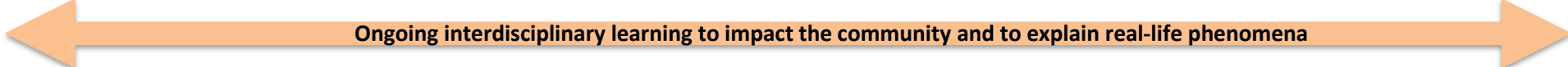


Georgia's K-12 Mathematics Standards Curriculum Map

Implementation beginning Fall 2023

GRADE 4

GRADE 4 MATHEMATICS CURRICULUM MAP

Georgia's K-12 Mathematics Standards - Grade 4						
Semester 1				Semester 2		
Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
Making Relevant Connections with Place Value Understanding, Addition and Subtraction of Whole Numbers Interdisciplinary Connection	Exploring Real-Life Phenomena through Patterning and Algebraic Reasoning Interdisciplinary Connection	Reasoning about Multiplication and Division Interdisciplinary Connection	Investigating Fractions and Decimals Interdisciplinary Connection	Building Conceptual Understanding of Angle Measurement Interdisciplinary Connection	Reasoning with Shapes Interdisciplinary Connection	Culminating Capstone Unit
4 - 5 weeks	4 - 5 weeks	4 - 5 weeks	7 - 8 weeks	3 - 4 weeks	4 - 5 weeks	2 - 3 weeks
4.NR.1 4.NR.2 4.MDR.6 4.MP.1-8	4.PAR.3 4.MDR.6 4.MP.1-8	4.NR.2 4.MDR.6 4.MP.1-8	4.NR.4 4.NR.5 4.MDR.6 4.MP.1-8	4.GSR.7 4.MP.1-8	4.GSR.8 4.MP.1-8	ALL STANDARDS 4.MP.1-8
 <p>Ongoing interdisciplinary learning to impact the community and to explain real-life phenomena</p>						
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 (4.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 4

Year-At-A-Glance

Semester 1

Pacing Suggestion	Unit	Content Standards	Learning Objectives	
4 - 5 Weeks	Unit 1: Making Relevant Connections with Place Value Understanding, Addition and Subtraction of Whole Numbers <i>Previously, students worked within 10,000 for place value, addition, and subtraction. In this unit students will be building on this understanding to add, subtract, and round numbers within 100,000. This unit also incorporates problem solving with money, intervals of time, and metric measurements for liquid volume, distance, and weight. Students will also engage in the framework for statistical reasoning to ask and answer questions in order to solve problems.</i>	4.NR.1 4.NR.2 4.MDR.6 4.MP.1-8	4.NR.1.1 4.NR.1.2 4.NR.1.3 4.NR.1.4 4.NR.2.1 4.NR.2.5 4.MDR.6.2	
4 - 5 Weeks	Unit 2: Exploring Real-life Phenomena through Patterning and Algebraic Reasoning <i>Previously, students have explored growing and repeating patterns of 1s, 5s, and 10s and shapes, as well as patterns in addition, subtraction, multiplication, and division. In this unit, students will be building on this understanding to generate number and shape patterns that follow a rule, as well as exploring factor pairs and prime and composite numbers.</i>	4.PAR.3 4.MDR.6 4.MP.1-8	4.PAR.3.1 4.PAR.3.2 4.PAR.3.3 4.PAR.3.4 4.MDR.6.2	
4 - 5 Weeks	Unit 3: Reasoning about Multiplication and Division <i>Previously students were multiplying and dividing numbers within 100. In this unit students will be building on this understanding by multiplying multi-digit numbers by a one-digit number or two two-digit numbers as well as dividing four-digit numbers with one-digit divisors. This unit also incorporates problem solving with money, intervals of time, and metric measurements for liquid volume, distance, and weight.</i>	4.NR.2 4.MDR.6 4.MP.1-8	4.NR.2.2 4.NR.2.3 4.NR.2.4 4.NR.2.5 4.MDR.6.1	
3 - 4 weeks (Part 1)	Unit 4: Investigating Fractions and Decimals <i>Previously students have partitioned shapes into halves, thirds, quarters (fourths), determined equivalences for simple fractions, and identifying and comparing fractional parts. In this unit, students will be building on this understanding to compare fractions less than 1, add and subtract fractions with like denominators, and measure to the nearest $\frac{1}{8}$ of an inch.</i>	4.NR.4 4.NR.5 4.MDR.6 4.MP.1-8	4.NR.4.1 4.NR.4.2 4.NR.4.3 4.NR.4.4 4.NR.4.5 4.NR.4.6	4.NR.5.1 4.NR.5.2 4.NR.5.3 4.MDR.6.1 4.MDR.6.2 4.MDR.6.3

