

## Grade 2: Place Value Units

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**2.NBT.A.1:** Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

**2.NBT.A.1a:** 100 can be thought of as a bundle of ten tens — called a "hundred."

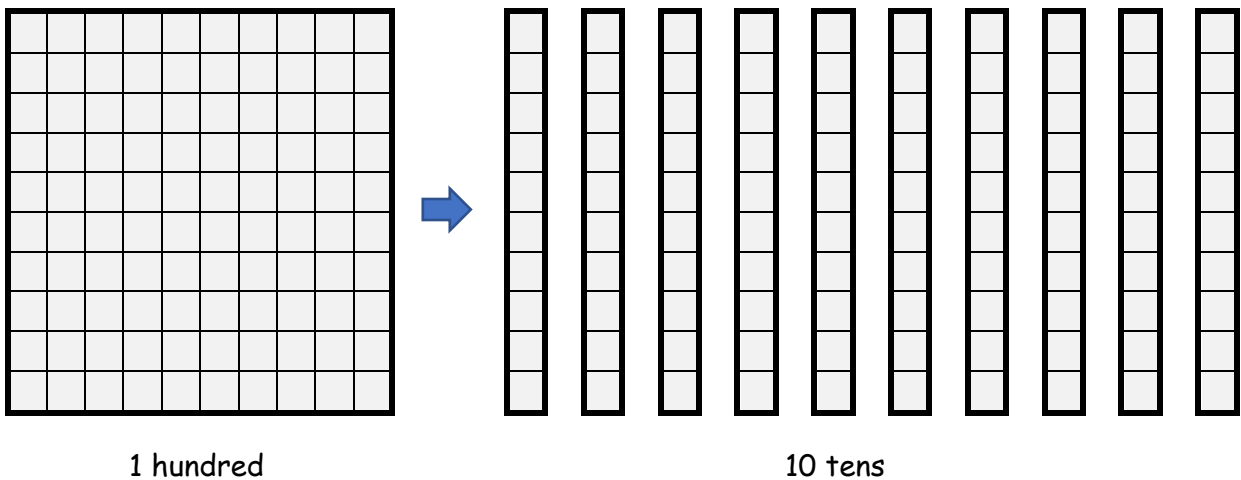
Write a number that makes the equation true.

$$1 \text{ hundred} = \boxed{\phantom{00}} \text{ tens}$$

### Solution

Correct if student writes the number 10.

A group of a hundred things can be organized into 10 groups with ten things in each group (see the diagram). So, 1 group of a hundred equals 10 groups of ten. In other words, 1 hundred = 10 tens.



Many second graders will think about this question visually. Or, they could simply remember that 1 hundred is 10 tens. Some students can also answer the question by thinking about multiplication:  $100 = 10 \times 10$ . Any of these approaches is valid.

To extend the problem, you could ask additional questions about the place value system, such as: Which number goes in the blank to make a true equation?

$$4 \text{ tens} + 1 \text{ hundred} = \underline{\hspace{2cm}}$$

(Answer: 140)

Understanding the place value units lays early foundations for understanding decimal fractions in later grades, and it also helps students learn how to “borrow” and “carry” in the standard algorithms for adding and subtracting multi-digit numbers.

### Elaboration on Alignment

This is intended to be an easy problem about fundamental place value concepts. One essential concept in grade 2 place value is the idea that the place value system has *units*, with the units designed beautifully so that larger units break down into smaller units according to a constant multiplier of ten. Two of the units in the place value system are tens and hundreds. Ten of the tens can be thought of as a hundred, and a hundred can be thought of as ten of the tens.

In the diagram, the heavy border represents unit thinking: the heavy border around the square grid shows that we are thinking about the hundred things not only as its individual items but also as a group entity. In the right-hand section of the diagram, the heavy border around the strips shows that we are thinking about a given strip not only as its individual items but also as a group entity. In both cases, we retain the light gridlines because after all, the group does consist of its individuals, which therefore have to be indicated.

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Name: \_\_\_\_\_

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