

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 7	<i>Math Elevations</i> Level G Teacher's Guide Examples/Lessons
NUMBER AND OPERATIONS	
M7N1. Students will understand the meaning of positive and negative rational numbers and use them in computation.	
a. Find the absolute value of a number and understand it as the distance from zero on a number line.	Unit 3 – Lesson 4: <i>Absolute Value</i> pp. 83–85
b. Compare and order rational numbers, including repeating decimals.	Unit 1 – Lesson 1: <i>Decimal Place Value</i> pp. 18– 21 Lesson 2: <i>Exponents</i> pp. 22–24 Lesson 3: <i>Square Roots</i> pp. 25–27 Lesson 4: <i>Scientific Notation</i> pp. 28–30 Unit 5 – Lesson 5: <i>Fractions, Decimals, and Percents</i> pp. 141–143
c. Add, subtract, multiply, and divide positive and negative rational numbers.	Unit 2 – Lesson 1: <i>Adding and Subtracting Fractions</i> pp. 46–48 Lesson 2: <i>Adding and Subtracting Mixed Numbers</i> pp. 49–51 Lesson 3: <i>Multiplying Fractions and Mixed Numbers</i> pp. 52–54 Lesson 4: <i>Dividing Fractions and Mixed Numbers</i> pp. 55–57 Lesson 5: <i>Adding and Subtracting Decimals</i> pp. 58–60 Lesson 6: <i>Multiplying Decimals</i> pp. 61–63 Lesson 7: <i>Dividing Decimals</i> pp. 64–67 Lesson 8: <i>Fraction and Decimals</i> pp. 68–71 Unit 3 – Lesson 2: <i>Adding Integers</i> pp. 77–79 Lesson 3: <i>Subtracting Integers</i> pp. 80–82 Lesson 5: <i>Multiplying Integers</i> pp. 86–88 Lesson 6: <i>Dividing Integers</i> pp. 89–91

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d. Solve problems using rational numbers.	Unit 2 – Lesson 1: <i>Adding and Subtracting Fractions</i> pp. 46–48 Lesson 2: <i>Adding and Subtracting Mixed Numbers</i> pp. 49–51 Lesson 3: <i>Multiplying Fractions and Mixed Numbers</i> pp. 52–54 Lesson 4: <i>Dividing Fractions and Mixed Numbers</i> pp. 55–57 Lesson 5: <i>Adding and Subtracting Decimals</i> pp. 58–60 Lesson 6: <i>Multiplying Decimals</i> pp. 61–63 Lesson 7: <i>Dividing Decimals</i> pp. 64–67 Lesson 8: <i>Fraction and Decimals</i> pp. 68–71 Unit 3 – Lesson 2: <i>Adding Integers</i> pp. 77–79 Lesson 3: <i>Subtracting Integers</i> pp. 80–82 Lesson 5: <i>Multiplying Integers</i> pp. 86–88 Lesson 6: <i>Dividing Integers</i> pp. 89–91
GEOMETRY	
M7G1. Students will construct plane figures that meet given conditions.	
a. Perform basic constructions using both compass and straight edge, and appropriate technology. Constructions should include copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.	Unit 6 – Lesson 1: <i>Angles</i> pp. 156–159
b. Recognize that many constructions are based on the creation of congruent triangles.	Unit 6 – Lesson 2: <i>Triangles</i> pp. 160–162
M7G2. Students will demonstrate understanding of transformations.	
a. Demonstrate understanding of translations, dilations, rotations, reflections, and relate symmetry to appropriate transformations.	Unit 6 – Lesson 6: <i>Translations in the Coordinate Plane</i> pp. 172–174 Lesson 7: <i>Reflections and Rotations in the Coordinate Plane</i> pp. 175–178
b. Given a figure in the coordinate plane, determine the coordinates resulting from a translation, dilation, rotation, or reflection.	Unit 6 – Lesson 6: <i>Translations in the Coordinate Plane</i> pp. 172–174
M7G3. Students will use the properties of similarity and apply these concepts to geometric figures.	
a. Understand the meaning of similarity, visually compare geometric figures for similarity, and describe similarities by listing corresponding parts.	Unit 6 – Lesson 5: <i>Similar Polygons</i> pp. 169–171
b. Understand the relationships among scale factors, length ratios,	Unit 5 –

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and area ratios between similar figures. Use scale factors, length ratios, and area ratios to determine side lengths and areas of similar geometric figures.	Lesson 4: <i>Scale Drawings and Models</i> pp. 138–140
c. Understand congruence of geometric figures as a special case of similarity: The figures have the same size and shape.	Unit 6 – Lesson 4: <i>Congruent Polygons</i> pp. 166–168
M7G4. Students will further develop their understanding of three-dimensional figures.	
a. Describe three-dimensional figures formed by translations and rotations of plane figures through space.	Unit 6 – Lesson 6: <i>Translations in the Coordinate Plane</i> pp. 172–174
b. Sketch, model, and describe cross-sections of cones, cylinders, pyramids, and prisms.	Unit 6 – Lesson 8: <i>Solid Figures</i> pp. 179–181
ALGEBRA	
M7A1. Students will represent and evaluate quantities using algebraic expressions.	
a. Translate verbal phrases to algebraic expressions.	Unit 4 – Lesson 2: <i>Evaluating Algebraic Expressions</i> pp. 103–105 Lesson 3: <i>Writing and Evaluating Expressions</i> pp. 106–108
b. Simplify and evaluate algebraic expressions, using commutative, associative, and distributive properties as appropriate.	Unit 4 – Lesson 5: <i>Simplifying Expressions</i> pp. 112–114
c. Add and subtract linear expressions.	Unit 4 – Lesson 6: <i>Solving One-Step Equations Using Addition and Subtraction</i> pp. 115–117
M7A2. Students will understand and apply linear equations in one variable.	
a. Given a problem, define a variable, write an equation, solve the equation, and interpret the solution.	Unit 4 – Lesson 6: <i>Solving One-Step Equations Using Addition and Subtraction</i> pp. 115–117 Lesson 7: <i>Solving One-Step Equations Using Multiplication and Division</i> pp. 118–120
b. Use the addition and multiplication properties of equality to solve one- and two-step linear equations.	Unit 4 – Lesson 6: <i>Solving One-Step Equations Using Addition and Subtraction</i> pp. 115–117 Lesson 7: <i>Solving One-Step Equations Using Multiplication and Division</i> pp. 118–120
M7A3. Students will understand relationships between two variables.	
a. Plot points on a coordinate plane.	Unit 6 – Lesson 6: <i>Translations in the Coordinate Plane</i> pp. 172–174