Mathematical Practices (4.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 4

Year-At-A-Glance

Semester 2

Pacing Suggestion	Unit	Content Standards	Learning Objectives
4 - 5 weeks (Part 2 - Continued from 1st Semester)	Unit 4: Investigating Fractions and Decimals <i>Previously students have partitioned shapes into halves, thirds, quarters (fourths), determined equivalences for simple fractions, and identifying and comparing fractional parts. In this unit, students will build on this understanding to compare fractions less than 1, add and subtract fractions with like denominators, and measuring to the nearest $\frac{1}{8}$ of an inch.</i>	4.NR.4 4.NR.5 4.MDR.6 4.MP.1-8	4.NR.4.1 4.NR.4.2 4.NR.4.3 4.NR.4.4 4.NR.4.5 4.NR.4.6 4.NR.5.1 4.NR.5.2 4.NR.5.3 4.MDR.6.1 4.MDR.6.2 4.MDR.6.3
3 - 4 weeks	Unit 5: Building Conceptual Understanding of Angle Measurement <i>Previously students have learned that a right angle is a square corner, and that an acute angle is smaller than a right angle and an obtuse angle is larger than a right angle. In 4th grade, students will be introduced to the idea of degrees using a 360° protractor. They will begin measuring and exploring angles as an attribute to shapes.</i>	4.GSR.7 4.MP.1-8	4.GSR.7.1 4.GSR.7.2
4 – 5 weeks	Unit 6: Reasoning with Shapes <i>Previously students have explored and sorted 2-D and 3-D shapes and their attributes. They investigated various attributes of quadrilaterals such as perpendicular and parallel lines segments and lines of symmetry. In this unit, students will explore the many attributes of two-dimensional shapes, as well as solve problems involving area and perimeter.</i>	4.GSR.8 4.MP.1-8	4.GSR.8.1 4.GSR.8.2 4.GSR.8.3
2 - 3 weeks	Unit 7: Culminating Capstone Unit (applying concepts in real-life contexts through a culminating interdisciplinary unit) <i>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.)</i>	ALL STANDARDS	ALL ASSOCIATED LEARNING OBJECTIVES

Mathematical Practices (4.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 4

Semester 1

Unit 1: Making Relevant Connections with Place Value Understanding, Addition and Subtraction of Whole Numbers (4 - 5 weeks)

Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

4.NR.1 Recognize patterns within the base ten place value system with quantities presented in real-life situations to compare and round multi-digit whole numbers through the hundred-thousands place.

4.NR.2 Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.

4.MDR.6 Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

Suggested Clusters of Concepts (Learning Objectives)

4.NR.1.1 Read and write multi-digit whole numbers to the hundred-thousands place using base-ten numerals and expanded form.

4.NR.1.2 Recognize and show that a digit in one place has a value ten times greater than what it represents in the place to its right and extend this understanding to determine the value of a digit when it is shifted to the left or right, based on the relationship between multiplication and division.

4.NR.1.3 Use place value reasoning to represent, compare, and order multi-digit numbers, using $>$, $=$, and $<$ symbols to record the results of comparisons.

4.NR.1.4 Use place value understanding to round multi-digit whole number

4.NR.2.1 Fluently add and subtract multi-digit numbers to solve real-life, mathematical problems using place value understanding, properties of operations, and relationships between operations.

4.NR.2.5 Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.

4.MDR.6.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (4.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 4

Unit 2: Exploring Real-life Phenomena through Patterning and Algebraic Reasoning (4 - 5 weeks)

Big Ideas: Patterning & Algebraic Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

4.PAR.3 Generate and analyze patterns, including those involving shapes, input/output diagrams, factors, multiples, prime numbers, and composite numbers.

4.MDR.6: Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

Suggested Cluster of Concepts (Learning Objectives)

4.PAR.3.1 Generate both number and shape patterns that follow a provided rule.

4.PAR.3.2 Use input-output rules, tables, and charts to represent and describe patterns, find relationships, and solve problems

4.PAR.3.3 Find factor pairs in the range 1–100 and find multiples of single-digit numbers up to 100.

4.PAR.3.4 Identify composite numbers and prime numbers and explain the relationship between them.

4.MDR.6.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Mathematical Practices (4.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 4

Unit 3: Reasoning about Multiplication and Division (4 - 5 weeks)

Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

4.NR.2 Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.

4.MDR.6: Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

Suggested Cluster of Concepts (Learning Objectives)

4.NR.2.2 Interpret, model, and solve problems involving multiplicative comparison.

