

Northpoint Horizons
Math Elevations™ (Comprehensive Intervention System)
Correlated to the Grade 8
Wyoming Mathematics Content and Performance Standards

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

Grade 8

Math Content Standard	Math Elevations Level H (Grade 8) Teacher's Guide Examples/Lessons
CONTENT STANDARD 1. NUMBER OPERATIONS AND CONCEPTS	
Students use numbers, number sense, and number relationships in a problem-solving situation.	
MA8.1.1 Students represent and apply numbers in a variety of equivalent forms (such as changing from percent to decimal to fraction, etc.) and in a problem-solving context: <ul style="list-style-type: none"> • prime factors, factors, and multiples; • rational numbers and proportions; and • square roots and powers. 	Unit 1 – Lesson 7: <i>Exponents</i> pp. 37-39 Lesson 8: <i>Square Roots</i> pp. 40-42 Unit 2 – Lesson 1: <i>Factors and Prime Factorization</i> pp. 46-48 Lesson 2: <i>Greatest Common Factor (GCF)</i> pp. 49-51 Lesson 3: <i>Least Common Multiple (LCM)</i> pp. 52-54 Lesson 6: <i>Rules of Exponents</i> pp. 62-64 Lesson 7: <i>Negative and Zero Exponents</i> pp. 65-67 Lesson 8: <i>Scientific Notation</i> pp. 68-70 Unit 4 – Lesson 1: <i>Ratios and Rates</i> pp. 104-107 Lesson 2: <i>Writing and Solving Proportions</i> pp. 108-110 Lesson 3: <i>Scale Drawings and Models</i> pp. 111-113 Lesson 5: <i>Solving Percent Problems Using a Proportion</i> pp. 117-119 Lesson 6: <i>Using Proportions to Solve other Percent Problems</i> pp. 120-123
MA8.1.2 Students extend understanding and use of basic arithmetic operations on rational numbers. <ul style="list-style-type: none"> • simplify numerical expressions using the order of operations; and • order rational numbers expressed in a variety of forms 	Unit 3 – Lesson 2: <i>Order of Operations</i> pp. 78-80 Unit 4 – Lesson 4: <i>Fractions, Decimals, and Percents</i> pp. 114-116

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MA8.1.3 Students explain their choice of estimation and problem-solving strategies and justify results of solutions in problem-solving situations involving rational numbers.	Unit 1 – Lesson 8: <i>Square Roots</i> pp. 40-42
MA8.1.4 Students understand properties of operations with rational numbers.	Unit 1 – Lesson 2: <i>Adding Integers Using a Number Line</i> pp. 21-23 Lesson 3: <i>Adding Integers Using Absolute Value</i> pp. 24-27 Lesson 4: <i>Subtracting Integers</i> pp. 28-30 Lesson 5: <i>Multiplying Integers</i> pp. 31-33 Lesson 6: <i>Dividing Integers</i> pp. 34-36 Unit 2 – Lesson 4: <i>Adding and Subtracting Fractions</i> pp. 55-57 Lesson 5: <i>Multiplying and Dividing Fractions and Mixed Numbers</i> pp. 58-61
CONTENT STANDARD 2. GEOMETRY Students apply geometric concepts, properties, and relationships in a problem-solving situation.	
MA8.2.2 Students make conjectures about geometric objects based on knowledge of geometric transformations, congruence, and similarity.	Unit 6 – Lesson 5: <i>Congruent Triangles</i> pp. 174-176 Lesson 6: <i>Similarity and Dilations</i> pp. 177-179 Lesson 7: <i>Reflections and Translations in the Coordinate Plane</i> pp. 180-183 Lesson 8: <i>Rotations in the Coordinate Plane</i> pp. 184-186
MA8.2.3 Students use geometric formulas including the Pythagorean Theorem.	Unit 3 – Lesson 8: <i>Pythagorean Theorem</i> pp. 98-101
MA8.2.4 Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.	Unit 5 – Lesson 8: <i>Slope</i> pp. 154-157
MA8.2.5 Students represent geometric figures using a rectangular coordinate plane.	Unit 6 – Lesson 7: <i>Reflections and Translations in the Coordinate Plane</i> pp. 180-183 Lesson 8: <i>Rotations in the Coordinate Plane</i> pp. 184-186
CONTENT STANDARD 3. MEASUREMENT Students use a variety of tools and techniques of measurement in a problem-solving situation.	

