LESSON MAKER PRO

Build Big Numbers

Show four-digit numbers in different place-value ways.

GRADE 3 · MA.3.NSO.1.2

MA.3.NSO.1.2 "Compose and decompose four-digit numbers in multiple ways using thousands, hundreds, tens and ones. Demonstrate each composition or decomposition using objects, drawings and expressions or equations."

NAME _____ DATE _____

TRADE PLACE VALUES

A four-digit number tells how many thousands, hundreds, tens, and ones it has. You can break apart a number in more than one way by trading 1 thousand for 10 hundreds or 1 hundred for 10 tens.

WORKED EXAMPLE

Decompose 4,718 using a place-value drawing and an equation.

1. The digits mean 4 thousands, 7 hundreds, 1 ten, and 8 ones.
2. Sketch 4 thousand blocks, 7 hundred flats, 1 ten rod, and 8 one cubes.
3. Write 4,000 + 700 + 10 + 8 = 4,718.

Answer: 4 thousands, 7 hundreds, 1 ten, 8 ones; 4,000 + 700 + 10 + 8 = 4,718

PRACTICE 6 problems

1 Write 3,406 in expanded form.

ANSWER _____

2 Compose a number with 6 thousands, 12 hundreds, 5 tens, and 9 ones. Write the number and an equation.

ANSWER _____

3 Decompose 8,130 in two different ways.

ANSWER _____

4 Draw a quick place-value picture for 2,045. Then write an equation for the number.

ANSWER _____

5 What number has 14 hundreds, 3 tens, and 6 ones? Write an equation.

ANSWER _____

6 Fill in the blank: 9,000 + ___ + 60 + 2 = 9,562.

ANSWER _____

APPLY IT Show your work

1 A robotics club sorted 6,452 bottle caps for a mural. Write the number in standard expanded form. Then write a different decomposition that starts with 5 thousands.

WORK SPACE

ANSWER _____

2 Liam has 7,090 coins in a game. He says the number can be shown as 70 hundreds and 9 tens. Is he correct? Write an equation to prove your answer.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A number is made with 4 thousands, 16 hundreds, 23 tens, and 14 ones. What is the number? Write it in standard expanded form and explain the trades you made.

WORK SPACE AND ANSWER

ANSWER KEY

Build Big Numbers

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write 3,406 in expanded form.	**3,000 + 400 + 6**
2	Compose a number with 6 thousands, 12 hundreds, 5 tens, and 9 ones. Write the number and an equation.	**7,259; 6,000 + 1,200 + 50 + 9 = 7,259**
3	Decompose 8,130 in two different ways.	**8,000 + 100 + 30; 7,000 + 1,100 + 30**
4	Draw a quick place-value picture for 2,045. Then write an equation for the number.	**2 thousands, 0 hundreds, 4 tens, 5 ones; 2,000 + 40 + 5 = 2,045**
5	What number has 14 hundreds, 3 tens, and 6 ones? Write an equation.	**1,436; 1,400 + 30 + 6 = 1,436**
6	Fill in the blank: 9,000 + ___ + 60 + 2 = 9,562.	**500**

PART 2 · APPLY IT

1. **6,000 + 400 + 50 + 2; 5,000 + 1,400 + 50 + 2** Use the digits for the standard expanded form. Trade 1 thousand for 10 hundreds, so 6 thousands and 4 hundreds become 5 thousands and 14 hundreds.
2. **Yes. 70 hundreds + 9 tens = 7,000 + 90 = 7,090.** Seventy hundreds equals 7,000, and 9 tens equals 90. Their sum is 7,090.

CHALLENGE

5,844; 5,000 + 800 + 40 + 4. Trade 10 hundreds for 1 thousand, 20 tens for 2 hundreds, and 10 ones for 1 ten.

Accept any equivalent decomposition that adds to the correct number. For drawings, accept clear place-value sketches or labeled base-ten blocks that match the number.