

Decimal Message Lab

Show each decimal value with numbers, symbols, and words.

GRADE 5 • TEKS 5.1.D

5.1.D "communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;"

NAME _____

DATE _____

SHOW THE VALUE

Each digit in a decimal has a place value. You can communicate a decimal in standard form, expanded form, and word form. To compare decimals, line up the decimal points and compare place values from left to right.

WORKED EXAMPLE

Write 8.245 in expanded form and word form.

DIGITS AND VALUES

Place	Digit value
Ones	8
Tenths	0.2
Hundredths	0.04
Thousandths	0.005

1. The 8 is ones, 2 is tenths, 4 is hundredths, and 5 is thousandths.
2. Write the value of each nonzero digit as a sum: $8 + 0.2 + 0.04 + 0.005$.
3. Read the decimal part as 245 thousandths.

Answer: $8 + 0.2 + 0.04 + 0.005$; eight and two hundred forty-five thousandths

PRACTICE 6 problems

- 1** Write 6.309 in expanded form and word form.

ANSWER _____

- 2** Write "fourteen and seventy-two hundredths" in standard form and expanded form.

ANSWER _____

- 3** The line shows $A = 5.607$ and $B = 5.67$. Compare 5.67 and 5.607 using $>$, $<$, or $=$. Explain using both place values and left-to-right position.



ANSWER _____

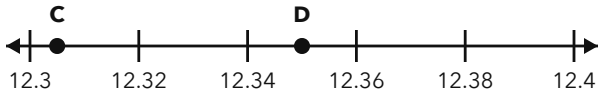
- 4** Order 0.91, 0.109, and 0.19 from least to greatest. Write a comparison chain.

ANSWER _____

5 Sara says that $7.4 = 7.04$. Is Sara correct? Use expanded form to explain.

ANSWER _____

6 The line shows $C = 12.305$ and $D = 12.35$. Which is greater? Write a comparison sentence using place values and explain how the line supports it.



ANSWER _____

APPLY IT Show your work

1 The running club recorded these lap times in minutes. Which runner had the fastest time? Write an inequality that compares the fastest time with the next-fastest time.

RUNNING CLUB LAP TIMES

Runner	Time in minutes
Maya	2.68
Omar	2.705
Tia	2.8

ANSWER _____

- 2** You have \$15.00 in game credit. You buy a costume for \$6.75 and a game pass for \$3.08. How much credit is left? Write an equation and explain why the decimal points must line up.

ANSWER _____

CHALLENGE One step up

A mystery number has 9 ones, 4 tenths, 0 hundredths, and 6 thousandths. Write the number in standard form, expanded form, and word form. Then compare it to 9.46 and explain your comparison.

PRACTICE 1

Write 6.309 in expanded form and word form.

$6 + 0.3 + 0.009$; six and three hundred nine thousandths

PRACTICE 2

Write "fourteen and seventy-two hundredths" in standard form and expanded form.

14.72 ; $10 + 4 + 0.7 + 0.02$

PRACTICE 3

The line shows $A = 5.607$ and $B = 5.67$. Compare 5.67 and 5.607 using $>$, $<$, or $=$. Explain using both place values and left-to-right position.

$5.67 > 5.607$ because 5.670 has 7 hundredths and 5.607 has 0 hundredths. B is farther right than A.

PRACTICE 4

Order 0.91, 0.109, and 0.19 from least to greatest. Write a comparison chain.

$0.109 < 0.19 < 0.91$

PRACTICE 5

Sara says that $7.4 = 7.04$. Is Sara correct? Use expanded form to explain.

No. $7.4 = 7 + 0.4$, and $7.04 = 7 + 0.04$.

PRACTICE 6

The line shows $C = 12.305$ and $D = 12.35$. Which is greater? Write a comparison sentence using place values and explain how the line supports it.

12.35 is greater. $12.305 < 12.350$ because 5 hundredths is greater than 0 hundredths. D is farther right than C.

APPLY IT 1

Maya had the fastest time. $2.68 < 2.705$.

Compare the times by writing equal numbers of decimal places: 2.680, 2.705, and 2.800. Maya's time is the least, and Omar's is the next least.

APPLY IT 2

$\$5.17$; $15.00 - 6.75 - 3.08 = 5.17$. The decimal points line up so ones, tenths, and hundredths are subtracted from the same place values. First subtract $\$6.75$ from $\$15.00$ to get $\$8.25$. Then subtract $\$3.08$ to get $\$5.17$.

CHALLENGE

9.406; $9 + 0.4 + 0.006$; nine and four hundred six thousandths; $9.406 < 9.46$ because 9.406 has 0 hundredths and 9.46 has 6 hundredths.

Accept equivalent expanded forms that include zero-value terms, such as $9 + 0.4 + 0$ hundredths + 0.006. Accept comparison explanations that correctly use added zeros to compare place values.