

Title: Understand the value of a digit using a place-value chart

Lesson Objective: In this lesson you will learn how the value of each whole-number place is related by constructing a place-value chart.

Common Core Standard

5.NBT.1 Recognize that in a multi-digit number, a digit in 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.

Use the video at:

<http://learnzillion.com/lessons/3000>

Use the questions on the left to check for understanding and engage students at each section of the lesson.

Warm-Up	Notes
What does the digit 6 mean in the number 762? Why is it between the 7 and the 2? What if the number is 222? What does each 2 represent? Is there a pattern?	<i>In this lesson, students who already have a basic understanding of place value will further explore the base ten number system and the meaning of “places”.</i>
Let’s Review	Notes
Imagine your little sister wrote 901 and said “this is ninety-one because I wrote ninety and then 1.” What could you say to her?	<i>The key understanding is that the position of a digit in a number determines its value. This understanding is refined in the lesson by being more explicitly quantified (powers of 10).</i>
A Common Misunderstanding	Notes
What mistake is being made if someone writes “eight thousand three” as 8,0003?	<i>This is a reinforcement of the above question. The 8 in 8,003 has a value of 8000 because it is in the 4th place to the left of the decimal point, not because it has 3 0s after it.</i>
Core Lesson	Notes
How many ones are there in ten? How many tens are there in 100? How many 100s are there in 1000?	<i>Students should begin to notice a pattern; 10 of a given unit is equal to one of the unit to the first unit’s left.</i>

<p>What pattern do you see as you look from right to left on the place value chart?</p> <p>How about left to right?</p>	<p><i>In order to find the value of the same digit in an adjacent place, students will find, that digit should be multiplied or divided by ten. The operation depends on whether the place is larger or smaller than the original place.</i></p>
Post-Core Lesson	Notes
<p>How are different places related to each other? Describe in your own words what happens to the value of a digit when we place it in different parts of a number.</p>	<p><i>Students' articulation of their understanding of this concept will provide information on whether, and how, they grasp the concept of place value.</i></p>
Practice	
<p>Download the practice sheet for this lesson on the lesson plan page.</p>	
Differentiation	
<p>During the lesson and practice, identify students who are struggling. See below for interventions:</p> <p>Students don't understand the concept of base ten (2.NBT.1a): http://learnzillion.com/lessons/805</p> <p>Students don't know how to use a place value chart (2.NBT.1): http://learnzillion.com/lessons/3846</p> <p>Students don't understand the concept of powers of ten (4.NBT.1): http://learnzillion.com/lessons/3850</p>	