

Northpoint Horizons

Math Elevations™ (Comprehensive Intervention System)
Correlated to
Georgia Mathematics Performance Standards

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet **Georgia Mathematics Performance Standards**.

Georgia Mathematics Performance Standards Grade 5	<i>Math Elevations</i> Level E Teacher's Guide Examples/Lessons
NUMBER AND OPERATIONS	
M5N1. Students will further develop their understanding of whole numbers.	
a. Classify the set of counting numbers into subsets with distinguishing characteristics (odd/even, prime/composite).	Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26–27
b. Find multiples and factors.	Unit 1 – Lesson 7: <i>Greatest Common Factor</i> pp. 30–31 Lesson 8: <i>Least Common Multiple</i> pp. 32–33
c. Analyze and use divisibility rules.	Unit 1 – Lesson 6: <i>Divisibility</i> pp. 28–29
M5N2. Students will further develop their understanding of decimal fractions as part of the base-ten number system.	
a. Understand place value.	Unit 1 – Lesson 1: <i>Whole Number Place Value</i> pp. 18–19 Lesson 2: <i>Place Value Through Thousandths</i> pp. 20–21
b. Analyze the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01.	Unit 2 – Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40–41
M5N3. Students will further develop their understanding of the meaning of multiplication and division with decimal fractions and use them.	
a. Model multiplication and division of decimal fractions by another decimal fraction.	Unit 2 – Lesson 5: <i>Multiplying Decimals</i> pp. 44–45
b. Explain the process of multiplication and division, including situations in which the multiplier and divisor are both whole numbers and decimal fractions.	Unit 1 – Lesson 6: <i>Divisibility</i> pp. 28–29

Georgia Mathematics Performance Standards Grade 5	Math Elevations Level E Teacher's Guide Examples/Lessons
	Unit 2 – Lesson 7: <i>Long Division</i> pp. 48–49 Lesson 8: <i>Interpreting Remainders</i> pp. 50–51
c. Multiply and divide with decimal fractions including decimal fractions less than one and greater than one.	Unit 2 – Lesson 5: <i>Multiplying Decimals</i> pp. 44–45
d. Understand the relationships and rules for multiplication and division of whole numbers also apply to decimal fractions.	Unit 2 – Lesson 5: <i>Multiplying Decimals</i> pp. 44–45
M5N4. Students will continue to develop their understanding of the meaning of common fractions and compute with them.	
a. Understand division of whole numbers can be represented as a fraction ($a/b = a \div b$).	Unit 3 – Lesson 1: <i>Understanding Fractions</i> pp. 54–55
b. Understand the value of a fraction is not changed when both its numerator and denominator are multiplied or divided by the same number because it is the same as multiplying or dividing by one.	Unit 3 – Lesson 1: <i>Understanding Fractions</i> pp. 54–55
c. Find equivalent fractions and simplify fractions.	Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56–57
d. Model the multiplication and division of common fractions.	
e. Explore finding common denominators using concrete, pictorial, and computational models.	Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56–57 Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58–59
f. Use $<$, $>$, or $=$ to compare fractions and justify the comparison.	Unit 3 – Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62–63 Unit 3 – Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64–65
g. Add and subtract common fractions and mixed numbers with unlike denominators.	Unit 4 – Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76–77 Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78–79 Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80–81
h. Use fractions (proper and improper) and decimal fractions interchangeably.	Unit 3 – Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58–59 Lesson 4: <i>Relating Decimals and Fractions</i> pp. 60–61
i. Estimate products and quotients.	Unit 2 –

Georgia Mathematics Performance Standards Grade 5	Math Elevations Level E Teacher's Guide Examples/Lessons
	Lesson 6: <i>Estimating Quotients</i> pp. 46–47
M5N5. Students will understand the meaning of percentage.	
a. Model percent on 10 by 10 grids.	Unit 4 – Lesson 6: <i>Understanding Percent</i> pp. 82–83
b. Apply percentage to circle graphs.	
MEASUREMENT	
M5M1. Students will extend their understanding of area of fundamental geometric plane figures.	
a. Estimate the area of fundamental geometric plane figures.	Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114–115
b. Derive the formula for the area of a parallelogram (e.g., cut the parallelogram apart and rearrange it into a rectangle of the same area).	Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114–115
c. Derive the formula for the area of a triangle (e.g., demonstrate and explain its relationship to the area of a rectangle with the same base and height).	Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116–117
d. Find the areas of triangles and parallelograms using formulae.	Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114–115 Lesson 5: <i>Area of Triangles</i> pp. 116–117
e. Estimate the area of a circle through partitioning and tiling and then with formula (let $\pi = 3.14$). (Discuss square units as they apply to circles.)	
f. Find the area of a polygon (regular and irregular) by dividing it into squares, rectangles, and/or triangles and find the sum of the areas of those shapes.	Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110–111 Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112–113 Lesson 4: <i>Area of Parallelograms</i> pp. 114–115 Lesson 5: <i>Area of Triangles</i> pp. 116–117
M5M3. Students will measure capacity with appropriately chosen units and tools.	
a. Use milliliters, liters, fluid ounces, cups, pints, quarts, and gallons to measure capacity.	Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120–121 Lesson 8: <i>Converting Within the Customary System</i> pp. 122–123
b. Compare one unit to another within a single system of measurement (e.g., 1 quart = 2 pints).	Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120–121 Lesson 8: <i>Converting Within the Customary System</i> pp. 122–123
M5M4. Students will understand and compute the volume of a simple geometric solid.	
a. Understand a cubic unit (u^3) is represented by a cube in which each edge	Unit 6 –

