

Northpoint Horizons
Math Elevations™ (Comprehensive Intervention System)
Correlated to the
Virginia Standards of Learning

Grade 8

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

Virginia Standards of Learning	<i>Math Elevations</i> Level H (Grade 8) Teacher's Guide Examples/Lessons
Number and Number Sense	Unit 1 – Number Sense/Integers Unit 2 – Number Theory/Fractions and Exponents Unit 3 – Algebra Unit 4 - Ratio, Proportion, and Percent
8.1 The student will	
a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers;	2.6 – Rules of Exponents, pp. 62 – 64 3.1 – Commutative, Associative, and Distributive Properties, pp. 74 – 77 3.2 – Order of Operations, pp. 78 - 80 3.3 – Substituting Variables for Variables in Equations, pp. 81 – 83
b) recognize, represent, compare, and order numbers expressed in scientific notation; and	2.8 – Scientific Notation, pp. 68 - 70
c) compare and order decimals, fractions, percents, and numbers written in scientific notation.	1.1 – Integers and Absolute Value, pp. 18 - 20 1.7 – Exponents, pp. 37 - 39 2.3 – Least Common Multiple, pp. 49 - 51 2.6 – Rules of Exponents, pp. 62 – 64 4.5 – Solving a Percent Problems Using a Proportion, pp. 117 - 119
8.2 The student will describe orally and in writing	1.1 – Integers and Absolute Value, pp. 18 - 20

Virginia Standards of Learning	Math Elevations Level H (Grade 8) Teacher's Guide Examples/Lessons
Geometry	Unit 3 – Algebra Unit 6 – Geometry Unit 7 – Measurement
8.8 The student will apply transformations (rotate or turn, reflect or flip, translate or slide, and dilate or scale) to geometric figures represented on graph paper. The student will identify applications of transformations, such as tiling, fabric design, art, and scaling.	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 – 186
8.9 The student will construct a three-dimensional model, given the top, side, and/or bottom views.	7.4 – Surface Area of a Prism, pp. 199 – 201 7.5 – Surface Area of a Cylinder, pp. 202 – 204 7.6 – Surface Area of a Pyramid and a Cone, pp. 205 – 207 <i>See Extra Practice in Teacher's Resource Book pp. 144 – 146 for available nets</i>
8.10 The student will	
a) verify the Pythagorean Theorem, using diagrams, concrete materials, and measurement; and	3.8 – Pythagorean Theorem, pp. 98 – 101 <i>Manipulatives include base ten blocks, right triangle (BLM) and a 3-4-5 triangle.</i>
b) apply the Pythagorean Theorem to find the missing length of a side of a right triangle when given the lengths of the other two sides.	3.8 – Pythagorean Theorem, pp. 98 – 101 <i>See Extra Practice in Teacher's Resource Book p. 116 for additional application problems.</i>
Probability and Statistics	Unit 8 – Probability, Statistics, and Data Analysis
8.11 The student will analyze problem situations, including games of chance, board games, or grading scales, and make predictions, using knowledge of probability.	8.1 – Counting Methods, pp. 216 – 219 8.2 – Making Predictions, pp. 220 – 223
8.12 The student will make comparisons, predictions, and inferences, using information displayed in frequency distributions; box-and-whiskers plots; scattergrams; line, bar, circle, and picture graphs; and histograms.	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
8.13 The student will use a matrix to organize and	8.8 – Appropriate Graphs, pp. 241 – 243

Virginia Standards of Learning	Math Elevations Level H (Grade 8) Teacher's Guide Examples/Lessons
describe data.	
Patterns, Functions, and Algebra	Unit 4 - Ratio, Proportion, and Percent Unit 5 - Advanced Algebra and Functions
8.14 The student will	
a) describe and represent relations and functions, using tables, graphs, and rules; and	5.4 – Relations and Functions, pp. 141 – 143 5.5 – Two Variable Equations, pp. 144 - 146
b) relate and compare tables, graphs, and rules as different forms of representation for relationships.	5.7 – Interpreting Linear Functions, pp. 151 - 153
8.15 The student will solve two-step equations and inequalities in one variable, using concrete materials, pictorial representations, and paper and pencil.	5.1 – Solving Two-Step Equations, pp. 132 – 134 5.2 – Solving Multi-Step Equations, pp. 135 – 137 <i>Manipulatives include Algeblocks®, two-color counters, and balanced scale.</i>
8.16 The student will graph a linear equation in two variables, in the coordinate plane, using a table of ordered pairs.	5.6 – Graphing Linear Functions, pp. 147 – 150 5.7 – Interpreting Linear Functions, pp. 151 – 153 5.8 – Slope, pp. 154 - 157
8.17 The student will create and solve problems, using proportions, formulas, and functions.	4.5 – Solving Percent Problems Using a Proportion, pp. 117 – 119 4.6 – Using Proportions to Solve Other Percent Problems, pp. 120 – 123 5.3 – Translating and Solving Word Problems, pp. 138 – 140 5.4 – Relations and Functions, pp. 141 – 143
8.18 The student will use the following algebraic terms appropriately: <i>domain, range, independent variable, and dependent variable.</i>	5.4 – Relations and Functions, pp. 141 – 143 5.5 – Two-Variable Equations, pp. 144 – 146 5.6 – Graphing Linear Functions, pp. 147 – 150