

MOBILE COUNTY PUBLIC SCHOOLS  
 DIVISION OF CURRICULUM & INSTRUCTION  
 FIFTH GRADE MATHEMATICS INSTRUCTIONAL PLANNING GUIDE  
 2017-2018: QTR 1

Qtr. 1: Weeks 1-3

August 8 – August 25 (14 Days)

Grade 5 Unit 1: Place Value

**UNIT OVERVIEW: EXPANDING UNDERSTANDING OF PLACE VALUE TO DECIMALS**

In this unit students expand their previous understanding of place value to include decimal numbers. Grade 5 is the last grade in which NBT domain appears in the CCSSM.

**ESSENTIAL QUESTIONS:**

How does multiplying or dividing a whole number by a power of ten affect the product?  
 How are whole numbers and decimals written, compared, and ordered?  
 How can sums and differences of decimals be estimated?

**KEY VOCABULARY:**

place value, decimal, decimal point, patterns, multiply, divide, tenths, thousands, greater than, less than, equal to, <, >, =, compare/comparison, round, standard form, word form, expanded form, inequality, expression

*Basic Fact Assessment: Multiplication factors (0-9)*

**Standards/Objectives**

**Mastery Standards**

**Standards Clarification**

**[5-NBT.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.

**[5-NBT.2]** Multiplying a number by powers of 10 including exponents with powers of 10 and explain patterns in the placement of the decimal point when a decimal multiplied or divided by a power of 10.

**[5-NBT.3]** Read, write, and compare decimals to thousandths.  
 a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.  
 $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$   
 b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

**[5-NBT.3]** Read, write, and compare decimals to thousandths.

**[5-NBT.4]** Use place value understanding to round decimals to any place.

**[5-NBT.4]** Round decimals to any place.

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Opportunity for Depth Standards		Standards Clarification	
<p>[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 1/10 of what it represents in the place to its left.</p>		<p>[5-NBT.1] Base on the base-10 number system digits to the left are 10 times as great as digits to the right; likewise, digits to the right are 1/10th of digits to the left. For example, the 8 in 845 has a value of 800 which is ten times as much as the 8 in the number 782. In the same spirit, the 8 in 782 is 1/10th the value of the 8 in 845.</p>	
<b>Resources Quarter 1 Unit 1</b>			
<p>Engage New York Module 1 Topics A, B, &amp; C – (NBT1, NBT2, NBT3, NBT4)  <a href="https://www.engageny.org/resource/grade-5-mathematics-module-1">https://www.engageny.org/resource/grade-5-mathematics-module-1</a></p> <p>Module 2 Topics A, E (Lesson16) – (NBT1, NBT2)  <a href="https://www.engageny.org/resource/grade-5-mathematics-module-2">https://www.engageny.org/resource/grade-5-mathematics-module-2</a></p>	<p>Georgia Standards Unit 1 – (NBT1, NBT2)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf</a></p> <p>Unit 2 (NBT1, NBT3, NBT4)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-2.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-2.pdf</a></p> <p>Unit 3 (NBT2)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-3.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-3.pdf</a></p>	<p>North Carolina – (NBT1, NBT2, NBT3, NBT4)  <a href="http://3-5cctask.ncdpi.wikispaces.net/5.NBT.1-5.NBT4">http://3-5cctask.ncdpi.wikispaces.net/5.NBT.1-5.NBT4</a></p>	<p>Math In Focus  <b>Math in Focus Chapter 1: Focus Lesson Multiplying by powers of 10</b> (NBT1, NBT2)  <b>Chapter 8 Lesson 2 – (NBT3, NBT4)</b></p>
<p><b>Xtra Math</b> <a href="https://xtramath.org/#/home/index">https://xtramath.org/#/home/index</a> <i>Free, individualized web based program that helps to build student fluency.</i></p>			
<b>Focus Standards for Mathematical Practice</b>			
MP.7 Look for and make use of structure.			
MP.8 Look for and express regularity in repeated reasoning.			

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Qtr. 1: Weeks 4-6  
 August 28 – September 15 (14 days)  
 Grade 5 Unit 2: Operations with Whole Numbers and Decimals

**UNIT OVERVIEW: OPERATIONS WITH WHOLE NUMBERS AND DECIMALS**

Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results.

**ESSENTIAL QUESTIONS:**

Why is place value important when adding whole numbers and decimal numbers?  
 How does the placement of a digit affect the value of a decimal number?  
 Why is place value important when subtracting whole numbers and decimal numbers?  
 What are the standard procedures for multiplying whole numbers?  
 How can you divide up to a four digit dividend by a two digit divisor using the standard algorithm, array, or area model?

**KEY VOCABULARY:**

multiplication/multiply, division/divide, decimal, decimal point, tenths, hundredths, products, quotients, dividends, rectangular arrays, area models, addition/add, subtraction/subtract, reasoning

*Basic Fact Assessment: Multiplication factors (0-9)*

**Standards/Objectives**

**Mastery Standards**

**Standards Clarification**

**[5-NBT.7]** 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 strategy to a written method, and explain the reasoning used.

