LESSON MAKER PRO

Digit Value Detectives

Track each digit's place and value in big numbers.

GRADE 4 · 4.NS.1.c

4.NS.1.c "Apply patterns within the base 10 system to determine and communicate, orally and in written form, the place and value of each digit in a nine-digit whole number (e.g., in 568,165,724..."

NAME _____ DATE _____

PLACE VALUE PATTERNS

Start at the right with the ones place. Each place you move left is worth 10 times as much as the place before it, so a digit's place tells its value.

WORKED EXAMPLE

In 482,731,965, what place is the digit 7 in? What is its value?

1. Start at the right: 5 ones, 6 tens, and 9 hundreds.
2. Continue left: 1 thousands, 3 ten-thousands, and 7 hundred-thousands.
3. Multiply 7 by 100,000 to find its value.

Answer: The 7 is in the hundred-thousands place. Its value is 700,000.

PRACTICE 6 problems

1 In 639,284,157, what place is the digit 9 in? What is its value?

ANSWER _____

2 In 704,516,832, what place is the digit 1 in? What is its value?

ANSWER _____

3 In 851,093,426, which digit has a value of 90,000? Name its place.

ANSWER _____

4 Write the value of the digit 6 in 276,418,905.

ANSWER _____

5 What digit is in the hundred-millions place in 913,742,680? What is that digit's value?

ANSWER _____

6 Write 438,205,719 in expanded form.

ANSWER _____

APPLY IT Show your work

1 A wildlife website recorded 326,418,705 visits. What does the digit 6 represent in this number?

WORK SPACE

ANSWER _____

2 A video game scoreboard shows 781,650,234 points. What place is the digit 5 in, and what is its value?

WORK SPACE

ANSWER _____

CHALLENGE One step up

In 808,080,808, list every place that contains an 8 and the value of each 8. Then explain why the values are different.

WORK SPACE AND ANSWER

ANSWER KEY

Digit Value Detectives

GRADE 4 · 4.NS.1.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	In 639,284,157, what place is the digit 9 in? What is its value?	**The 9 is in the millions place. Its value is 9,000,000.**
2	In 704,516,832, what place is the digit 1 in? What is its value?	**The 1 is in the ten-thousands place. Its value is 10,000.**
3	In 851,093,426, which digit has a value of 90,000? Name its place.	**The digit is 9. It is in the ten-thousands place.**
4	Write the value of the digit 6 in 276,418,905.	**6,000,000**
5	What digit is in the hundred-millions place in 913,742,680? What is that digit's value?	**The digit is 9. Its value is 900,000,000.**
6	Write 438,205,719 in expanded form.	**400,000,000 + 30,000,000 + 8,000,000 + 200,000 + 5,000 + 700 + 10 + 9**

PART 2 · APPLY IT

1. **The 6 represents 6 millions, or 6,000,000 visits.** The digit 6 is in the millions place. Multiply 6 by 1,000,000.
2. **The 5 is in the ten-thousands place. Its value is 50,000 points.** In 781,650,234, the 5 is in the ten-thousands place. Multiply 5 by 10,000.

CHALLENGE

The 8s are in the hundred-millions place, 800,000,000; millions place, 8,000,000; ten-thousands place, 80,000; hundreds place, 800; and ones place, 8. The values are different because each place to the left is worth 10 times as much.

Accept place names written with or without hyphens, such as ten thousands or ten-thousands. For expanded form, accept terms in any order if all nonzero place values are correct.