

Place Value Puzzles

Build three-digit numbers in different ways.

GRADE 2 • MA.2.NSO.1.2

MA.2.NSO.1.2 "Compose and decompose three-digit numbers in multiple ways using hundreds, tens and ones. Demonstrate each composition or decomposition with objects, drawings and expressions or equations."

NAME _____

DATE _____

BUILD AND BREAK APART

A three-digit number has hundreds, tens, and ones. You can break a number into parts, or trade 1 hundred for 10 tens. Use a quick drawing, words, and an equation to show your thinking.

WORKED EXAMPLE

A game shelf has 684 cards.
Show the number with
hundreds, tens, and ones.

1. Draw 6 large squares for 6 hundreds.
2. Draw 8 rods for 8 tens.
3. Draw 4 dots for 4 ones.
4. Write $600 + 80 + 4 = 684$.

**Answer: 6 hundreds, 8 tens, 4 ones;
 $600 + 80 + 4 = 684$**

PRACTICE 5 problems

- 1** A toy bin has 2 hundreds, 6 tens, and 3 ones of toy cars. Write the number and an equation.

ANSWER _____

- 2** Lena has 517 stickers. Break apart the number into hundreds, tens, and ones. Write an equation.

ANSWER _____

- 3** A block tower has 430 blocks. Trade 1 hundred for 10 tens. Write the new hundreds, tens, and ones.

ANSWER _____

- 4** A pet shop has 508 fish. Draw quick place-value pictures, then write an equation for the number.

ANSWER _____

- 5** A puzzle box has 1 hundred, 14 tens, and 2 ones of puzzle pieces. What number is that? Write an equation.

ANSWER _____

APPLY IT Show your work

- 1** Noah collects 276 trading cards. He puts them into 2 hundreds, 7 tens, and 6 ones. Write an equation that shows his cards.

WORK SPACE

ANSWER _____

- 2** A library cart has 352 books. The librarian trades 1 hundred for 10 tens. How many hundreds, tens, and ones are on the cart now? Write an equation.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Mia says that 4 hundreds, 13 tens, and 6 ones equals 436. Is Mia correct? Explain with an equation.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A toy bin has 2 hundreds, 6 tens, and 3 ones of toy cars. Write the number and an equation.	263; $200 + 60 + 3 = 263$
2	Lena has 517 stickers. Break apart the number into hundreds, tens, and ones. Write an equation.	5 hundreds, 1 ten, 7 ones; $500 + 10 + 7 = 517$
3	A block tower has 430 blocks. Trade 1 hundred for 10 tens. Write the new hundreds, tens, and ones.	3 hundreds, 13 tens, 0 ones; $300 + 130 + 0 = 430$
4	A pet shop has 508 fish. Draw quick place-value pictures, then write an equation for the number.	5 hundreds, 0 tens, 8 ones; $500 + 0 + 8 = 508$
5	A puzzle box has 1 hundred, 14 tens, and 2 ones of puzzle pieces. What number is that? Write an equation.	242; $100 + 140 + 2 = 242$

PART 2 • APPLY IT

- $200 + 70 + 6 = 276$** 276 has 2 hundreds, 7 tens, and 6 ones. Add 200, 70, and 6.
- 2 hundreds, 15 tens, 2 ones; $200 + 150 + 2 = 352$** Start with 3 hundreds, 5 tens, and 2 ones. Trading 1 hundred makes 2 hundreds and 15 tens.

CHALLENGE

No. 4 hundreds, 13 tens, and 6 ones equals $400 + 130 + 6 = 536$, not 436.

Accept equivalent equations that correctly show the same number, including 0 ones or 0 tens. For drawings, accept clear groups that match the stated hundreds, tens, and ones.