

Northpoint Horizons

*Math Elevations*  
Correlated to the  
Washington State Standards of Learning  
Grade 8

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet the Washington State Standards of Learning.

Grade Level Standards	<i>Math Elevations Level H</i> Elementary Teacher's Guide Examples/Lessons
<b>8.1. Core Content: Linear functions and Equations: Unit 3 – Algebra Unit 5 – Advanced Algebra and Functions</b>	
8.1.A Solve one–variable linear equations.	3.4 – Solving Equations Using Addition or Subtraction, pp. 84 – 86 3.5 – Solving Equations Using Multiplication or Division, pp. 87 – 89 5.1 – Solving Two–Step Equations, pp. 132 – 134 5.2 – Solving Multi–Step Equations, pp. 135 – 137
8.1.B Solve one– and two–step linear inequalities and graph the solutions on the number line.	3.6 – Solving Inequalities by Using Addition and Subtraction, pp 90 – 93 3.7 – Solving Inequalities by Using Multiplication and Division, pp 94 – 97
8.1.C Represent a linear function with a verbal description, table, graph, or symbolic expression, and make connections among these representations.	5.6 – Graphing Linear Functions, pp. 147 – 150 5.7 – Interpreting Linear Functions, pp. 151 – 153
8.1.D Determine the slope and y–intercept of a linear function described by a symbolic expression, table, or graph.	5.8 – Slope, pp. 154 – 157
8.1.E Interpret the slope and y–intercept of the	5.7 – Interpreting Linear Functions, pp. 151 – 153

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graph of a linear function representing a contextual situation.	
8.1.F Solve single- and multi-step word problems involving linear functions and verify the solutions.	5.3 – Translating and Solving Word Problems, pp. 138 – 140
8.1.G Determine and justify whether a given verbal description, table, graph, or symbolic expression represents a linear relationship.	5.7 – Interpreting Linear Functions, pp. 151 – 153
<b>8.2. Core Content: Properties of geometric figures</b>	
8.2.A Identify pairs of angles as complementary, supplementary, adjacent, or vertical, and use these relationships to determine missing angle measures.	6.1 – Angles, pp. 160 – 163 6.2 – Angles in Parallel Lines Cut by a Transversal, pp. 164 – 166
8.2.B Determine missing angle measures using the relationships among the angles formed by parallel lines and transversals.	6.2 – Angles in Parallel Lines Cut by a Transversal, pp. 164 – 166
8.2.C Demonstrate that the sum of the angle measures in a triangle is 180 degrees, and apply this fact to determine the sum of the angle measures of polygons and to determine unknown angle measures.	6.4 – Sum of Angles in Polygons, pp. 171 – 173
8.2.D Represent and explain the effect of one or more translations, rotations, reflections, or dilations (centered at the origin) of a geometric figure on the coordinate plane.	6.6 – Similarity and Dilations, pp. 177 – 179 6.7 – Reflections and Translations in the Coordinate Plane, pp. 180 – 183 6.8 – Rotations in the Coordinate Plane, pp. 184 – 187
8.2.E Quickly recall the square roots of the perfect squares from 1 through 225 and estimate the square roots of other positive numbers.	1.8 – Square Roots, pp. 40 – 42
8.2.F Demonstrate the Pythagorean Theorem and its converse and apply them to solve problems.	3.8 – Pythagorean Theorem, pp. 98 – 101
8.2.G Apply the Pythagorean Theorem to	3.8 – Pythagorean Theorem, pp. 98 – 101