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MA8.3.2 Students apply estimation and measurement of capacity/volume to content problems and convert within metric units (ml, l).	Unit 7 – Lesson 7: <i>Volume of a Prism and a Cylinder</i> pp. 208-210 Lesson 8: <i>Volume of a Pyramid and a Cone</i> pp. 211-213
MA8.3.3 Students select and use the appropriate methods, tools, and units to solve problems involving angle measure, perimeter, circumference, area (including circles), and volume of rectangular solids.	Unit 6 – Lesson 1: <i>Angles</i> pp. 160-163 Lesson 2: <i>Angles in Parallel Lines Cut by a Transversal</i> pp. 164-166 Lesson 4: <i>Sum of Angles in Polygons</i> pp. 171-173 Lesson 8: <i>Rotations in the Coordinate Plane</i> pp. 184-186 Unit 7 – Lesson 1: <i>Area of a Trapezoid</i> pp. 190-192 Lesson 2: <i>Circumference of a Circle</i> pp. 193-195 Lesson 3: <i>Area of a Circle</i> pp. 196-198 Lesson 4: <i>Surface Area of a Prism</i> pp. 199-201 Lesson 5: <i>Surface Area of a Cylinder</i> pp. 202-204 Lesson 6: <i>Surface Area of a Pyramid and a Cone</i> pp. 205-207 Lesson 7: <i>Volume of a Prism and a Cylinder</i> pp. 208-210 Lesson 8: <i>Volume of a Pyramid and a Cone</i> pp. 211-213
CONTENT STANDARD 4. ALGEBRA Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.	
MA8.4.1 Students translate word phrases, which involve the four basic operations to mathematical expressions.	Unit 5 – Lesson 3: <i>Translating and Solving Word Problems</i> pp. 138-140
MA8.4.2 Students solve one- and two- step linear equations each with an integer coefficient and integer solutions.	Unit 5 – Lesson 1: <i>Solving Two-Step Equations</i> pp. 132-134 Lesson 2: <i>Solving Multi-Step Equations</i> pp. 135-137 Lesson 5: <i>Two-Variable Equations</i> pp. 144-146 Lesson 6: <i>Graphing Linear Functions</i> pp. 147-150

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	Lesson 7: <i>Interpreting Linear Functions</i> pp. 151-153
MA8.4.3 Students evaluate algebraic expressions and formulas given integer values for variables.	Unit 5 – Lesson 1: <i>Solving Two-Step Equations</i> pp. 132-134 Lesson 2: <i>Solving Multi-Step Equations</i> pp. 135-137 Lesson 5: <i>Two-Variable Equations</i> pp. 144-146
MA8.4.4 Using simple linear equations, students create a table, and graph the solutions on the coordinate system.	Unit 5 – Lesson 6: <i>Graphing Linear Functions</i> pp. 147-150 Lesson 7: <i>Interpreting Linear Functions</i> pp. 151-153
CONTENT STANDARD 5. DATA ANALYSIS AND PROBABILITY Students use data analysis and probability to analyze given situations and the results of experiments.	
MA8.5.1 Students systematically collect, organize, describe, analyze, and represent data using tables, charts, diagrams, and graphs.	Unit 8 – Lesson 4: <i>Scatter Plots</i> pp. 225-229 Lesson 5: <i>Box-and-Whiskers Plots</i> pp. 230-233 Lesson 6: <i>Line Graphs</i> pp. 234-237 Lesson 7: <i>Circle Graphs</i> pp. 238-240 Lesson 8: <i>Appropriate Graphs</i> pp. 241-243
MA8.5.2 Students calculate mean, median, mode, and range for data sets and use in a real-world setting appropriate to grade level.	Unit 8 – Lesson 3: <i>Mean, Median, and Mode</i> pp. 224-226
MA8.5.3 Students predict, compare, and calculate probable outcomes of experiments or simulations.	Unit 8 – Lesson 1: <i>Counting Methods</i> pp. 216-219 Lesson 2: <i>Making Predictions</i> pp. 220-223
MA8.5.4 Students communicate about the likelihood of events using concepts from probability such as impossible, equally likely and certain appropriate to grade level.	Unit 8 – Lesson 1: <i>Counting Methods</i> pp. 216-219 Lesson 2: <i>Making Predictions</i> pp. 220-223