

Unit 3 - Place Value and Decimals

Overview

In this unit, students study skills and concepts related to place value, from reading, writing and comparing decimals to rounding and examining decimal the decimal patterns of multiplying and dividing numbers by 10. Students use their place value understandings of whole numbers and decimals to add and subtract decimals to the hundredths.

21st Century Capacities: Synthesizing

Stage 1 - Desired Results

<p>ESTABLISHED GOALS/ STANDARDS</p> <p>MP4 Model with Mathematics MP6 Attend to precision MP7 Look for and make use of structure</p> <p>Understand the place value system. CCSS.MATH.CONTENT.5.NBT.A.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 1/10 of what it represents in the place to its left.</p> <p>CCSS.MATH.CONTENT.5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p> <p>CCSS.MATH.CONTENT.5.NBT.A.3 Read,</p>	<p>Transfer:</p> <p><i>Students will be able to independently use their learning in new situations to...</i></p> <ol style="list-style-type: none"> 1. Can fluently move between representations of numbers (synthesizing) 2. Apply familiar mathematical concepts to a new problem or apply a new concept to rework a familiar problem. (synthesizing) 3. Represent and interpret patterns in numbers, data and objects. <p>Meaning:</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians use numbers, ways of representing numbers, relationships among numbers, and number systems to build meaning. 2. Mathematicians flexibly use different tools, strategies, and operations to build conceptual knowledge or solve problems. 3. Mathematicians are able to make assumptions and approximations to simplify a complicated situation. </td> <td style="width: 50%; vertical-align: top;"> <p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How can understanding a pattern help me? B. What is another way to represent this number? C. How does estimating help me? D. In what ways can numbers be composed and decomposed? </td> </tr> </table>	<p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians use numbers, ways of representing numbers, relationships among numbers, and number systems to build meaning. 2. Mathematicians flexibly use different tools, strategies, and operations to build conceptual knowledge or solve problems. 3. Mathematicians are able to make assumptions and approximations to simplify a complicated situation. 	<p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How can understanding a pattern help me? B. What is another way to represent this number? C. How does estimating help me? D. In what ways can numbers be composed and decomposed?
<p>UNDERSTANDINGS: <i>Students will understand that:</i></p> <ol style="list-style-type: none"> 1. Mathematicians use numbers, ways of representing numbers, relationships among numbers, and number systems to build meaning. 2. Mathematicians flexibly use different tools, strategies, and operations to build conceptual knowledge or solve problems. 3. Mathematicians are able to make assumptions and approximations to simplify a complicated situation. 	<p>ESSENTIAL QUESTIONS: <i>Students will explore & address these recurring questions:</i></p> <ol style="list-style-type: none"> A. How can understanding a pattern help me? B. What is another way to represent this number? C. How does estimating help me? D. In what ways can numbers be composed and decomposed? 		

Grade 5 Math Curriculum

	Acquisition:	
	<i>Students will know...</i>	<i>Students will be skilled at...</i>
<p>write, and compare decimals to thousandths. CCSS.MATH.CONTENT.5.NBT.A.3.A Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p> <p>CCSS.MATH.CONTENT.5.NBT.A.3.B Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>CCSS.MATH.CONTENT.5.NBT.A.4 Use place value understanding to round decimals to any place.</p>	<ol style="list-style-type: none"> 1. How to write decimal numbers in word form, standard form, and expanded form to the thousandths place 2. Methods for comparing and ordering decimals with and without a number line 3. How to round numbers to the nearest whole, tenth, and hundredth, to draw conclusions about how rounding to different place values can alter the magnitude of different values 4. How to use ratio tables to create solutions for multiplying and dividing by powers of ten. 5. How to solve single-step and multistep problems involving adding and subtracting decimals using practical situations. 6. How the metric system relates to our base-10 number system 7. Vocabulary: expanded form, rounding, difference, sum, power, tenth, hundredth, thousandth, ratio, milli-, centi-, kilo-, meter, gram, liter 	<ol style="list-style-type: none"> 1. Writing decimals to the thousandths in words 2. Writing decimals to the thousandths in expanded form 3. Writing decimals to the thousandths in numerals 4. Comparing decimals (thousandths) 5. Placing decimals on a number line (thousandths) 6. Rounding numbers to the nearest whole, tenth or hundredth 7. Adding and subtracting decimals (hundredths) 8. Multiplying a decimal by 1,10,100,1000,10000 using concepts of place value 9. Converting within the metric system