4.NR.2.3 Solve real-life problems involving multiplication of a number with up to four digits by a 1-digit whole number or involving multiplication of two two-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NR.2.4 Solve real-life division problems involving up to 4-digit dividends and 1-digit divisors (including whole number quotients with remainders) using strategies based on place-value understanding, properties of operations, and the relationships between operations.

4.NR.2.5 Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.

4.MDR.6.1 Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects, including problems involving fractions with like denominators, and also problems that require expressing measurements given in a larger unit in terms of a smaller unit, and expressing a smaller unit in terms of a larger unit.

4.NR.2.5 Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.

Mathematical Practices (4.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 4

Unit 4: Investigating Fractions and Decimals (3 - 4 weeks)

Big Idea: Numerical Reasoning

Standards Addressed in this Unit:

4.NR.4: Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.

Suggested Cluster of Concepts (Learning Objectives)

- 4.NR.4.1 Using concrete materials, drawings, and number lines, demonstrate and explain the relationship between equivalent fractions, including fractions greater than one, and explain the identity property of multiplication as it relates to equivalent fractions. Generate equivalent fractions using these relationships.
- 4.NR.4.2 Compare two fractions with the same numerator or the same denominator by reasoning about their size and recognize that comparisons are valid only when the two fractions refer to the same whole.
- 4.NR.4.3 Compare two fractions with different numerators and/or different denominators by flexibly using a variety of tools and strategies and recognize that comparisons are valid only when the two fractions refer to the same whole.
- 4.NR.4.4 Represent whole numbers and fractions as the sum of unit fractions.
- 4.NR.4.5 Represent a fraction as a sum of fractions with the same denominator in more than one way, recording with an equation.
- 4.NR.4.6 Add and subtract fractions and mixed numbers with like denominators using a variety of tools.

Mathematical Practices (4.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 4



Semester 2

Unit 4: Investigating Fractions and Decimals (*continued*, 4 - 5 weeks)

Big Ideas: Numerical Reasoning and Measurement & Data Reasoning

Standards Addressed in this Unit:

4.NR.5 Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.

4.MDR.6 Measure time and objects that exist in the world to solve real-life, mathematical problems.

Suggested Cluster of Concepts (Learning Objectives)

4.NR.5.1 Demonstrate and explain the concept of equivalent fractions with denominators of 10 and 100, using concrete materials and visual models. Add two fractions with denominators of 10 and 100.

4.NR.5.2 Represent, read, and write fractions with denominators of 10 or 100 using decimal notation, and decimal numbers to the hundredths place as fractions, using concrete materials and drawings.

4.NR.5.3 Compare two decimal numbers to the hundredths place by reasoning about their size. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions.

4.MDR.6.1 Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects, including problems involving fractions with like denominators, and also problems that require expressing measurements given in a larger unit in terms of a smaller unit, and expressing a smaller unit in terms of a larger unit.

4.MDR.6.2 Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

4.MDR.6.3 Create dot plots to display a distribution of numerical (quantitative) measurement data.

Mathematical Practices (4.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 4



Unit 5: Building Conceptual Understanding of Angle Measurement (3 - 4 weeks)

Big Idea: Geometric & Spatial Reasoning

Standard Addressed in this Unit:

4.GSR.7 Investigate the concepts of angles and angle measurement to estimate and measure angles.

Suggested Cluster of Concepts (Learning Objectives)

4.GSR.7.1 Recognize angles as geometric shapes formed when two rays share a common endpoint. Draw right, acute, and obtuse angles.

4.GSR.7.2 Measure angles in reference to a circle with the center at the common endpoint of two rays. Determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem.

Mathematical Practices (4.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.

Unit 6: Reasoning with Shapes (4 - 5 weeks)

Big Idea: Geometric & Spatial Reasoning

Standard Addressed in this Unit:

4.GSR.8 Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.

Suggested Cluster of Concepts (Learning Objectives)

4.GSR.8.1 Explore, investigate, and draw points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry. Identify these in two-dimensional figures.

4.GSR.8.2 Classify, compare, and contrast polygons based on lines of symmetry, the presence or absence of parallel or perpendicular line segments, or the presence or absence of angles of a specified size and based on side lengths.

4.GSR.8.3 Solve problems involving area and perimeter of composite rectangles involving whole numbers with known side lengths.

Mathematical Practices (4.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 4



Unit 7: Culminating Capstone Unit (2 - 3 weeks) *(applying concepts in real-life contexts in a culminating interdisciplinary unit)*

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 (4.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.