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 4**	***Math Elevations* Level D** **Teacher's Guide Examples/Lessons**
NUMBER AND OPERATIONS	
M4N1. Students will further develop their understanding of how whole numbers are represented in the base–ten numeration system.	
a. Identify place value names and places from hundredths through one million.	Unit 1 – Lesson 1: *Large Numbers* pp. 18–19 Lesson 2: *Comparing Numbers* pp. 20–21
b. Equate a number's word name, its standard form, and its expanded form.	
M4N2. Students will understand and apply the concept of rounding numbers.	
a. Round numbers to the nearest ten, hundred, or thousand.	Unit 1 – Lesson 3: *Rounding* pp. 22–23
b. Describe situations in which rounding numbers would be appropriate and determine whether to round to the nearest ten, hundred, or thousand.	Unit 1 – Lesson 3: *Rounding* pp. 22–23 Lesson 7: *Comparing and Rounding Decimals* pp. 30–31
c. Understand the meaning of rounding a decimal fraction to the nearest whole number.	Unit 1 – Lesson 7: *Comparing and Rounding Decimals* pp. 30–31
d. Represent the results of computation as a rounded number when appropriate and estimate a sum or difference by rounding numbers.	Unit 1 – Lesson 3: *Rounding* pp. 22–23
M4N3. Students will solve problems involving multiplication of 2–3 digit numbers by 1–2 digit numbers.	Unit 3 – Lesson 3: *Multiplication by One-Digit Numbers* pp. 58–59 Lesson 4: *Multiplication by Two-Digit Numbers* pp. 60–61
M4N4. Students will further develop their understanding of division of whole numbers and divide in problem solving situations without calculators.	
a. Know the division facts with understanding and fluency.	Unit 3 – Lesson 5: *Division with Remainders* pp. 62–63 Lesson 6: *Long Division (Two-Digit ÷ One-Digit Numbers)* pp. 64–65

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	Lesson 7: *Long Division (Three-Digit ÷ One-Digit Numbers)* pp. 66–67
b. Solve problems involving division by a 2-digit number (including those that generate a remainder).	Unit 3 – Lesson 5: *Division with Remainders* pp. 62–63 Lesson 6: *Long Division (Two-Digit ÷ One-Digit Numbers)* pp. 64–65 Lesson 7: *Long Division (Three-Digit ÷ One-Digit Numbers)* pp. 66–67
c. Understand the relationship between dividend, divisor, quotient, and remainder.	Unit 3 – Lesson 5: *Division with Remainders* pp. 62–63
d. Understand and explain the effect on the quotient of multiplying or dividing both the divisor and dividend by the same number. (2050 ÷ 50 yields the same answer as 205 ÷ 5).	Unit 3 – Lesson 2: *Patterns of Calculations* pp. 56–57
M4N5. Students will further develop their understanding of the meaning of decimal fractions and use them in computations.	
a. Understand decimal fractions are a part of the base-ten system.	Unit 1 – Lesson 6: *Fractions as Decimals* pp. 28–29 Lesson 7: *Comparing and Rounding Decimals* pp. 30–31
b. Understand the relative size of numbers and order two-digit decimal fractions.	Unit 1 – Lesson 7: *Comparing and Rounding Decimals* pp. 30–31
c. Add and subtract both one and two digit decimal fractions.	
d. Model multiplication and division of decimal fractions by whole numbers.	
e. Multiply and divide both one and two digit decimal fractions by whole numbers.	
M4N6. Students will further develop their understanding of the meaning of common fractions and use them in computations.	
a. Understand representations of simple equivalent fractions.	Unit 4 – Lesson 1: *Comparing and Ordering Fractions* pp. 72–73 Lesson 2: *Equivalent Fractions* pp. 74–75
b. Add and subtract fractions and mixed numbers with common denominators. (Denominators should not exceed twelve.)	Unit 4 – Lesson 5: *Addition of Fractions with Like Denominators* pp. 80–81 Lesson 6: *Subtraction of Fractions with Like Denominators* pp. 82–83 Lesson 7: *Addition and Subtraction of Mixed Numbers* pp. 84–85 Lesson 8: *Addition and Subtraction of Fractions with Unlike Denominators* pp. 86–87
c. Convert and use mixed numbers and improper fractions interchangeably.	Unit 4 – Lesson 3: *Converting Between Improper Fractions and Mixed Numbers* pp. 76–77
M4N7. Students will explain and use properties of the four arithmetic operations to solve and check problems.	

