LESSON MAKER PRO

Decimal Detective

Use models and place value through thousandths.

GRADE 4 · 4.NS.4.b

4.NS.4.b "Represent and identify decimals expressed through thousandths, using concrete, pictorial, and numerical representations."

NAME _____ DATE _____

PLACE VALUE POWERS

Digits to the right of the decimal show tenths, hundredths, and thousandths. Each place is 10 times smaller than the place to its left. Use zero as a placeholder when a place has no value.

WORKED EXAMPLE

Write the decimal for 3 ones, 6 tenths, 4 hundredths, and 2 thousandths.

1. Write 3 in the ones place.
2. Write 6, 4, and 2 in the tenths, hundredths, and thousandths places.
3. The decimal is 3.642.

Answer: 3.642

PRACTICE 6 problems

1 Write the decimal for 6 ones, 4 tenths, 0 hundredths, and 9 thousandths.

ANSWER _____

2 In 3.572, what is the value of the digit 7?

ANSWER _____

3 A base-ten model has 2 whole cubes, 5 flats worth 0.1 each, 1 rod worth 0.01, and 8 small cubes worth 0.001 each. Write the decimal.

ANSWER _____

4 A picture is divided into 1,000 equal parts. It has 426 shaded parts. Write the shaded amount as a decimal.

ANSWER _____

5 Write 7.035 in expanded form.

ANSWER _____

6 Write 684 thousandths as a decimal.

ANSWER _____

APPLY IT Show your work

1 At robotics club, Mia's robot traveled 4 meters, 3 tenths of a meter, 5 hundredths of a meter, and 9 thousandths of a meter during a test. Write the distance as a decimal.

WORK SPACE

ANSWER _____

2 An art club paint bottle has 0.625 liter of paint. Which digit is in the thousandths place, and what amount does it represent?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student says that 5.08 and 5.080 do not name the same amount because one number has more digits. Is the student correct? Explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Detective

GRADE 4 · 4.NS.4.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write the decimal for 6 ones, 4 tenths, 0 hundredths, and 9 thousandths.	**6.409**
2	In 3.572, what is the value of the digit 7?	**0.07**
3	A base-ten model has 2 whole cubes, 5 flats worth 0.1 each, 1 rod worth 0.01, and 8 small cubes worth 0.001 each. Write the decimal.	**2.518**
4	A picture is divided into 1,000 equal parts. It has 426 shaded parts. Write the shaded amount as a decimal.	**0.426**
5	Write 7.035 in expanded form.	**7 + 0.03 + 0.005**
6	Write 684 thousandths as a decimal.	**0.684**

PART 2 · APPLY IT

1. **4.359 meters** Put 4 in the ones place, then put 3, 5, and 9 in the tenths, hundredths, and thousandths places. The distance is 4.359 meters.
2. **5; 0.005 liter** The third digit to the right of the decimal is the thousandths digit. In 0.625, the 5 represents 5 thousandths, or 0.005 liter.

CHALLENGE

No. 5.08 has 5 ones, 0 tenths, and 8 hundredths. Writing 5.080 adds 0 thousandths, so the value does not change.

Accept a leading zero in decimals less than 1, such as 0.426, and accept equivalent decimal forms with trailing zeros. For expanded form, accept equivalent forms such as 7 + 3/100 + 5/1000.