5TH GRADE MATH

5

EUREKA SCOPE AND SEQUENCE CHART

Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Place Value and Decimal Fractions	Multi-Digit Whole Number and Decimal Fraction Operations	Addition and Subtraction of Fractions	Multiplication and Division of Fractions and Decimal Fractions	Addition and Multiplication with Volume and Area	Problem Solving with the Coordinate Plane
Approximately 4 Weeks	Approximately 8 Weeks	Approximately 4 Weeks	Approximately 9 Weeks	Approximately 7 Weeks	Approximately 4 Weeks
MGSE5.NBT.1*	MGSE5.OA.1*	MGSE5.NF.1*	MGSE5.OA.1*	MGSE5.NF.4*	MGSE5.OA.2
MGSE5.NBT.2*	MGSE5.OA.2	MGSE5.NF.2*	MGSE5.OA.2	MGSE5.NF.6*	MGSE5.OA.3
MGSE5.NBT.3*	MGSE5.NBT.1*		MGSE5.NBT.7*	MGSE5.MD.3*	MGSE5.G.1*
MGSE5.NBT.4*	MGSE5.NBT.2*		MGSE5.NF.3*	MGSE5.MD.4*	MGSE5.G.2*
MGSE5.NBT.7*	MGSE5.NBT.5*		MGSE5.NF.4*	MGSE5.MD.5*	
MGSE5.MD.1	MGSE5.NBT.6*		MGSE5.NF.5	MGSE5.G.3	
	MGSE5.NBT.7*		MGSE5.NF.6*	MGSE5.G.4*	
	MGSE5.MD.1		MGSE5.NF.7*		
			MGSE5.MD.1		
			MGSE5.MD.2		

Key: G= Geometry, MD=Measurement and Data, NBT= Number and Operations in Base Ten, NF = Number and Operations, Fractions, OA = Operations and Algebraic Thinking

***Prioritized Standards: Grade level standards of highest priority have been identified. Pacing has been modified to allow sufficient time for in-depth instruction and practice.**

Supporting Standards: Key concepts and skills, from these grade level standards, will be used to support the Prioritized Standards

Module Name	Module Description	Georgia Standards of Excellence	Module Duration
Module 1 **Place Value and Decimal Fractions**	**In this module students will:** **Topic A:** Multiplicative Patterns on the Place Value Chart **Topic B:** Decimal Fractions and Place Value Patterns **Topic C:** Place Value and Rounding Decimal Fractions **Topic D:** Adding and Subtracting Decimals **Topic E:** Multiplying Decimals **Topic F:** Dividing Decimals	**Understand the place value system.** **MGSE5.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. **MGSE5.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. **MGSE5.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, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (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. **MGSE5.NBT.4** Use place value understanding to round decimals up to the hundredths place.	**Approximately 4 Weeks**

		Perform operations with multi-digit whole numbers and with decimals to hundredths. **MGSE5.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. **Convert like measurement units within a given measurement system.** **MGSE5.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. Combine lessons on converting measurement units in order to reduce the amount of time spent on this topic.	
Module 2 **Multi-Digit Whole Number and Decimal Fraction Operations**	**In this module students will:** . **Topic A:** Mental Strategies for Multi-Digit Whole Number Multiplication **Topic B:** The Standard Algorithm for Multi-Digit Whole Number Multiplication **Topic C:** Decimal Multi-Digit Multiplication	**Write and interpret numerical expressions.** **MGSE5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **MGSE5.OA.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) is three times as large*	**Approximately 8 Weeks**

	Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication **Topic E:** Mental Strategies for Multi-Digit Whole Number Division **Topic F:** Partial Quotients and Multi-Digit Whole Number Division **Topic G:** Partial Quotients and Multi-Digit Decimal Division **Topic H:** Measurement Word Problems with Multi-Digit Division	*as 18931 + 921, without having to calculate the indicated sum or product.* **Understand the place value system.** **MGSE5.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. **MGSE5.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. **Perform operations with multi-digit whole numbers and with decimals to hundredths.** **MGSE5.NBT.5** Fluently multiply multi-digit whole numbers using the standard algorithm (or other strategies demonstrating understanding of multiplication) up to a 3 digit by 2-digit factor. **MGSE5.NBT.6** Fluently divide up to 4-digit dividends and 2-digit divisors by using at least one of the following methods: 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 or concrete models. (e.g., rectangular arrays, area models)	

		Perform operations with multi-digit whole numbers and with decimals to hundredths. **MGSE5.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. **Convert like measurement units within a given measurement system.** **MGSE5.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. Combine lessons on converting measurement units in order to reduce the amount of time spent on this topic.	
Module 3 **Addition and Subtraction of Fractions**	**In this module students will:** **Topic A:** Equivalent Fractions **Topic B:** Making Like Units Pictorially **Topic C:** Making Like Units Numerically **Topic D:** Further Applications	**Use equivalent fractions as a strategy to add and subtract fractions.** **MGSE5.NF.1** Add and subtract fractions and mixed numbers with unlike denominators by finding a common denominator and equivalent fractions to produce like denominators. **MGSE5.NF.2** Solve word problems involving addition and subtraction of fractions, including cases of unlike denominators (e.g., by using visual fraction models or equations to represent the problem). Use benchmark	**Approximately 4 Weeks**

		fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + ½ = 3/7, by observing that 3/7 < ½ .	
Module 4 **Multiplication and Division of Fractions and Decimal Fractions**	**In this module students will:** **Topic A:** Line Plots of Fraction Measurements **Topic B:** Fractions as Division **Topic C:** Multiplication of a Whole Number by a Fraction **Topic D:** Fraction Expressions and Word Problems **Topic E:** Multiplication of a Fraction by a Fraction **Topic F:** Multiplication with Fractions and Decimals as Scaling and Word Problems **Topic G:** Division of Fractions and Decimal Fractions **Topic H:** Interpretation of Numerical Expressions	**Write and interpret numerical expressions.** **MGSE5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. **MGSE5.OA.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) is three times as large as 18931 + 921, without having to calculate the indicated sum or product.* **Perform operations with multi-digit whole numbers and with decimals to hundredths.** **MGSE5.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.	**Approximately 9 Weeks**

		Apply and extend previous understandings of multiplication and division to multiply and divide fractions. **MGSE5.NF.3** Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). 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. Example: $\frac{3}{5}$ can be interpreted as "divided by 5 and as 3 shared by 5". **MGSE5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Apply and use understanding of multiplication to multiply a fraction or whole number by a fraction. Examples: $\frac{a}{b}$ x q as $\frac{a}{b}$ x $\frac{q}{1}$ and $\frac{a}{b}$ x $\frac{c}{d} = \frac{ac}{bd}$ b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. **MGSE5.NF.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. Example 4 x 10 is twice as large as 2 x 10 b. Explaining why multiplying a given number by a fraction greater than 1 results in a product	

		greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining 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 a/b = (n x a)/(n x b) to the effect of multiplying a/b by 1. **MGSE5.NF.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. **MGSE5.NF.7** Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **a.** Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context $(\frac{1}{3}) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that for $(\frac{1}{3} \div 4 = \frac{1}{12}$ because $\left(\frac{1}{12}\right) x\ 4 = \frac{1}{3}$. **b.** Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (\frac{1}{5})$ and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div \left(\frac{1}{5}\right) = 20$ because$20\ x\ \left(\frac{1}{5}\right) = 4$. **c.** Solve real world problems involving division of unit fractions by non-zero whole numbers and division of	

		whole numbers by unit fractions, e.g., by using visual *fraction* models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $\frac{1}{3}$cup servings are in 2 cups of raisins? **Convert like measurement units within a given measurement system.** **MGSE5.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. Combine lessons on converting measurement units in order to reduce the amount of time spent on this topic. **MGSE5.MD.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. Eliminate lessons and problems on representing and interpreting data using line plots that do not strongly reinforce the fraction work of this grade (5.NF).	

Module 5 **Addition and Multiplication with Volume and Area**	**In this module students will:** **Topic A:** Concepts of Volume **Topic B:** Volume and the Operations of Multiplication and Addition **Topic C:** Area of Rectangular Figures with Fractional Side Lengths **Topic D:** Drawing, Analysis, and Classification of Two-Dimensional Shapes	**MGSE5.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Apply and use understanding of multiplication to multiply a fraction or whole number by a fraction. Examples: $\frac{a}{b}$ x q as $\frac{a}{b}$ x $\frac{q}{1}$ and $\frac{a}{b}$ x $\frac{c}{d} = \frac{ac}{bd}$ b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. **MGSE5.NF.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. **Geometric Measurement: understand concepts of volume and relate volume to multiplication and division.** **MGSE5.MD.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. **MGSE5.MD.4** Measure volumes by counting unit cubes, using cubic cm, cubic ft., and improvised units.	**Approximately 7 Weeks**

		MGSE5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **a.** 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. Represent threefold whole-number products as volumes, e.g. to represent the associative property of multiplication. **b.** Apply the formulas V = l x w x h and V = b x h for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems. **c.** Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. **Classify two-dimensional figures into categories based on their properties.** **MGSE5.G.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.	

		Combine lessons on classifying two-dimensional figures into categories based on properties in order to reduce the amount of time spent on this topic. **MGSE5.G.4** Classify two-dimensional figures in a hierarchy based on properties (*polygons, triangles, and quadrilaterals*)**.**	
Module 6 **Problem Solving with the Coordinate Plane**	**In this module students will:** **Topic A:** Coordinate Systems **Topic B:** Patterns in the Coordinate Plane and Graphing Number Patterns from Rules **Topic C:** Drawing Figures in the Coordinate Plane **Topic D:** Problem Solving in the Coordinate Plane **Topic E:** Multi-Step Word Problems **Topic F:** The Years In Review: A Reflection on *A Story of Units*	**Graph points on the coordinate plane to solve real-world and mathematical problems.** **MGSE5.G.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 (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate). **MGSE5.G.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. **Write and interpret numerical expressions.**	**Approximately 4 weeks**

		MGSE5.OA.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) is three times as large as 18931 + 921, without having to calculate the indicated sum or product.* **MGSE5.OA.3** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms form the two patterns, and graph the ordered pairs on a coordinate plan. *For example, given the rule " Add 3" and starting at number 0, and given the rule "Add ^" and staring number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*	