

## Illustrative Mathematics

### 5.NBT Rounding to Tenths and Hundredths

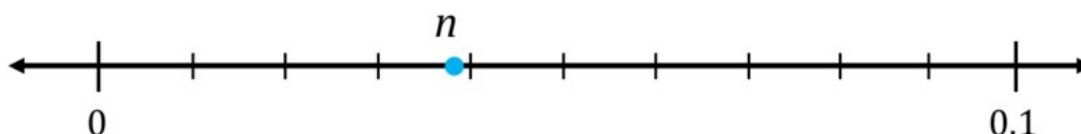
#### Alignments to Content Standards

- [Alignment: 5.NBT.A.4](#)

#### Tags

- *This task is not yet tagged.*

A number  $n$  is shown on the number line.



1. The tick marks are evenly spaced. Label them.
  2. What is  $n$  rounded to the nearest hundredth?
  3. What is  $n$  rounded to the nearest tenth?
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#### Commentary

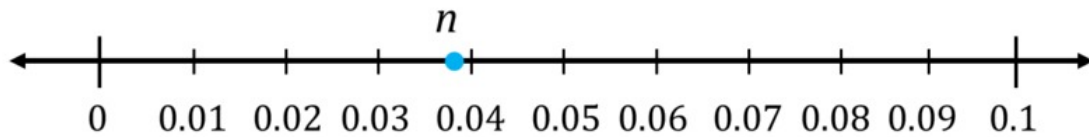
The purpose of this task is for students to use the position of a number on the number line to round the number without knowing its exact value. Though this task deals most directly with rounding, it also requires students to understand or figure out that one tenth of 0.1 is 0.01. Teachers should anticipate that students may initially struggle to label the tick marks and may want to offer such guiding questions as, "How many equal parts is the line segment between 0 and 0.1 split into?" Teachers may also want to encourage students to check their own guesses by writing out the appropriate multiples to see if they work out to 0.1. Once the class concludes that one tenth of 0.1 is 0.01, it may help to reinforce that concept by showing the decimal fractions for each value. We can see that  $\frac{10}{100}$  is indeed the same number as  $\frac{1}{10}$ . Teachers should also anticipate that students may be unfamiliar with the practice of having a letter stand for a number. Though 3rd grade students are introduced to this idea (see 3.OA.D.8), 5th grade students may not be as familiar with a situation where a letter represents an unknown number that we have some information about but cannot solve for exactly. A good precursor task for this one would be 5.NBT Comparing Decimals on the Number Line. A common misconception to look out for: a student may round up correctly to the nearest hundredth, but then instead of rounding down to 0, selects 0.1 as the nearest tenth (because the student does not view 0 as a tenth).

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#### Solutions

Solution: 1

First, label all of the tick marks:



We can see that  $n$  is closer to 0.04 than 0.03, so it rounds up to 0.04.

We can also see that  $n$  is closer to 0 than to 0.1, so  $n$  rounds down to 0.



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