Georgia Mathematics Performance Standards Grade 5	Math Elevations Level E Teacher's Guide Examples/Lessons
has the length of 1 unit.	Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
b. Identify the units used in computing volume as cubic centimeters (cm ³), cubic meters (m ³), cubic inches (in ³), cubic feet (ft ³), and cubic yards (yd ³).	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
c. Derive the formula for finding the volume of a cube and a rectangular prism using manipulatives.	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
d. Compute the volume of a cube and a rectangular prism using formulae.	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
e. Estimate the volume of a simple geometric solid.	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
f. Understand the similarities and differences between volume and capacity.	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118–119
GEOMETRY	
M5G1. Students will understand congruence of geometric figures and the correspondence of their vertices, sides, and angles.	
M5G2. Students will understand the relationship of the circumference of a circle to its diameter is pi ($\pi \approx 3.14$).	
ALGEBRA	
M5A1. Students will represent and interpret the relationships between quantities algebraically.	
a. Use variables, such as n or x, for unknown quantities in algebraic expressions.	Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98–99
b. Investigate simple algebraic expressions by substituting numbers for the unknown.	Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98–99
c. Determine that a formula will be reliable regardless of the type of number (whole numbers or decimal fractions) substituted for the variable.	Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114–115 Lesson 5: <i>Area of Triangles</i> pp. 116–117
DATA ANALYSIS	
M5D1. Students will analyze graphs.	
a. Analyze data presented in a graph.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
b. Compare and contrast multiple graphic representations (circle graphs, line graphs, bar graphs, etc.) for a single set of data and discuss the advantages/disadvantages of each.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159

Georgia Mathematics Performance Standards Grade 5	<i>Math Elevations</i> Level E Teacher's Guide Examples/Lessons
M5D2. Students will collect, organize, and display data using the most appropriate graph.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
Process Skills	
M5P1. Students will solve problems (using appropriate technology).	
a. Build new mathematical knowledge through problem solving.	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146–147 Lesson 3: <i>Probability Experiments</i> pp. 148–149
b. Solve problems that arise in mathematics and in other contexts.	Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100–101
c. Apply and adapt a variety of appropriate strategies to solve problems.	Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100–101
d. Monitor and reflect on the process of mathematical problem solving.	Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100–101
M5P2. Students will reason and evaluate mathematical arguments.	
a. Recognize reasoning and proof as fundamental aspects of mathematics.	Unit 7 – Lesson 4: <i>Classifying Triangles</i> pp. 132–133
b. Make and investigate mathematical conjectures.	Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144–145
c. Develop and evaluate mathematical arguments and proofs.	Unit 7 – Lesson 4: <i>Classifying Triangles</i> pp. 132–133
d. Select and use various types of reasoning and methods of proof.	Unit 7 – Lesson 4: <i>Classifying Triangles</i> pp. 132–133
M5P3. Students will communicate mathematically.	
a. Organize and consolidate their mathematical thinking through communication.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
c. Analyze and evaluate the mathematical thinking and strategies of others.	Unit 7 –

Georgia Mathematics Performance Standards Grade 5	Math Elevations Level E Teacher's Guide Examples/Lessons
	Lesson 1: <i>Geometric Concepts</i> pp. 126–127
d. Use the language of mathematics to express mathematical ideas precisely.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150–151
M5P4. Students will make connections among mathematical ideas and to other disciplines.	
a. Recognize and use connections among mathematical ideas.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150–151
b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150–151
c. Recognize and apply mathematics in contexts outside of mathematics.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150–151
M5P5. Students will represent mathematics in multiple ways.	
a. Create and use representations to organize, record, and communicate mathematical ideas.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
b. Select, apply, and translate among mathematical representations to solve problems.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159
c. Use representations to model and interpret physical, social, and mathematical phenomena.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154–155 Lesson 7: <i>Line Graphs</i> pp. 156–157 Lesson 8: <i>Circle Graphs</i> pp. 158–159