Georgia's K-12 Mathematics Standards Curriculum Map

Implementation beginning Fall 2023

GRADE 5

GRADE 5 MATHEMATICS CURRICULUM MAP

Georgia's K-12 Mathematics Standards Chattooga County Schools GRADE 5

Semester 1				Semester 2			
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Investigating Volume of Solid Figures	Building Conceptual Understanding of Place Value Using Measurement and Data Reasoning	Building Conceptual Understanding of Multiplication and Division with Whole Numbers	Building Fraction Understanding	Making Sense of Fraction Multiplication and Division	Extending Place Value and Working with Decimals to Solve Problems	Exploring Geometry and the Coordinate Plane	Culminating Capstone Unit
Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	Interdisciplinary Connection	
8 Days	20 Days	16 Days	16 Days	20 Days	20 Days	16 Days	8 Days
5.GSR.8 5.NR.5 5.MP.1-8	5.NR.1 5.MDR.7 5.MP.1-8	5.NR.2 5.NR.5 5.MDR.7 5.MP.1-8	5.NR.3 5.MDR.7 5.MP.1-8	5.NR.3 5.MP.1-8	5.NR.4 5.MDR.7 5.MP.1-8	5.PAR.6 5.GSR.8 5.MP.1-8	ALL STANDARDS 5.MP.1-8

Ongoing interdisciplinary learning to impact the community and to explain real-life phenomena

The concepts in each unit are presented based on a logical, mathematical progression. Each unique unit in sequence builds upon the previous unit.

The Framework for Statistical Reasoning, Mathematical Modeling Framework, and the K-12 Mathematical Practices should be taught throughout the units.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

Key for Course Standards: NR: Numerical Reasoning, PAR: Patterning & Algebraic Reasoning, GSR: Geometric & Spatial Reasoning, MDR: Measurement & Data Reasoning

GRADE 5

	Year-At-A-Glance		
	Semester 1		
Pacing Suggestion	**Unit**	**Content Standards**	**Learning Objectives**
8 Days Eureka Mod 5	**Unit 1: Investigating Volume of Solid Figures** *In this unit, students are introduced to volume as a measurable attribute of solid figures by building on their understandings of area and multiplication. Students begin by first making sense of volume by building objects and counting the cubes, then analyzing images of prisms constructed of unit cubes and analyzing their structure. Students observe that multiplying the number of cubes in one layer by the number of layers of cubes gives the volume. Students recognize that the number of cubes in one layer represents the area of a rectangle. Students then generalize that they can use the product of the area of the base and the height of a rectangular prism to determine its volume and write expressions to represent the volume.*	5.GSR.8 5.NR.5 5.MP.1-8	5.GSR.8.3 5.GSR.8.4 5.NR.5.1
20 Days Eureka Mod 1	**Unit 2: Building Conceptual Understanding of Place Value Using Measurement and Data Reasoning** *In this unit, students will explore and explain patterns when multiplying and dividing by powers of 10. In fourth grade students learned the value of multi-digit whole numbers through the hundred-thousands place. Extending their fourth grade understanding that a digit in one place represents ten times the value of the same digit in the place to its right and their work with fraction multiplication in earlier units, students can build on this reasoning as they learn that a digit in one place represents $\frac{1}{10}$ of what that same digit represents in the place to its left. Students will also ask and answer statistical questions using the statistical reasoning framework which includes collecting, organizing, and interpreting data.*	5.NR.1 5.MDR.7 5.MP.1-8	5.NR.1.1 5.NR.1.2 5.MDR.7.1 5.MDR.7.2 5.MDR.7.3 5.MDR.7.4
16 Days Eureka Mod 2	**Unit 3: Building Conceptual Understanding of Multiplication and Division with Whole Numbers** *In this unit, students build on their conceptual understanding of, and strategies for multiplication and division from previous grades and units to multiply and divide multi-digit whole numbers using place value understanding, properties of operations, and the relationship between multiplication and division. Previous experience with area diagrams in fourth grade and in the previous unit will make the partial products diagram more accessible in this unit. Students will use strategies to multiply multi-digit whole numbers and partial quotient algorithms to divide whole numbers up to four-digits by two-digits. Students will also ask and answer statistical questions using the statistical reasoning framework which includes collecting, organizing, and interpreting data.*	5.NR.2 5.NR.5 5.MDR.7 5.MP.1-8	5.NR.2.1 5.NR.2.2 5.NR.5.1 5.MDR.7.2
16 Days Eureka Mod 3	**Unit 4: Building Fraction Understanding** *In this unit, students will compare and order fractions, and add and subtract fractions with unlike denominators. They will use reasoning and build on strategies learned in previous grades for generating equivalent fractions. Students will extend their understanding of linear representations and use number lines to solve problems with dot plots showing measurements with $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$. Students will also ask and answer statistical questions using the statistical reasoning framework which includes collecting, organizing, and interpreting data.*	5.NR.3 5.MDR.7 5.MP.1-8	5.NR.3.2 5.NR.3.3 5.MDR.7.2

