Fifth Grade Math Curriculum Map

Quarter 1-Mid Quarter 1				
Domains	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*
Cluster	Understand the place value system.	Understand the place value system.	Understand the place value system.	Understand the place value system.
Target Standards	MAFS.5.NBT.1.1 : Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represent it in the place to its right and 1/10 of what it represents in the place to its left.	MAFS.5.NBT.1.2 : 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.	MAFS.5.NBT.1.3 : Read, write, and compare decimals to thousandths.	MAFS.5.NBT.1.4 : Use place value understanding to round decimals to any place.
Mathematical Practices	6 and 7	6 and 7	6 and 7	6 and 7
Objective/Learning Goal/SWBT	*Explain that a digit in one place is worth ten times the amount of the digit to its right. *Explain that a digit in one place is 1/10 the value of the digit to its left. *Compare values of digits across multiple place values.	*Express powers of ten using whole number exponents. *Explain patterns in the number of zeros of the product when multiplying a number by powers of 10. *Explain patterns in the placement of the decimal point when a decimal is multiplied by a power of 10. *Explain patterns in the placement of the decimal point when a decimal is divided by a power of 10.	*Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. *Compare two decimals to thousandths, based on meanings of the digits in each place, using <, >, and =.	*Round decimals within millions to hundredths. *Explain how to use place value to round decimals to any place. *Demonstrate competency with place value concepts in the context of rounding.
IReady Resources	Unit 1 Lesson 1	Unit 1 Lesson 2	Unit 1 Lessons 3-4	Unit 1 Lesson 4

5/2016
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Fifth Grade Math Curriculum Map

Mid Quarter 1-End Quarter 1

Domains	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*
Cluster	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Perform operations with multi-digit whole numbers and with decimals to hundredths.
Target Standards	MAFS.5.NBT.2.5 : Fluently multiply multi-digit whole numbers using the standard algorithm.	MAFS.5.NBT.2.6 : 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.	MAFS.5.NBT.2.7 : Add, subtract, multiply, and divide decimals to hundredths, using concrete models of 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 strategy used.
Mathematical Practices	3, 5, 7 and 8	1 and 8	2 and 3
Objective/Learning Goal/SWBT	*Recall basic multiplication facts. *Describe and demonstrate how the standard algorithm relates to previously taught multiplication strategies based on place value and the properties of operations. *Use the standard algorithm for multi-digit whole number multiplication with ease (5-digit by 2-digit).	*Explain the inverse relationship between multiplication and division. *Describe and demonstrate the process of division using a variety of models. *Illustrate and explain calculations by using equations, rectangular arrays, and/or area models. *Model and apply a variety of strategies to find whole-number quotients of whole numbers with up to four-digit dividends with two-digit divisors. Interpret remainders in the context of a story. *Use an understanding of the relationship between multiplication and division to check the quotient.	*Add and subtract decimals to hundredths, using strategies. *Multiply and divide decimals, using strategies based on an understanding of place value and properties of operations. *Represent and justify addition, subtraction, multiplication, and division strategies and reasoning used to solve problems.
IReady Resources	Unit 1 Lesson 5	Unit 1 Lesson 6	Unit 1 Lessons 7-9

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Fifth Grade Math Curriculum Map

Quarter 2-Mid Quarter 2

Domains	Numbers and Operations-Fractions	Numbers and Operations-Fractions	Numbers and Operations-Fractions	Numbers and Operations-Fractions	Numbers and Operations-Fractions
Cluster	Use equivalent fractions as a strategy to add and subtract fractions.	Use equivalent fractions as a strategy to add and subtract fractions.	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
Target Standards	MAFS.5.NF.1.1 : Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	MAFS.5.NF.1.2 : Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	MAFS.5.NF.2.3 : Interpret a fraction as division of the numerator by the denominator. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	MAFS.5.NF.2.4 : Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	MAFS.5.NF.2.5 : Interpret multiplication as scaling (resizing) by: a: Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b: Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number; explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence.
Mathematical Practices	2 and 4	2 and 4	1, 4 and 5	1, 4 and 5	2, 4 and 6
Objective/Learning Goal/SWBT	*Apply concepts of factors, multiples, and equivalent fractions to find common denominators. *Represent addition and subtraction of fractions, including mixed numbers, with unlike denominators using concrete models, graphical models, and equations.	*Solve word problems involving addition and subtraction of fractions with like and unlike denominators, using visual fraction models or equations. *Use benchmark fractions and number sense of fractions to estimate and assess reasonableness of answers.	*Illustrate fractions. *Solve word problems involving the division of whole numbers. *Illustrate a solution strategy using visual fraction models or equations that represent the problem. *Interpret and explain why the quotient is a whole number, mixed number, or fraction.	*Use the understanding of multiplication by a fraction to develop the general formula for the product of two fractions. *Divide a rectangle with fractional side lengths into rectangles whose sides are the corresponding unit features.	*Explain why multiplying a given number by a number or fraction greater than 1 results in a product greater than the given number. *Explain why multiplying a given number by a fraction less than 1 reults in a product less than the given number. *Relate the principle of fraction equivalence to the effect of multiplying a fraction by 1.
IReady Resources	Unit 2 Lesson 10	Unit 2 Lesson 11	Unit 2 Lesson 12	Unit 2 Lessons 13-14	Unit 2 Lesson 15

