5ᵀᴴ Grade Math

(5)

SCOPE AND SEQUENCE CHART					
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**	**Unit 5**	**Unit 6**
Place Value and Whole Numbers	**Adding and Subtracting with Fractions**	**Multiplying and Dividing with Fractions**	**Adding, Subtracting, Multiplying, and Dividing Decimals**	**Volume Measurement**	**Coordinate Plane and 2D Figures**
Approximately 8 Weeks	Approximately 5 Weeks	Approximately 7 Weeks	Approximately 6 Weeks	Approximately 4 Weeks	Approximately 2 Weeks
MGSE5.NBT.1* MGSE5.NBT.2*	MGSE5.NF.1*	MGSE5.NF.3*	MGSE5.NBT.7* MGSE5.MD.1	MGSE5.MD.3*	MGSE5.G.1* MGSE5.OA.3
MGSE5.NBT.3*	MGSE5.NF.2*	MGSE5.NF.4* MGSE5.NF.5	MGSE5.OA.1* MGSE5.OA.2	MGSE5.MD.4*	MGSE5.G.2*
MGSE5.NBT.4*		MGSE5.NF.6*		MGSE5.MD.5*	MGSE5.G.4* MGSE5.G.3
MGSE5.NBT.5*		MGSE5.NF.7* MGSE5.MD.2			
MGSE5.NBT.6*					

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.

Prerequisite Concepts and Skills: Prioritized concepts and skills, from the previous grade level standards, which are most important for success with the current grade-level content, will be integrated, where they best fit, to address learning loss.

Unit Name	Unit Description	Georgia Standards of Excellence	Unit Duration

Unit 1
 	
Place Value and Whole Numbers
	In this unit students will:
	
	• Solve problems by showing understanding that the location (place) of a digit in a decimal number determines the value of a digit.
	• Investigate the effects of multiplying whole numbers by powers of 10.
	• Understand that rounding decimals should be "sensible" for the context of the problem.
	• Understand that decimal numbers can be represented with models.
	• Compare two decimals that are written in different ways.
	• Apply strategies for multiplying a 2- or 3- digit number by a 2-digit number.
	• Develop paper-and-pencil multiplication algorithms (not limited to the traditional algorithm) up to 3-digit by 2-digit factors.
	• Apply paper-and-pencil strategies for division (not the standard algorithm)
		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.
		Incorporated Grade-Level Concepts and/or Skills:
		▪ **Explain patterns in the decimal numbers when it is multiplied or divided by a power of 10. (MGSE5.NBT.2)**
		Prerequisite Concepts and Skills:
		• **(MGSE4.NBT.1) Recognize that in a multi-digit whole number, a digit in any one place represents ten times what it represents in the place to its right**
		
		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.
		Prerequisite Concepts and Skills:
		• **(MGSE4.NBT.2) Compare two multi-digit whole numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons**
			Approximately 8 Weeks

	• Solve problems involving multiplication and division.	• **(MGSE4.NF.7) Compare two decimals to hundredths by reasoning about their size** **MGSE5.NBT.4** Use place value understanding to round decimals up to the hundredths place. **Prerequisite Concepts and Skills:** • **(MGSE4.NBT.3) Round multi-digit whole numbers to any place using place value understanding** **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. **Prerequisite Concepts and Skills:** • **(MGSE4.NBT.5) Multiply two two-digit numbers, using strategies based on place value and the properties of operations** **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) **Prerequisite Concepts and Skills:** • **(MGSE4.NBT.6) Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors**	

		Use equivalent fractions as a strategy to add and subtract fractions.	
Unit 2 **Adding and Subtracting with Fractions**	In this unit students will: • Apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators • Use equivalent fractions as a strategy to add and subtract fractions and mixed numbers with unlike denominators • Develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. • Communicate precisely by engaging in discussion about their reasoning using appropriate mathematical language • Solve word problems involving addition of fraction using visual fraction model or equation to represent the problem • Use benchmark fractions to estimate the sum and difference between fractions and mixed numbers .	**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. **Prerequisite Concepts and Skills:** • **(MGSE4.NF.1) Generate equivalent fractions and explain why two or more fractions are equivalent** • **(MGSE4.NF.3c) Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.** **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 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 .	**Approximately 5 Weeks**
Unit 3	In this unit students will: • Explain that fractions are	Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	**Approximately 7 Weeks**