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Year-At-A-Glance			
Semester 2			
Pacing Suggestion	**Unit**	**Content Standards**	**Learning Objectives**
20 Days Eureka Mod 4	**Unit 5: Making Sense of Fraction Multiplication and Division** *In this unit, students begin by interpreting a fraction as a quotient and use their understanding of whole number multiplication to multiply a whole number and a fraction. Students solve problems involving division of whole numbers with answers that are fractions (which could be in the form of mixed numbers). They develop an understanding of fractions as the division of the numerator by the denominator, that is $a \div b = \frac{a}{b}$. Building from students' work in third grade with multiplication and division with whole numbers in terms of equal-sized groups, students will use multiplication to represent equal-sized groups of fractional amounts. They will solve problems that involve the multiplication of a whole number by a fraction or mixed number using properties of operations. Students will make sense of division of fractions from situations that involve a whole number and a unit fraction and recall that division can be understood in terms of finding the number of equal-sized groups or finding the size of each group. Students will use multiplicative comparison to compare the size of a product of a fraction and a whole number to the size of one of the factors.*	5.NR.3 5.MP.1-8	5.NR.3.1 5.NR.3.4 5.NR.3.5 5.NR.3.6
20 Days Eureka Mod 1	**Unit 6: Extending Place Value and Working with Decimals to Solve Problems** *In this unit, students extend their understanding of the place value of numbers to include decimals through the thousandths place. Then, students use their understanding of place value to locate, compare, and order decimals to the thousandths place. Students will use place-value reasoning to round decimals to the tenths and hundredths places. Lastly, students will extend their understanding of whole number operations work to add and subtract decimals utilizing familiar representations, strategies based on place value and properties of operations.*	5.NR.4 5.MDR.7 5.MP.1-8	5.NR.4.1 5.NR.4.2 5.NR.4.3 5.NR.4.4 5.MDR.7.2
16 Days Eureka Mod 6	**Unit 7: Exploring Geometry and the Coordinate Plane** *In this unit, students are introduced to the structure of the coordinate grid, and the convention and notation of coordinates to name points. This unit also offers students an opportunity to build on their understanding of shapes by classifying polygons based on their properties. In their work with patterns, students generate two different numerical patterns, and identify relationships between the corresponding terms within those patterns.*	5.PAR.6 5.GSR.8 5.MP.1-8	5.PAR.6.1 5.PAR.6.2 5.GSR.8.1 5.GSR.8.2
8 Days DOE Tasks	**Unit 8: Culminating Capstone Unit** ***(applying concepts in real-life contexts in a culminating interdisciplinary unit)*** *The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)*	ALL STANDARDS 5.MP.1-8	ALL ASSOCIATED LEARNING OBJECTIVES

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Semester 1
Unit 1: Investigating Volume of Solid Figures (8 Days Eureka Mod 5)
Big Ideas: Geometric & Spatial Reasoning and Numerical Reasoning

Standards Addressed in this Unit:

5.GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

5.NR.5: Write, interpret, and evaluate numerical expressions within real-life problems.

Suggested Clusters of Concepts (Learning Objectives)

5.GSR.8.3 Investigate volume of right rectangular prisms by packing them with unit cubes without gaps or overlaps. Then, determine the total volume to solve problems.

5.GSR.8.4 Discover and explain how the volume of a right rectangular prism can be found by multiplying the area of the base times the height to solve real-life, mathematical problems.

5.NR.5.1 Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent real-life situations.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 2: Building Conceptual Understanding of Place Value Using Measurement and Data Reasoning (20 Days Eureka Mod 1)

Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

5.NR.1: Use place value understanding to solve real-life, mathematical problems.

