

Decimal Place Detectives

Build and break apart decimals through thousandths.

GRADE 5 • 5.NR.4.1

5.NR.4.1 "Read and write decimal numbers to the thousandths place using base-ten numerals written in standard form and expanded form."

NAME _____

DATE _____

PLACE VALUE IN DECIMALS

Digits to the right of the decimal point show tenths, hundredths, and thousandths. In expanded form, write the value of each nonzero digit as an addition sentence. A zero may be left out of expanded form, but it holds its place in standard form.

WORKED EXAMPLE

Write 6.482 in expanded form.

- 6 is in the ones place, 4 is in the tenths place, 8 is in the hundredths place, and 2 is in the thousandths place.
- Write each digit's value: 6, 0.4, 0.08, and 0.002.
- Add the values.

Answer: $6 + 0.4 + 0.08 + 0.002$

PRACTICE 6 problems

1 Write 3.709 in expanded form.

ANSWER _____

2 Write $8 + 0.04 + 0.006$ in standard form.

ANSWER _____

3 Write 0.315 in expanded form.

ANSWER _____

4 Write $12 + 0.5 + 0.02 + 0.003$ in standard form.

ANSWER _____

5 Write 9.080 in expanded form.

ANSWER _____

6 Write $4 + 0.3 + 0.007$ in standard form.

ANSWER _____

APPLY IT Show your work

- 1** A bike-racing video game records a distance of 3.648 kilometers. Write 3.648 in expanded form.

WORK SPACE

ANSWER _____

- 2** A gaming tournament score is shown as $4 + 0.2 + 0.03 + 0.009$ points. Write the score in standard form.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A student says that both zeros in 14.050 are in the hundredths place. Explain why the student is incorrect. Name the place of each zero.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write 3.709 in expanded form.	$3 + 0.7 + 0.009$
2	Write $8 + 0.04 + 0.006$ in standard form.	8.046
3	Write 0.315 in expanded form.	$0.3 + 0.01 + 0.005$
4	Write $12 + 0.5 + 0.02 + 0.003$ in standard form.	12.523
5	Write 9.080 in expanded form.	$9 + 0.08$
6	Write $4 + 0.3 + 0.007$ in standard form.	4.307

PART 2 • APPLY IT

1. **$3 + 0.6 + 0.04 + 0.008$** The digits show 3 ones, 6 tenths, 4 hundredths, and 8 thousandths. Add the value of each digit.
2. **4.239** Place 2 in the tenths place, 3 in the hundredths place, and 9 in the thousandths place. The standard form is 4.239.

CHALLENGE

The first 0 is in the tenths place, and the last 0 is in the thousandths place. The digit 5 is in the hundredths place.

Accept equivalent expanded forms that include zero addends, such as $9 + 0.0 + 0.08 + 0.000$. In standard form, digits must stay in their correct place-value positions.