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Fifth Grade Math Curriculum Map

Mid Quarter 2 – End Quarter 2				
Domains	*Numbers and Operations: Fractions*	*Numbers and Operations: Fractions*	*Operations and Algebraic Thinking*	*Measurement and Data*
Cluster	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	Write and interpret numerical expressions.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.
Target Standards	MAFS.5.NF.2.6 : Solve real world problems involving multiplication of fractions and mixed numbers, e.g. by using visual fraction models or equations to represent the problem.	MAFS.5.NF.2.7 : Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)	MAFS.5.OA.1.1 : Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	MAFS.5.OA.1.2 : Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 x (8 + 7). Recognize that 3 x (18932 + 921) as three times as large as 18932 + 921, without having to calculate the indicated sum or product.
Mathematical Practices	2, 4, 6	1, 2	6	6
Objective/Learning Goal/SWBT	* Solve real world problems involving multiplication of fractions and mixed numbers and interpret the product in the context of the problem. * Explain or illustrate solution strategies using visual fraction models or equations that represent the problem.	* Apply an understanding of the division of whole numbers to the concept of dividing with fractions. * Create and solve story contexts where a unit fraction is divided by a whole number (not zero) using a visual model. * Divide whole numbers by unit fractions using visual models. * Create and solve story contexts where a whole number (not zero) is divided by a unit fraction using a visual model. * Solve real world problems involving division of whole numbers by unit fractions using fraction models and equations.	* Perform operations in the conventional order. * Simplify and write numerical expressions that may include parentheses, brackets, and/or braces. * Evaluate expressions and determine why the value changes when the order changes.	*Apply an understanding of operations and grouping symbols to write numerical expressions without evaluating them. *Apply an understanding of operations and grouping symbols to interpret the meaning of numerical expressions without evaluating them.
IReady Resources	Unit 2 Lesson 16	Unit 2 Lessons 17 - 18	Unit 2 Lesson 19	Unit 2 Lesson 19

Fifth Grade Math Curriculum Map

Quarter 3 – Mid Quarter 3					
Domains	*Measurement and Data*	*Measurement and Data*	*Measurement and Data*	*Measurement and Data*	*Measurement and Data*
Cluster	Convert like measurement units within a given measurement system.	Represent and interpret data.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.
Target Standards	MAFS.5.MD.1.1 : Convert among different-sized standard measurement units (i.e., km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec) 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.	MAFS.5.MD.2.2 : Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	MAFS.5.MD.3.3 : Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	MAFS.5.MD.3.4 : Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	MAFS.5.MD.3.5 : Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base.
Mathematical Practices	1, 2, 5, 6	1, 2, 5, 6, 7	2, 5	2, 5	2, 5
Objective/Learning Goal/SWBT	* Compare units of measure within the same system and same dimensions. * Convert units within the same system. * Apply knowledge of length, weight, mass, and time to solve multi-step word problems using measurement conversions.	* Measure and record objects to the nearest 1/2, 1/4, or 1/8 unit. * Measure and record objects to the nearest 1/2, 1/4, or 1/8 unit. * Record and display a set of measurements in fractions of a unit on a line plot. * Solve problems involving information presented in line plots and display a set of measurements in fractions of a unit on a line plot. * Solve problems involving information presented in line plots	* Identify volume as an attribute of a solid figure. * Explain that a cube with 1 unit side length is "one cubic unit" of volume. * Explain a process for finding the volume of a solid figure by filling it with unit cubes without gaps and overlaps.	* Measure the volume of a hollow three-dimensional figure by filling it with unit cubes without gaps and counting the number of unit squares. * Determine the appropriate size unit to measure the volume of a rectangular prism or cube.	* Relate finding the product of three numbers (length, width, and height) to finding volume. * Use the formula for area to develop an understanding of volume. * Relate the associative property of multiplication to finding volume. * Calculate volume of rectangular prisms and cubes, with whole number edge lengths, using the formula for volume in real world and mathematical problems.
IReady Resources	Unit 4 Lessons 21 - 22	Unit 4 Lesson 23	Unit 4 Lesson 24	Unit 4 Lesson 25	Unit 4 Lessons 26 - 27