5.MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Suggested Clusters of Concepts (Learning Objectives)

5.NR.1.1 Explain 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.

5.NR.1.2 Explain patterns in the placement of digits when multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10, up to 10^3.

5.MDR.7.3 Convert among units within the metric system and then apply these conversions to solve multi-step, real life problems.

5.MDR.7.4 Convert among units within relative sizes of measurement units within the customary measurement system.

5.MDR.7.1 Explore real-life problems involving different units of measurement, including distance, weight, volume, and time.

5.MDR.7.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

GRADE 5

Unit 3: Building Conceptual Understanding of Multiplication and Division with Whole Numbers (16 Days Eureka Mod 2)

Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

5.NR.2: Multiply and divide multi-digit whole numbers to solve real-life, mathematical problems.

5.NR.5: Write, interpret, and evaluate numerical expressions within real-life problems.

5.MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Suggested Clusters of Concepts (Learning Objectives)

5.NR.2.1 Fluently multiply multi-digit (up to 3-digit by 2-digit) whole numbers to solve real-life problems.

5.NR.5.1 Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent real-life situations.

5.NR.2.2 Fluently divide multi-digit whole numbers (up to 4- digit dividends and 2-digit divisors no greater than 25) to solve real-life problems.

5.MDR.7.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 4: Building Fraction Understanding (16 Days Eureka Mod 3)
Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

5.NR.3: Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.

5.MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Suggested Clusters of Concepts (Learning Objectives)

5.NR.3.2 Compare and order up to three fractions with different numerators and/or different denominators by flexibly using a variety of tools and strategies.

5.NR.3.3 Model and solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators.

5.MDR.7.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Semester 2
Unit 5: Making Sense of Fraction Multiplication and Division (20 Days Eureka MOd 4)
Big Idea: Numerical Reasoning

Standards Addressed in this Unit:

5.NR.3: Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.

Suggested Clusters of Concepts (Learning Objectives)

5.NR.3.1 Explain the meaning of a fraction as division of the numerator by the denominator ($\frac{a}{b}$ = a ÷ b). Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

5.NR.3.4 Model and solve problems involving multiplication of a fraction and a whole number.

5.NR.3.5 Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number, and why multiplying a whole number by a fraction less than one results in a product less than the whole number and multiplying a whole number by a fraction equal to one results in a product equal to the whole number.

5.NR.3.6 Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 6: Extending Place Value and Working with Decimals to Solve Problems (20 Days Eureka Mod 1)
Big Idea: Numerical Reasoning

Standard Addressed in this Unit:

5.NR.4: Read, write, and compare decimal numbers to the thousandths place, and round and perform operations with decimal numbers to the hundredths place to solve real-life, mathematical problems.

5.MDR.7: Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.

Suggested Clusters of Concepts (Learning Objectives)
5.NR.4.1 Read and write decimal numbers to the thousandths place using base-ten numerals written in standard form and expanded form.
5.NR.4.2 Represent, compare, and order decimal numbers to the thousandths place based on the meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
5.NR.4.3 Use place value understanding to round decimal numbers to the hundredths place.
5.NR.4.4 Solve problems involving addition and subtraction of decimal numbers to the hundredths place using a variety of strategies.
5.MDR.7.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

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Unit 7: Exploring Geometry and the Coordinate Plane   (16 Days Eureka Mod 6)
Big Ideas: Patterning & Algebraic Reasoning and Geometric & Spatial Reasoning

Standards Addressed in this Unit:

5.PAR.6: Solve real-life problems by creating and analyzing numerical patterns using the given rule(s).

5.GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

Suggested Clusters of Concepts (Learning Objectives)

5.PAR.6.1 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table.

5.PAR.6.2 Represent problems by plotting ordered pairs and explain coordinate values of points in the first quadrant of the coordinate plane.

5.GSR.8.1 Classify, compare, and contrast polygons based on properties.

5.GSR.8.2 Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.

GRADE 5

Unit 8: Culminating Capstone Unit
(applying concepts in real-life contexts in a culminating interdisciplinary unit)
(8 Days GaDOE Resources)

ALL Standards Addressed in this Unit

The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)

Mathematical Practices (5.MP.1- 8) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.