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a. Describe situations in which the four operations may be used and the relationships among them.	Unit 1 – Lesson 8: *Problem Solving* pp. 32–33 Unit 3 – Lesson 8: *Word Problems* pp. 68–69
b. Compute using the order of operations, including parentheses.	Unit 5 – Lesson 1: *Order of Operations* pp. 90–91
c. Compute using the commutative, associative, and distributive properties.	Unit 4 – Lesson 2: *Equivalent Fractions* pp. 74–75
d. Use mental math and estimation strategies to compute.	Unit 1 – Lesson 3: *Rounding* pp. 22–23 Unit 2 – Lesson 1: *Mental Addition and Subtraction* pp. 36–37 Unit 3 – Lesson 1: *Mental Multiplication* pp. 54–55
MEASUREMENT	
M4M1. Students will understand the concept of weight and how to measure it.	
a. Use standard and metric units to measure the weight of objects.	Unit 6 – Lesson 7: *Weight* pp. 120–121
b. Know units used to measure weight (gram, kilogram, ounces, pounds and tons).	Unit 6 – Lesson 7: *Weight* pp. 120–121
c. Compare one unit to another within a single system of measurement.	Unit 6 – Lesson 4: *Metric Measurement* pp. 114–115
M4M2. Students will understand the concept of angles and how to measure it.	
a. Use tools, such as a protractor or angle ruler, and other methods such as paper folding, drawing a diagonal in a square, to measure angles.	Unit 7 – Lesson 1: *Types of Angles* pp. 126–127
b. Understand the meaning and measure of a half rotation (180°) and a full rotation (360°).	Unit 7 – Lesson 6: *Turns* pp. 136–137
GEOMETRY	
M4G1. Students will define and identify the characteristics of geometric figures through examination and construction.	
a. Examine and compare angles in order to classify and identify triangles by their angles.	Unit 7 – Lesson 1: *Types of Angles* pp. 126–127
b. Describe parallel and perpendicular lines in plane geometric figures.	Unit 7 – Lesson 2: *Parallel and Perpendicular Lines* pp. 128–129
c. Examine and classify quadrilaterals (including parallelograms, squares,	Unit 7 –

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rectangles, trapezoids, and rhombi).	Lesson 3: *Classifying Polygons* pp. 130–131
d. Compare and contrast the relationships among quadrilaterals.	Unit 7 – Lesson 3: *Classifying Polygons* pp. 130–131
M4G2. Students will understand fundamental solid figures.	
a. Compare and contrast a cube and a rectangular prism in terms of the number and shape of their faces, edges, and vertices.	Unit 7 – Lesson 3: *Classifying Polygons* pp. 130–131 Lesson 7: *Solid Figures* pp. 138–139
b. Describe parallel and perpendicular lines and planes in connection with the rectangular prism.	Unit 7 – Lesson 2: *Parallel and Perpendicular Lines* pp. 128–129
c. Construct/collect models for solid geometric figures (cube, prisms, cylinder, etc.).	Unit 7 – Lesson 7: *Solid Figures* pp. 138–139
M4G3. Students will use the coordinate system.	
a. Understand and apply ordered pairs in the first quadrant of the coordinate system.	Unit 5 – Lesson 7: *Ordered Pairs* pp. 102–103
b. Locate a point in the first quadrant in the coordinate plane and name the ordered pair.	Unit 5 – Lesson 7: *Ordered Pairs* pp. 102–103
c. Graph ordered pairs in the first quadrant.	Unit 5 – Lesson 7: *Ordered Pairs* pp. 102–103
ALGEBRA	
M4A1. Students will represent and interpret mathematical relationships in quantitative expressions.	
a. Understand and apply patterns and rules to describe relationships and solve problems.	Unit 5 – Lesson 4: *Functional Relationships* pp. 96–97 Lesson 5: *Linear Functions* pp. 98–99
b. Represent unknowns using symbols, such as □ and Δ.	Unit 5 – Lesson 6: *Writing Simple Algebraic Equations* pp. 100–101
c. Write and evaluate mathematical expressions using symbols and different values.	Unit 5 – Lesson 6: *Writing Simple Algebraic Equations* pp. 100–101
DATA ANALYSIS	
M4D1. Students will gather, organize, and display data according to the situation and compare related features.	
a. Represent data in bar, line and pictographs.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
b. Investigate the features and tendencies of graphs.	Unit 8 –