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Fifth Grade Math Curriculum Map

Mid Quarter 3 – End Quarter 3					
Domains	*Geometry*	*Geometry*	*Measurement and Data*	*Measurement and Data*	*Measurement and Data*
Cluster	Graph points on the coordinate plane to solve real world and mathematical problems.	Graph points on the coordinate plane to solve real world and mathematical problems.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	Classify two-dimensional figures into categories based on their properties.
Target Standards	MAFS.5.G.1.1 : Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond.	MAFS.5.G.1.2 : Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	MAFS.5.OA.2.3 : Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	MAFS.5.G.2.4 : Classify and organize two-dimensional figures into Venn diagrams based on the attributes of the figures.	MAFS.5.G.2.3 : Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*
Mathematical Practices	4, 6	4, 6	4, 6	3, 7	3, 7
Objective/Learning Goal/SWBT	* Draw a coordinate plane with two intersecting perpendicular lines. * Identify the intersection as the origin and the point where 0 lies on each of the lines. * Label the horizontal axis as the x-axis, and the vertical axis as the y-axis. * Identify an ordered pair as an x-coordinate followed by a y-coordinate. * Explain the relationship between an ordered pair and its location on the coordinate plane.	* Determine when a mathematical problem has a set of ordered pairs. * Use appropriate tools strategically to identify, locate and plot ordered pairs of whole numbers on a graph in the first quadrant of the coordinate plane. * Describe the horizontal and vertical movements necessary to get from one point to another on a coordinate plane. * Determine the distance between two ordered pairs using appropriate tools or strategies. * Relate the coordinate values of any graphed point to the context of the problem.	* Generate two numerical patterns with the same starting number for two given rules. * Explain the relationship between the two numerical patterns by comparing how each pattern grows or by comparing the relationship between each of the corresponding terms from each pattern. * Form ordered pairs out of corresponding terms from each pattern and graph them on a coordinate plane. * Observe and explain patterns and trends represented in the coordinate plane.	* Organize figures into a Venn diagram based on determined attributes.	* Compare and describe the geometric attributes of two-dimensional figures. * Categorize two-dimensional figures according to their individual and shared geometric attributes. * Explain the reasoning for the determined categories.
IReady Resources	Unit 5 Lesson 28	Unit 4 Lesson 29	Unit 3 Lesson 20	Unit 5 Lesson 30	Unit 5 Lesson 31

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Fifth Grade Math Curriculum Map

	Quarter 4-Mid Quarter 4		
Domains	*Numbers and Operations in Base Ten*	*Numbers and Operations in Base Ten*	*Operations and Algebraic Thinking*
Cluster	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Write and interpret numerical expressions.
Target Standards	MAFS.5.NBT.2.5 : Fluently multiply multi-digit whole numbers using the standard algorithm.	MAFS.5.NBT.2.6 : 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.	MAFS.5.OA.1.1 : Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
Mathematical Practices	3, 5, 7 and 8	1 and 8	6
Objective/Learning Goal/SWBT	*Recall basic multiplication facts. *Describe and demonstrate how the standard algorithm relates to previously taught multiplication strategies based on place value and the properties of operations. *Use the standard algorithm for multi-digit whole number multiplication with ease (5- digit by 2-digit).	*Explain the inverse relationship between multiplication and division. *Describe and demonstrate the process of division using a variety of models. *Illustrate and explain calculations by using equations, rectangular arrays, and/or area models. *Model and apply a variety of strategies to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors. Interpret remainders in the context of a story. *Use an understanding of the relationship between multiplication and division to check the quotient.	*Perform operations in the conventional order. *Simplify and write numerical expressions that may include parentheses, brackets, and/or braces. *Evaluate expressions and determine why the value changes when the order changes.
IReady Resources	Lesson 5	Lesson 6	Lesson 19

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<table>
<tr><th colspan="3" style="text-align:center">Mid Quarter 4-End Quarter 4</th></tr>
<tr><td>Domains</td><td>Numbers and Operations: Fractions</td><td>Measurement and Data</td></tr>
<tr><td>Cluster</td><td>Use equivalent fractions as a strategy to add and subtract fractions.</td><td>Convert like measurement units within a given measurement system.</td></tr>
<tr><td>Target Standards</td><td>MAFS.5.NF.1.1 : Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc) / bd$.)</td><td>MAFS.5.MD.1.1 : Convert among different-sized standard measurement units (i.e., km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec) 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.</td></tr>
<tr><td>Mathematical Practices</td><td>2 and 4</td><td>1, 2, 5 and 6</td></tr>
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<tr><td>IReady Resources</td><td>Lesson 10</td><td>Lessons 21-22</td></tr>
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