2022 – 2023 Math Pacing Guide

5th Grade

	Unit 1: Whole Numbers		
Time Frame	7 weeks		
Instructional Dates	August 8, 2022 – September 23, 2022		
Resources for Standards	***Grade Level Overview:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Grade-Level-Overview.pdf*** ***GaDOE GSE Unit 1:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf*** **Planning is based on standards primarily using GSE Unit 1, enVision, and Canvas resources. The GSE Grade Level Overview should be read prior to beginning instruction. The following enVision lessons address standards in Unit 1. Additional resources to supplement those below can be found in Canvas.**		
	5.NBT.1 5.NBT.2 • Topic 1 (Lessons 1 – 2) • GSE Unit 1 • K-5 Math Teaching Resources	**5.NBT.5** • Topic 3 • GSE Unit 1 • K—5 Math Teaching Resources	**5.NBT.6** • Topic 5 • GSE Unit 1 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**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 $\frac{1}{10}$ of what it represents in the place to its left. **MGSENBT.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).		

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	Unit 2: Adding and Subtracting with Decimals		
Time Frame	3 weeks		
Instructional Dates	September 26, 2022 – October 14, 2022		
Resources for Standards	***GaDOE GSE Unit 2:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-2.pdf***		
	Planning is based on standards primarily using GSE Unit 2, enVision, and Canvas resources. The following enVision lessons address standards in Unit 2. Additional resources to supplement those below can be found in Canvas.		
	5.NBT.3 5.NBT.4 • Topic 1 (Lessons 3 – 7) • GSE Unit 2 • K-5 Math Teaching Resources	**5.NBT.7** • Topic 2 • GSE Unit 2 • K—5 Math Teaching Resources	**5.NBT.1** • GSE Unit 2 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**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 $\frac{1}{10}$ of what it represents in the place to its left. 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., $347.392 = (3 \times 100) + (4 \times 10) + (7 \times 1) + (3 \times \frac{1}{10}) + (9 \times \frac{1}{100}) + (2 \times \frac{1}{1000})$. 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. **Perform operations with multi-digit whole numbers and with decimals to hundredths.** **MGSE5.NBT.7 Add, subtract**, ~~multiply~~, and ~~divide~~[1] 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.		

[1]**Multiplication & Division of decimals will be taught be taught in Unit 3.**

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	Unit 3: Multiplying and Dividing with Decimals
Time Frame	3 weeks
Instructional Dates	October 17, 2022 – November 4, 2022
Resources for Standards	***GaDOE GSE Unit 3:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-3.pdf***
	Planning is based on standards primarily using GSE Unit 3, enVision, and Canvas resources. The following enVision lessons address standards in Unit 3. Additional resources to supplement those below can be found in Canvas.
	5.NBT.2 5.NBT.7 • Topic 4 • Topic 6 • GSE Unit 3 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**Understand the place value system.** **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.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.

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	Unit 4: Adding, Subtracting, Multiplying, and Dividing Fractions		
Time Frame	8 weeks		
Instructional Dates	November 7, 2022 – January 20, 2023		
Resources for Standards	***GaDOE GSE Unit 4***: *https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-4.pdf*		
	Planning is based on standards primarily using GSE Unit 4, enVision, and Canvas resources. The following enVision lessons address standards in Unit 4. Additional resources to supplement those below can be found in Canvas.		
	5.NF.1 5.NF.2 • Topic 7 • GSE Unit 4 • K-5 Math Teaching Resources	**5.NF.3 5.NF. 4 5.NF.5 5.NF.6 5.NF.7** • Topic 8 • Topic 9 • GSE Unit 4 • K-5 Math Teaching Resources	**5.MD.2** • Topic 10 • GSE Unit 4 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**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 fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5}+\frac{1}{2}=\frac{3}{7}$, by observing that $\frac{3}{7}<\frac{1}{2}$. **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 $\frac{a}{b}$ = 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 equation to represent the problem. Example: $\frac{3}{5}$ can be interpreted as "3 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. **(continued on next page)**		

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 $\frac{a}{b} = \frac{n \times a}{n \times b}$ to the effect of multiplying $\frac{a}{b}$ 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. [1]

a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for* $\frac{1}{3} \div 4$*, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that* $\frac{1}{3} \div 4 = \frac{1}{12}$ *because* $\frac{1}{12} \times 4 = \frac{1}{3}$.

b. Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for* $4 \div$ *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* $20 \times \frac{1}{5} = 4$.

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?*

Represent and interpret data.