| **Multiplying and Dividing with Fractions** | another representation for division.
• Determine that fractions may represent division with a quotient less than one, and explain their reasoning.
• Determine that fractions and decimals are different representations for the same amounts and can be used interchangeably.
• Explain why the procedures for multiplying and dividing fractions make sense by using the meaning of fractions, and the meanings of multiplication and division
• Divide unit fractions by whole numbers and whole numbers by unit 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: $\frac{a}{b} \times q$ as $\frac{a}{b} \times \frac{q}{1}$ and $\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$
  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.
Incorporated Grade-Level Concepts and/or Skills:
  • **Interpret multiplication as scaling (MGSE4.NF.5)**
Prerequisite Concepts and Skills:
  • **(MGSE4.NF.4) Multiply a fraction by a whole number e.g., by using a visual such as a number line or area model.**

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 $(\frac{1}{12}) x 4 = \frac{1}{3}$. 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 $4 \div (\frac{1}{5}) = 20$ because $20 x (\frac{1}{5}) = 4$. 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?	
Unit 4 **Adding, Subtracting,**	In this unit, students will: • Understand that decimal numbers can be represented with models.	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;	**Approximately 6 Weeks**

| **Multiplying, and Dividing Decimals** | • Understand that addition and subtraction with decimals are based on the fundamental concept of adding and subtracting the numbers of same value
• Add and subtract decimals using concrete models and drawings
• Use relationship between addition and subtraction to solve subtraction problem and explain the reasoning used
• Understand that multiplication and division are inverse operations of each other.
• Understand that rules for multiplication and division of whole numbers also apply to decimals.
• Explain their reasoning behind the changing magnitude of a number as it is multiplied and divided by a power of ten.
• Determine the placement of the decimal point in a multiplication or division problem using reasoning, and justify their answer using estimation. | relate the strategy to a written method and explain the reasoning used.

Prerequisite Concepts and Skills:
• **(MGSE4.NF.7) Compare two decimals to hundredths by reasoning about their size**
Incorporated Grade-Level Concepts and/or Skills:
▪ **Solve multi-step, real world problems by using conversions of different units (weight, length, time) within a given measurement system (MGSE5.MD.1)**
Write and interpret numerical expressions.
MGSE5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
Incorporated Grade-Level Concepts and/or Skills:
▪ **Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them (MGSE5.OA.2)** | |
| **Unit 5** | In this unit students will:

• Recognize volume as an attribute of three- dimensional space.
• Understand that volume can be | **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. | **Approximately 4 Weeks** |

| **Volume Measurement** | measured by finding the total number of same size units of volume required to fill the space without gaps or overlaps.
• Understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume.
• Decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes.
• Select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume.
• Measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems. | 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.

Incorporated Grade-Level Concepts and/or Skills:
• **Measure volumes by counting unit cubes (MGSE5.MD.4)**

Prerequisite Concepts and Skills:
(MGSE3.MD.5) Recognize area as an attribute of plane figures and understand concepts of area measurement.

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 $V = l \times w \times h$ and $V = b \times h$ 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.	
Unit 6 **Coordinate Plane and 2D Figures**	In this unit, students will: • Plot a point on a coordinate plane where the point represents the intersection of a pair of perpendicular lines. • Describe what the first and the second number in the ordered pair mean • Use the coordinate to represent real-world scenarios • Explain the meaning of the coordinate points in the context presented • Identify similarities and differences among two-dimensional figures. • Reason about attributes (properties) of two-dimensional figures. • Describe that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category	**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). **Incorporated Grade-Level Concepts and/or Skills:** • **Graph ordered pairs on a coordinate plane to show relationship between two patterns (MGSE5.OA.3)** **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. **Classify two-dimensional figures into categories based on their properties.** **MGSE5.G.4** Classify two-dimensional figures in a hierarchy based on properties (*polygons, triangles, and quadrilaterals*)**.** **Incorporated Grade-Level Concepts and/or Skills:**	**Approximately 2 weeks**

		▪ **Describe that the attributes that belong to a category of two-dimensional figures also belong to other figures in that category (MGSE5.G.3)**	