

Grade 5: Decimal Place Value

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5.NBT.A.1 – Recognize that in a multi-digit number, a digit in the one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.

Make a true equation by writing the correct number out of the options below in the box.

1 tenth = hundredth

$$\frac{1}{1000}$$

$$\frac{1}{100}$$

$$\frac{1}{10}$$

$$1$$

$$10$$

$$100$$

$$1000$$

Solution

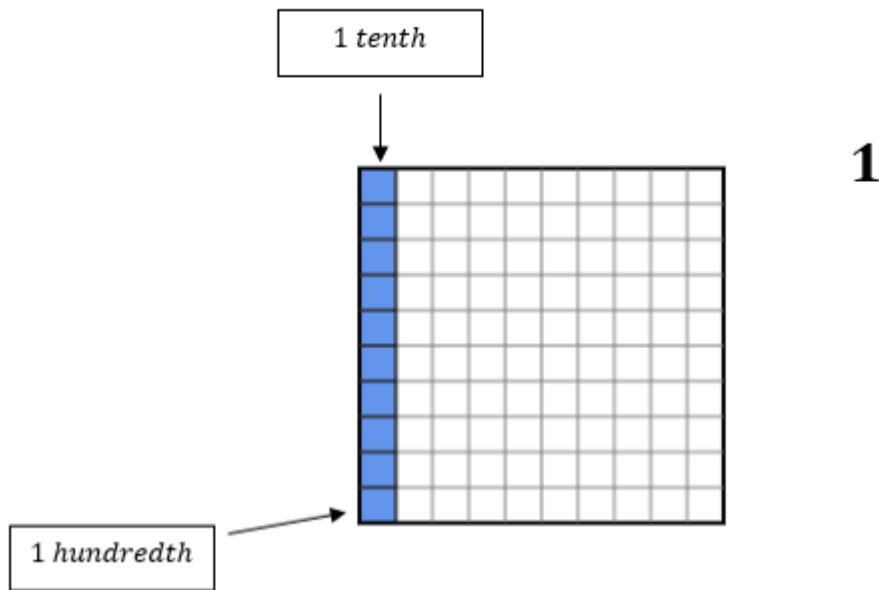
Correct if student writes the number 10 in the box.

A tenth is ten times as large as a hundredth.

There are many approaches to this question. Some fifth graders may think about the question in terms of the size of the place value units, recognizing that in any multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right. Some students may approach the problem visually, as in the diagram below. Still other students may think along the lines of $___ \times 0.01 = 0.1$ (what number times one-hundredth equals one-tenth). Any of these approaches is valid.

If a student has a hard time thinking about this question, it might help if you ask: “Which is bigger, a tenth or a hundredth?” This may help them decide correctly between the alternatives of 10 and $\frac{1}{10}$.

This diagram can also be used to explain why 1 tenth = 10 hundredths:



- The large square grid shows 1 unit. It is divided into 100 small parts. Each small part is one hundredth.
- The blue column is one tenth because there are ten of these columns in 1.
- There are ten small parts in the blue column.
- In other words, there are ten hundredths in one tenth.

Understanding the place value units gives students everyday number sense and helps them learn the standard algorithms for adding, subtracting, multiplying, and dividing decimals.

Extension

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

$$30 + 7/100 + 2 \text{ tenths} = \underline{\hspace{2cm}}$$

(Answer: 30.27)

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Name: _____

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$$1$$

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