**[5-NBT.7]** Add and subtract decimals.

**[5-NBT.5]** Fluently multiply multi-digit whole numbers using the standard algorithm.

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Opportunity for Depth Standards	Standards Clarification
[5-NBT.6] Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	[5-NBT.6] Find whole number quotients to 4x2 using strategies and models. <b>*They do not have to use the standard algorithm here*</b>

**Resources for Quarter 1 Unit 2**

<p>Engage New York Module 1 Topic D – (NBT7)  <a href="https://www.engageny.org/resource/grade-5-mathematics-module-1">https://www.engageny.org/resource/grade-5-mathematics-module-1</a></p> <p>Module 2 Topics B (Lessons 5-9), E (Lessons 17-18), &amp; F – (NBT5, NBT6)  <a href="https://www.engageny.org/resource/grade-5-mathematics-module-2">https://www.engageny.org/resource/grade-5-mathematics-module-2</a></p> <p>FAL: <i>Division and Interpreting Remainders</i> – (NBT6)  <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf</a></p>	<p>Georgia Standards Unit 1 – (NBT5, NBT6)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf</a></p> <p>Unit 2 – (NBT7)  <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-2.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-2.pdf</a></p> <p>FAL: <i>Division and Interpreting Remainders</i> – (NBT6)  <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf</a></p>	<p>North Carolina – (NBT5, NBT6, NBT7)  <a href="http://3-5sctask.ncdpi.wikispaces.net/5.NBT.5-5.NBT.7">http://3-5sctask.ncdpi.wikispaces.net/5.NBT.5-5.NBT.7</a></p> <p>FAL: <i>Division and Interpreting Remainders</i> – (NBT6)  <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf</a></p>	<p>Math In Focus          Chapter 2 Lesson 3 – (NBT5)          Chapter 2 Lesson 4 – (NBT6)</p> <p>FAL: <i>Division and Interpreting Remainders</i> – (NBT6)  <a href="http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf">http://education.ky.gov/curriculum/connopro/Math/Documents/5_KDE_Numbers_and_Operations_Base_Ten_Division_and_Interpreting_Remainders_Grade_5.pdf</a></p>
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**Focus Standards for Mathematical Practice**

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Qtr. 1: Weeks 7-9

September 18 – October 6 (15 days)

Grade 5 Unit 3: Measurement and Algebra

**UNIT OVERVIEW: MEASUREMENT AND ALGEBRA**

Convert Customary Units & Representing Algebraic Thinking

**ESSENTIAL QUESTIONS:**

What is a numeral expression?  
 Why is it important to solve a problem using the order of operations?  
 How can I convert customary and metric units?

**KEY VOCABULARY:**

conversion/convert, metric, customary, liquid volume, mass, length, kilometer (km), meter (m), centimeter (cm), kilogram (kg), gram (g), liter (L), milliliter (mL), inch (in), foot (ft), yard (yd), mile (mi), ounce (oz), pound (lb), cup (c), pint (pt), quart (qt), gallon (gal), parentheses, brackets, braces, numerical expressions, expression

*Basic Fact Assessment: Multiplication factors (0-9)*

**Standards/Objectives**

**Supporting Standards**

**[5-MD.1]** 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.

**Standards Clarification**

**[5-MD.1]** Convert among customary units including length, weight, capacity and convert among metric units.

**Opportunity for Depth Standards**

**[5-OA.1]** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

- This standard builds on the expectations of third grade where students are expected to start learning the conventional order. Students need experiences with multiple expressions that use grouping symbols throughout the year to develop understanding of when and how to use parentheses, brackets, and braces. First, students use these symbols with whole numbers. Then the symbols can be used as students add, subtract, multiply and divide decimals and fractions.

**Standards Clarification**

**[5-OA.1]** Evaluate expressions w/ parentheses, brackets, braces.

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<p><b>[5-OA.2]</b> Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.</p> <ul style="list-style-type: none"> <li>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product. This standard refers to expressions. Expressions are a series of numbers and symbols (+, −, ×, ÷) without an equals sign. Equations result when two expressions are set equal to each other (<math>2 + 3 = 4 + 1</math>).</li> </ul>	<p><b>[5-OA.2]</b> Write expressions connected to calculations, interpret expressions w/o evaluating.</p>
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**Resources for Quarter 1 Unit 3**

<p><b>Engage New York Module 2 Topics B (Lessons 3 &amp; 4) – (MD1, OA1, OA2)</b> <a href="https://www.engageny.org/resource/grade-5-mathematics-module-2">https://www.engageny.org/resource/grade-5-mathematics-module-2</a></p>	<p><b>Georgia Standards Unit 1 - (OA1, OA2)</b> <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf</a></p> <p><b>Unit 6 – (MD1)</b> <a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/5-Math-Unit-6.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/5-Math-Unit-6.pdf</a></p>	<p><b>North Carolina – (MD1, OA1, OA2)</b> <a href="http://3-5sctask.ncdpi.wikispaces.net/5.MD.1">http://3-5sctask.ncdpi.wikispaces.net/5.MD.1</a></p> <p><a href="http://3-5sctask.ncdpi.wikispaces.net/5.OA.1-5.OA.2">http://3-5sctask.ncdpi.wikispaces.net/5.OA.1-5.OA.2</a></p>	<p><b>Math In Focus – N/A</b></p> <p><b>K-5 Resources – (MD1, OA1, OA2)</b> <a href="http://www.k-5mathteachingresources.com/5th-grade-number-activities.html">http://www.k-5mathteachingresources.com/5th-grade-number-activities.html</a></p>
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