its value is 8,000,000.

CHALLENGE

The first 5 is in the hundred-millions place and is worth 500,000,000. The second 5 is in the millions place and is worth 5,000,000. The third 5 is in the hundreds place and is worth 500. When a digit moves one place to the left, its value becomes 10 times greater.

Accept written-number forms with or without the word "and" when the place values are correct. Accept place values and values written in words or numerals.