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determine the distance between two points on the coordinate plane.	
<b>8.3. Summary and analysis of data sets</b>	
8.3.A Summarize and compare data sets in terms of variability and measures of center.	8.3 – Mean, Median, Mode, pp. 222 – 224
8.3.B Select, construct, and analyze data displays, including box–and–whisker plots, to compare two sets of data.	8.4 – Scatter Plots, pp. 227 – 229 8.5 – Box–and–Whiskers Plots, pp. 230 – 233 8.6 – Line Graphs, pp. 234 – 237 8.7 – Circle Graphs, pp. 238 – 240
8.3.C Create a scatterplot for a two–variable data set, and, when appropriate, sketch and use a trend line to make predictions.	8.4 – Scatter Plots, pp. 225 – 228
8.3.D Describe different methods of selecting statistical samples and analyze the strengths and weaknesses of each method.	8.8 – Appropriate Graphs, pp. 241 – 243
8.3.E Determine whether conclusions of statistical studies reported in the media are reasonable.	8.2 – Making Predictions, pp. 219 – 221 8.3 – Mean, Median, Mode, pp. 222 – 224
8.3.F Determine probabilities for mutually exclusive, dependent, and independent events for small sample spaces.	8.1 – Counting Methods, pp. 216 – 219
8.3.G Solve single– and multi–step problems using counting techniques and Venn diagrams and verify the solutions.	8.1 – Counting Methods, pp. 216 – 219
<b>8.4. Additional Key Content:</b>	
8.4.A Represent numbers in scientific notation, and translate numbers written in scientific notation into standard form.	2.8 – Scientific Notation, pp. 68 – 70
8.4.B Solve problems involving operations with numbers in scientific notation and verify solutions.	2.8 – Scientific Notation, pp. 68 – 70
8.4.C Evaluate numerical expressions involving	1.7 – Exponents, pp. 37 – 39

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non-negative integer exponents using the laws of exponents and the order of operations.	
8.4.D Identify rational and irrational numbers.	4.4 – Fractions, Decimals, and Percents, pp. 114 – 116
<b>8.5. Core Processes: Reasoning, problem solving, and communication</b>	
8.5.A Analyze a problem situation to determine the question(s) to be answered.	3.8 – Pythagorean Theorem, pp. 98 – 101
8.5.B Identify relevant, missing, and extraneous information related to the solution to a problem.	4.6 – Using Proportions to Solve Other Percent Problems, pp. 120 – 123 4.8 – Percent Applications, pp. 127 – 129 5.3 – Translating and Solving Word Problems, pp. 138 – 140
8.5.C Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.	3.4 – Solving Equations Using Addition or Subtraction, pp. 84 – 86 3.5 – Solving Equations Using Multiplication or Division, pp. 87 – 89 3.6 – Solving Inequalities by Using Addition and Subtraction, pp 90 – 93 3.7 – Solving Inequalities by Using Multiplication and Division, pp 94 – 97 3.8 – Pythagorean Theorem, pp. 98 – 101 5.3 – Translating and Solving Word Problems, pp. 138 – 140
8.5.D Represent a problem situation, describe the process used to solve the problem, and verify the reasonableness of the solution.	5.3 – Translating and Solving Word Problems, pp. 138 – 140 5.7 – Interpreting Linear Functions, pp. 151 – 153
8.5.E Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	5.3 – Translating and Solving Word Problems, pp. 138 – 140 5.4 – Relations and Functions, pp. 141 – 143 5.5 – Two Variable Equations, pp. 144 – 146
8.5.F Apply a previously used problem-solving strategy in a new context.	4.7 – Percent of Change, pp. 124 – 126 5.6 – Graphing Linear Functions, pp. 147 – 150 5.7 – Interpreting Linear Functions, pp. 151 – 153

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8.5.G Extract and organize mathematical information from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	5.3 – Translating and Solving Word Problems, pp. 138 – 140 5.7 – Interpreting Linear Functions, pp. 151 – 153 6.5 – Congruent Triangles, pp, 174 – 176
8.5.H Make and test conjectures based on data (or information) collected from explorations and experiments.	6.4 – Sum of Angles in Polygons, pp. 171 – 173 8.2 – Making Predictions, pp. 220 – 223 8.3 – Mean, Median, Mode, pp. 224 – 226