LESSON MAKER PRO

Decimal Place Builders

Build and break apart decimals through thousandths.

GRADE 5 · MA.5.NSO.1.3

MA.5.NSO.1.3 "Compose and decompose multi-digit numbers with decimals to the thousandths in multiple ways using the values of the digits in each place. Demonstrate the compositions or decompositions using objects, drawings and expressions or equations."

NAME _____ DATE _____

BUILD WITH PLACE VALUES

Each digit in a decimal has a value based on its place. You can decompose a number by writing the value of each nonzero digit as an addition expression. You can compose a number by adding values from hundreds, tens, ones, tenths, hundredths, and thousandths.

WORKED EXAMPLE

Decompose 47.306 in expanded form.

1. The digits show 4 tens, 7 ones, 3 tenths, 0 hundredths, and 6 thousandths.
2. Write each nonzero value: 40, 7, 0.3, and 0.006.
3. Add the values: 40 + 7 + 0.3 + 0.006 = 47.306.

Answer: 47.306 = 40 + 7 + 0.3 + 0.006

PRACTICE 6 problems

1 Decompose 63.482 in expanded form.

ANSWER _____

2 Compose a number with 5 hundreds, 2 tens, 7 ones, 9 tenths, 4 hundredths, and 6 thousandths.

ANSWER _____

3 Write 8.071 as a sum using fractions with denominators 100 and 1,000.

ANSWER _____

4 Decompose 304.125 in two different ways. In one form, name each nonzero place value. In the other form, group the decimal part.

ANSWER _____

5 Which expression composes 90.509? A. 90 + 0.05 + 0.009 B. 90 + 0.5 + 0.009 C. 9 + 0.5 + 0.009 D. 90 + 0.5 + 0.09

ANSWER _____

6 A number has 14 tenths, 3 hundredths, and 8 thousandths. Compose the number after regrouping.

ANSWER _____

APPLY IT Show your work

1 A music app shows that an album download uses 6.204 GB of storage. Write an equation that decomposes the amount using the values of its nonzero digits.

WORK SPACE

ANSWER _____

2 At robotics club, a drone flight log lists 9 ones, 18 tenths, 6 hundredths, and 4 thousandths kilometers. What distance did the drone travel after you regroup the values?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A measurement is made from 3 hundreds, 14 ones, 12 tenths, 15 hundredths, and 8 thousandths. Compose the number. Then write an equation that shows the values before regrouping and the final number.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Place Builders

GRADE 5 · MA.5.NSO.1.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Decompose 63.482 in expanded form.	**63.482 = 60 + 3 + 0.4 + 0.08 + 0.002**
2	Compose a number with 5 hundreds, 2 tens, 7 ones, 9 tenths, 4 hundredths, and 6 thousandths.	**527.946**
3	Write 8.071 as a sum using fractions with denominators 100 and 1,000.	**8 + 7/100 + 1/1000**
4	Decompose 304.125 in two different ways. In one form, name each nonzero place value. In the other form, group the decimal part.	**304.125 = 300 + 4 + 0.1 + 0.02 + 0.005; 304.125 = 304 + 0.125**
5	Which expression composes 90.509? A. 90 + 0.05 + 0.009 B. 90 + 0.5 + 0.009 C. 9 + 0.5 + 0.009 D. 90 + 0.5 + 0.09	**B. 90 + 0.5 + 0.009**
6	A number has 14 tenths, 3 hundredths, and 8 thousandths. Compose the number after regrouping.	**1.438**

PART 2 · APPLY IT

1. **6.204 = 6 + 0.2 + 0.004** The 2 is in the tenths place, and the 4 is in the thousandths place. Add the values of the nonzero digits.
2. **10.864 kilometers** Add 9 + 1.8 + 0.06 + 0.004. The total is 10.864.

CHALLENGE

300 + 14 + 1.2 + 0.15 + 0.008 = 315.358

Accept equivalent expanded forms that keep every digit value correct, including forms that include zero-value terms. For regrouping problems, accept a correct equation that shows the original place-value amounts and the final decimal.