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	Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
c. Compare different graphical representations for a given set of data.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
d. Identify missing information and duplications in data.	Unit 8 – Lesson 1: *Data Handling* pp. 144–145
Process Skills	
M4P1. Students will solve problems (using appropriate technology).	
a. Build new mathematical knowledge through problem solving.	Unit 1 – Lesson 8: *Problem Solving* pp. 32–33 Unit 2 – Lesson 8: *Word Problems (Five-Digit Numbers)* pp. 50–51 Unit 3 – Lesson 8: *Word Problems* pp. 68–69
b. Solve problems that arise in mathematics and in other contexts.	Unit 1 – Lesson 8: *Problem Solving* pp. 32–33 Unit 2 – Lesson 8: *Word Problems (Five-Digit Numbers)* pp. 50–51 Unit 3 – Lesson 8: *Word Problems* pp. 68–69
c. Apply and adapt a variety of appropriate strategies to solve problems.	Unit 1 – Lesson 8: *Problem Solving* pp. 32–33 Unit 2 – Lesson 8: *Word Problems (Five-Digit Numbers)* pp. 50–51 Unit 3 – Lesson 8: *Word Problems* pp. 68–69
d. Monitor and reflect on the process of mathematical problem solving.	Unit 1 – Lesson 8: *Problem Solving* pp. 32–33 Unit 2 – Lesson 8: *Word Problems (Five-Digit Numbers)* pp. 50–51 Unit 3 – Lesson 8: *Word Problems* pp. 68–69

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M4P2. Students will reason and evaluate mathematical arguments.	
a. Recognize reasoning and proof as fundamental aspects of mathematics.	Unit 7 – Lesson 3: *Classifying Polygons* pp. 130–131
b. Make and investigate mathematical conjectures.	Unit 8 – Lesson 7: *Determining Possible Outcomes* pp. 156–157 Lesson 8: *Probability* pp. 158–159
c. Develop and evaluate mathematical arguments and proofs.	Unit 8 – Lesson 7: *Determining Possible Outcomes* pp. 156–157 Lesson 8: *Probability* pp. 158–159
d. Select and use various types of reasoning and methods of proof.	Unit 8 – Lesson 1: *Data Handling* pp. 144–145
M4P3. Students will communicate mathematically.	
a. Organize and consolidate their mathematical thinking through communication.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
c. Analyze and evaluate the mathematical thinking and strategies of others.	Unit 8 – Lesson 7: *Determining Possible Outcomes* pp. 156–157
d. Use the language of mathematics to express mathematical ideas precisely.	Unit 8 – Lesson 2: *Mode and Mean* pp. 146–147
M4P4. Students will make connections among mathematical ideas and to other disciplines.	
a. Recognize and use connections among mathematical ideas.	Unit 6 – Lesson 8: *Appropriate Units* pp. 122–123
b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Unit 5 – Lesson 7: *Ordered Pairs* pp. 102–103
c. Recognize and apply mathematics in contexts outside of mathematics.	Unit 6 – Lesson 1: *Perimeter of Squares and Rectangles* pp. 108–109
M4P5. Students will represent mathematics in multiple ways.	
a. Create and use representations to organize, record, and communicate mathematical ideas.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149

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	Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
b. Select, apply, and translate among mathematical representations to solve problems.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153
c. Use representations to model and interpret physical, social, and mathematical phenomena.	Unit 8 – Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Bar Graphs* pp. 150–151 Lesson 5: *Line Graphs* pp. 152–153