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	Lesson 7: <i>Reflections and Rotations in the Coordinate Plane</i> pp. 175–178
b. Represent, describe, and analyze relations from tables, graphs, and formulas.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
c. Describe how change in one variable affects the other variable.	Unit 4 – Lesson 4: <i>Graphing Functions</i> pp. 109–111
d. Describe patterns in the graphs of proportional relationships, both direct ($y = kx$) and inverse ($y = k/x$).	Unit 5 – Lesson 3: <i>Writing and Solving Proportions</i> pp. 135–137
DATA ANALYSIS AND PROBABILITY	
M7D1. Students will pose questions, collect data, represent and analyze the data, and interpret results.	
a. Formulate questions and collect data from a census of at least 30 objects and from samples of varying sizes.	
b. Construct frequency distributions.	
c. Analyze data using measures of central tendency (mean, median, and mode), including recognition of outliers.	Unit 8 – Lesson 6: <i>Mean, Median, and Mode</i> pp. 229–232
d. Analyze data with respect to measures of variation (range, quartiles, interquartile range).	Unit 8 – Lesson 6: <i>Mean, Median, and Mode</i> pp. 229–232
e. Compare measures of central tendency and variation from samples to those from a census. Observe that sample statistics are more likely to approximate the population parameters as sample size increases.	Unit 8 – Lesson 6: <i>Mean, Median, and Mode</i> pp. 229–232
f. Analyze data using appropriate graphs, including pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots introduced earlier, and using box-and-whisker plots and scatter plots.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
g. Analyze and draw conclusions about data, including describing the relationship between two variables.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
M7P1. Students will solve problems (using appropriate technology).	
a. Build new mathematical knowledge through problem solving.	Unit 8 – Lesson 2: <i>Permutations</i> pp. 215–217 Lesson 3: <i>Combinations</i> pp. 218–220
b. Solve problems that arise in mathematics and in other contexts.	Unit 5 – Lesson 1: <i>Ratios</i> pp. 128–131 Lesson 2: <i>Rates</i> pp. 132–134
c. Apply and adapt a variety of appropriate strategies to solve	Unit 7 –

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problems.	Lesson 3: <i>Irregular Figures</i> pp. 191–193
d. Monitor and reflect on the process of mathematical problem solving.	Unit 7 – Lesson 3: <i>Irregular Figures</i> pp. 191–193
M7P2. Students will reason and evaluate mathematical arguments.	
a. Recognize reasoning and proof as fundamental aspects of mathematics.	Unit 6 – Lesson 5: <i>Similar Polygons</i> pp. 169–171
b. Make and investigate mathematical conjectures.	Unit 6 – Lesson 6: <i>Translations in the Coordinate Plane</i> pp. 172–174 Lesson 7: <i>Reflections and Rotations in the Coordinate Plane</i> pp. 175–178
c. Develop and evaluate mathematical arguments and proofs.	Unit 6 – Lesson 4: <i>Congruent Polygons</i> pp. 166–168
d. Select and use various types of reasoning and methods of proof.	Unit 6 – Lesson 4: <i>Congruent Polygons</i> pp. 166–168
M7P3. Students will communicate mathematically.	
a. Organize and consolidate their mathematical thinking through communication.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
c. Analyze and evaluate the mathematical thinking and strategies of others.	Unit 5 – Lesson 2: <i>Rates</i> pp. 132–134
d. Use the language of mathematics to express mathematical ideas precisely.	Unit 5 – Lesson 5: <i>Fractions, Decimals, and Percents</i> pp. 141–143
M7P4. Students will make connections among mathematical ideas and to other disciplines.	
a. Recognize and use connections among mathematical ideas.	Unit 4 – Lesson 1: <i>Order of Operations</i> pp. 100–102
b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Unit 5 – Lesson 4: <i>Scale Drawings and Models</i> pp. 138–140
c. Recognize and apply mathematics in contexts outside of mathematics.	Unit 5 – Lesson 4: <i>Scale Drawings and Models</i> pp. 138–140
M7P5. Students will represent mathematics in multiple ways.	
a. Create and use representations to organize, record, and communicate mathematical ideas.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236

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	Lesson 8: <i>Circle Graphs</i> pp. 237–239
b. Select, apply, and translate among mathematical representations to solve problems.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239
c. Use representations to model and interpret physical, social, and mathematical phenomena.	Unit 8 – Lesson 7: <i>Bar Graphs and Line Graphs</i> pp. 233–236 Lesson 8: <i>Circle Graphs</i> pp. 237–239