



Grade 5 - Unit D - Place Value and Decimals

Unit Focus

In this unit, students study skills and concepts related to the place value of decimals to the thousandth place, from reading, writing and comparing decimals to rounding and examining the relationship of decimal patterns including 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 as well as multiply and divide decimals using ratio tables and other models. Place value patterns are used to convert units of measurement in the metric system.

Stage 1: Desired Results - Key Understandings

Standard(s)	Transfer	
<p>Standards</p> <ul style="list-style-type: none"> • Common Core <ul style="list-style-type: none"> ○ <i>Mathematics: 5</i> <ul style="list-style-type: none"> ▪ Understand the place value system. ▪ 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. (CCSS.MATH.CONTENT.5.NBT.A.1) ▪ 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. (CCSS.MATH.CONTENT.5.NBT.A.2) ▪ Read, write, and compare decimals to thousandths. (CCSS.MATH.CONTENT.5.NBT.A.3) <ul style="list-style-type: none"> ▪ Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. (CCSS.MATH.CONTENT.5.NBT.A.3A) ▪ Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. (CCSS.MATH.CONTENT.5.NBT.A.3B) ▪ Understand the place value system. ▪ Use place value understanding to round decimals to any place. (CCSS.MATH.CONTENT.5.NBT.A.4) ▪ Perform operations with multi-digit whole numbers and with decimals to hundredths. ▪ Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the 	<p><i>Students will be able to independently use their learning to...</i></p> <p>T1 Apply models to solve problems.</p> <p>T2 Identify and generalize patterns and structure in numbers, expressions, data and objects.</p> <p>T3 Represent situations using mathematical reasoning and symbols.</p>	
	Meaning	
	Understanding(s)	Essential Question(s)
	<p><i>Students will understand that...</i></p> <p>U1 Mathematicians make sense of quantities to represent situations mathematically.</p> <p>U2 Mathematicians attend to the underlying meaning of quantities and symbols.</p> <p>U3 Mathematicians create or use models to generalize, represent, and solve problems.</p> <p>U4 Mathematicians see patterns to make generalizations about structures and relationships.</p>	<p><i>Students will keep considering...</i></p> <p>Q1 How can the relationship between quantities be represented?</p> <p>Q2 What model best represents this problem?</p> <p>Q3 What generalizations can be made from this pattern?</p> <p>Q4 What does this number represent?</p> <p>Q5 What is another way to represent this number?</p>
	Acquisition of Knowledge and Skill	
Knowledge	Skill(s)	
<p><i>Students will know...</i></p> <p>K1 how to write decimal numbers in word form, standard form, and expanded form to the thousandth place</p>	<p><i>Students will be skilled at...</i></p> <p>S1 writing decimals to the thousandths in words</p> <p>S2 writing decimals to the thousandths in expanded form</p>	

Stage 1: Desired Results - Key Understandings

<p>strategy to a written method and explain the reasoning used. (<i>CCSS.MATH.CONTENT.5.NBT.B.7</i>)</p> <ul style="list-style-type: none"> ▪ Convert like measurement units within a given measurement system. ▪ Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (<i>CCSS.MATH.CONTENT.5.MD.A.1</i>) ▪ Mathematical Practices ▪ Reason abstractly and quantitatively. (<i>CCSS.MATH.MP.2</i>) ▪ Look for and make use of structure. (<i>CCSS.MATH.MP.7</i>) <p>Madison Public Schools Profile of a Graduate Analyzing: Examining information/data/evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences. (<i>POG.1.2</i>)</p>	<p>K2 methods and models for comparing and ordering decimals K3 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 K4 how to use ratio tables to create solutions for multiplying and dividing by powers of ten. K5 how to solve single-step and multistep problems involving adding and subtracting decimals using practical situations. K6 how the metric system relates to our base-10 number system K7 vocabulary: expanded form, rounding, difference, sum, power, tenth, hundredth, thousandth, ratio, milli-, centi-, kilo-, meter, gram, liter</p>	<p>S3 writing decimals to the thousandths in numerals S4 comparing decimals (thousandths) S5 placing decimals on a number line (thousandths) S6 rounding numbers to the nearest whole, tenth or hundredth S7 adding and subtracting decimals (hundredths) S8 multiplying a decimal by 1,10,100,1000,10000 using concepts of place value S9 converting within the metric system S10 multiplying numbers with decimals using the standard algorithm.</p>
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