MGSE5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit 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.*

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	Unit 5: Volume, Measurement, and Order of Operations	
Time Frame	4 weeks	
Instructional Dates	January 23, 2023 – February 16, 2023	
Resources for Standards	***GaDOE GSE Unit 6***: *https://www.georgiastandards.org/Georgia-Standards/Frameworks/5-Math-Unit-6.pdf* ***GaDOE GSE Unit 1:*** *https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-1.pdf*	
	Planning is based on standards primarily using GSE Unit 6, enVision, and Canvas resources. The following enVision lessons address standards in Unit 6. Additional resources to supplement those below can be found in Canvas.	
	5.MD.1 5.MD.2 5.MD.3 5.MD.4 5.MD.5 • Topic 11 • Topic 12 • GSE Unit 6 • K-5 Math Teaching Resources	**5.OA.1 5.OA.2** • Topic 13 • GSE Unit 1 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**Convert like measurement units within a given measurement system.** **MGSE5.MD.1** Convert among different sized standard measurement units (mass, weight, length, time, etc.) within a given measurement system (customary and metric) (e.g., convert 5cm to 0.05m), and use these conversions in solving multi-step, real world problems. **Represent and interpret data.** **MGSE5.MD.2** Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). 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.* **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 in, cubic ft, and improvised units. **(continued on next page)**	

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	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. **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 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.	

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5th Grade

	Unit 6: Geometry and the Coordinate Plane
Time Frame	3 weeks
Instructional Dates	February 21, 2023 – March 10, 2023
Resources for Standards	***GaDOE GSE Unit 7:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-7.pdf***
	Planning is based on standards primarily using GSE Unit 7, enVision, and Canvas resources. The following enVision lessons address standards in Unit 7. Additional resources to supplement those below can be found in Canvas.
	5.G.1 5.G.2 5.OA.3 • Topic 14 • Topic 15 • GSE Unit 7 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**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. **Analyze patterns and relationships.** MGSE5.OA.3 Generate two numerical patterns using a given rule. Identify apparent relationships between corresponding terms by completing a function table or input/output table. Using the terms created, form and graph ordered pairs on a coordinate plane.

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5th Grade

	Unit 7: 2D Figures
Time Frame	2 weeks
Instructional Dates	March 13 - 24, 2023
Resources for Standards	***GaDOE GSE Unit 5:*** ***https://www.georgiastandards.org/Georgia-Standards/Frameworks/5th-Math-Unit-5.pdf***
	Planning is based on standards primarily using GSE Unit 5, enVision, and Canvas resources. The following enVision lessons address standards in Unit 5. Additional resources to supplement those below can be found in Canvas.
	5.G.3 5.G.4 • Topic 16 • GSE Unit 5 • K-5 Math Teaching Resources
Georgia Content Focus Standards	**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.[2] *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.* **MGSE5.G.4** Classify two-dimensional figures in a hierarchy based on properties (polygons, triangles, and quadrilaterals).

[2]enVision does not use the Georgia definitions for trapezoid and isosceles triangles, so caution needs to be exercised with Topic 15, Lessons 2 – 5: Georgia uses the inclusive definitions for trapezoid and isosceles triangles. The trapezoid definition states that a trapezoid is a quadrilateral with ***AT LEAST*** one pair of parallel sides using the Georgia definition means that a parallelogram, a rectangle, a rhombus, and a square can each be classified as a trapezoid. The inclusive definition of an isosceles triangle states that it has ***AT LEAST*** two equal sides. Using this definition, an equilateral triangle can also be classified as an isosceles triangle.

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	Unit 8: Show What We Know	Benchmark Review and Sept Up to 6th Grade	
Time Frame	5 weeks	2 weeks	
Instructional Dates	March 28, 2023 – May 5, 2023	May 8-19, 2023	
Resources for Standards	GSE Units 1 – 7 enVision Topics 1 – 16	enVision Topic 17 **Step Up to 6th Grade**	
Georgia Content Focus Standards	Whole group, small group and individual benchmark review based on spiraled formative benchmark exam data	Additional benchmark review for targeted non-proficiency students **Step Up to 6th Grade**	

STANDARDS FOR MATHEMATICAL PRACTICE: describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The statements provided offer a few examples of connections between the Standards for Mathematical Practice and the Content Standards of this unit. The list is not exhaustive and will hopefully prompt further reflection and discussion.

Students are expected to:

1. Make sense of problems and persevere in solving them. Students will make sense of shapes in their world by recognizing, building and creating new shapes.
2. Reason abstractly and quantitatively. Students will use numerals to refer to number of sides while observing pictures of shapes and recognize that combining shapes can change the number of sides.
3. Construct viable arguments and critique the reasoning of others. Students can clearly express, explain, organize and consolidate their ideas about shapes while composing and decomposing them.
4. Model with mathematics. Students will begin to represent shapes in their world by using drawings or objects.
5. Use appropriate tools strategically. Students will explore the use of tools (solid shapes, virtual shapes) to explore geometrical solids in the world around them, whenever appropriate.
6. Attend to precision. Students will express their ideas and reasoning while using appropriate math vocabulary in regards to the shapes and their attributes.
7. Look for and make use of structure. Students will recognize patterns while exploring for shapes such as triangles can be different sizes or colors and still be called a triangle.
8. Look for and express regularity in repeated reasoning. Students will begin to notice that as the number of sides increase on a shape, a new shape is created (triangle has 3 sides, a rectangle has 4 sides, a pentagon has 5 sides and hexagon has 6 sides.)

Mathematical Practices 1 and 6 should be evident in EVERY lesson