

Northpoint Horizons

Math Elevations™ (Comprehensive Intervention System)
Correlated to the Grade 5
Colorado Model Content Standards for Mathematics

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet the **Colorado Model Content Standards for Mathematics**.

Grade 5

Content Standards	<i>Math Elevations</i> Teacher's Guide Level E (Grade 5) Lesson Examples
Standard 1: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.	
1. demonstrate meanings for integers, rational numbers, percents, exponents, square roots, and pi (π) use physical materials and technology in problem-solving situations;	Unit 1 – Lesson 1: <i>Whole Number Place Value</i> pp. 18-19 Lesson 2: <i>Place Value Through Thousandths</i> pp. 20-21 Lesson 3: <i>Working with Whole Numbers</i> pp. 22-23 Lesson 4: <i>Working with Decimal Numbers</i> pp. 24-25 Unit 3 – Lesson 1: <i>Understanding Fractions</i> pp. 54-55 Unit 4 – Lesson 6: <i>Understanding Percent</i> pp. 82-83
2. read, write, and order integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π ;	Unit 1 – Lesson 1: <i>Whole Number Place Value</i> pp. 18-19 Lesson 2: <i>Place Value Through Thousandths</i> pp. 20-21 Lesson 3: <i>Working with Whole Numbers</i> pp. 22-23 Lesson 4: <i>Working with Decimal Numbers</i> pp. 24-25 Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56-57 Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58-59 Lesson 4: <i>Relating Decimals and Fractions</i> pp. 60-61 Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62-63 Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64-65 Lesson 7: <i>Converting Fractions to Decimals</i> pp. 66-67

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	Lesson 8: <i>Comparing and Ordering Fractions and Decimals</i> pp. 68-69 Unit 4 – Lesson 6: <i>Understanding Percent</i> pp. 82-83 Lesson 7: <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85 Lesson 8: <i>Percent of a Quantity</i> pp. 86-87
3. apply number theory concepts (for example, primes, factors, multiples) to represent numbers in various ways;	Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26-27 Lesson 6: <i>Divisibility</i> pp. 28-29 Lesson 7: <i>Greatest Common Factor</i> pp. 30-31 Lesson 8: <i>Least Common Multiple</i> pp. 32-33
4. use the relationships among fractions, decimals, and percents, include the concepts of ratio and proportion, in problem-solving situations;	Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56-57 Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58-59 Lesson 4: <i>Relating Decimals and Fractions</i> pp. 60-61 Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62-63 Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64-65 Lesson 7: <i>Converting Fractions to Decimals</i> pp. 66-67 Lesson 8: <i>Comparing and Ordering Fractions and Decimals</i> pp. 68-69 Unit 4 – Lesson 7: <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85
5. develop, test, and explain conjectures about properties of integers and rational numbers; and	Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26-27 Lesson 6: <i>Divisibility</i> pp. 28-29
6. use number sense to estimate and justify the reasonableness of solutions to problems involving integers, rational numbers, and common irrational numbers such as $\sqrt{2}$, $\sqrt{5}$, and π .	Unit 2 – Lesson 1: <i>Addition and Subtraction of Whole Numbers</i> pp. 36-37 Lesson 6: <i>Estimating Quotients</i> pp. 46-47
Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.	
1. represent, describe, and analyze patterns and relationships using tables, graphs, verbal rules, and standard algebraic notation;	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93

Content Standards	<i>Math Elevations</i> Teacher's Guide Level E (Grade 5) Lesson Examples
2. describe patterns using variables, expressions, equations, and inequalities in problem-solving situations;	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
3. analyze functional relationships to explain how a change in one quantity results in a change in another (for example, how the area of a circle changes as the radius increases, or how a person's height changes over time);	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
5. solve simple linear equations in problem-solving situations using a variety of methods (informal, formal, graphical) and a variety of tools (physical materials, calculators, computers).	Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99
Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning used in solving these problems.	
1. read and construct displays of data using appropriate techniques (for example, line graphs, circle graphs, scatter plots, box plots, stem-and-leaf plots) and appropriate technology;	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Lesson 7: <i>Line Graphs</i> pp. 156-157 Lesson 8: <i>Circle Graphs</i> pp. 158-159
2. display and use measures of central tendency, such as mean, median, and mode, and measures of variability, such as range and quartiles;	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5: <i>The Mean</i> pp. 152-153
3. evaluate arguments that are based on statistical claims;	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147
4. formulate hypotheses, draw conclusions, and make convincing arguments based on data analysis;	Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144-145 Lesson 2: <i>Evaluating Probability</i> pp. 146-147
5. determine probabilities through experiments or simulations;	Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149
6. make predictions and compare results using both experimental and theoretical probability drawn from real-world problems; and	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147 Lesson 3: <i>Probability Experiments</i> pp. 148-149
7. use counting strategies to determine all the possible outcomes from an experiment (for example, the number of ways students can line up to have their picture taken).	Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144-145
Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.	
1. construct two- and three-dimensional models using a variety of materials and tools;	Unit 7 – Lesson 7: <i>Classifying Quadrilaterals</i> pp. 138-139

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	Lesson 8: <i>Solid Figures</i> pp. 140-141
2. describe, analyze, and reason informally about the properties (for example, parallelism, perpendicularity, congruence) of two- and three-dimensional figures ;	Unit 7 – Lesson 1: <i>Geometric Concepts</i> pp. 126-127 Lesson 2: <i>Lines</i> pp. 128-129
3. apply the concepts of ratio, proportion, and similarity in problem-solving situations;	Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111
4. solve problems using coordinate geometry;	Unit 5 – Lesson 8: <i>The Coordinate Plane</i> pp. 104-105
5. solve problems involving perimeter and area in two dimensions, and involving surface area and volume in three dimensions; and	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Lesson 5: <i>Area of Triangles</i> pp. 116-117 Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119
6. transform geometric figures using reflections, translations, and rotations to explore congruence.	Unit 7 – Lesson 5: <i>Translations</i> pp. 134-135 Lesson 6: <i>Reflections and Rotations</i> pp. 136-137
Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.	
1. estimate, use, and describe measures of distance, perimeter, area, volume, capacity, weight, mass, and angle comparison;	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Lesson 5: <i>Area of Triangles</i> pp. 116-117 Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119 Lesson 7: <i>Converting Within the Metric System</i> pp. 120-121 Lesson 8: <i>Converting Within the Customary System</i> pp. 122-123 Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
2. estimate, make, and use direct and indirect measurements to describe and make comparisons;	Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120-121 Lesson 8: <i>Converting Within the Customary System</i> pp. 122-

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4. develop and use formulas and procedures to solve problems involving measurement;	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Lesson 5: <i>Area of Triangles</i> pp. 116-117 Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119
5. describe how a change in an object's linear dimensions affects its perimeter, area, and volume; and	Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111
6. select and use appropriate units and tools to measure to the degree of accuracy required in a particular problem-solving situation.	Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120-121 Lesson 8: <i>Converting Within the Customary System</i> pp. 122-123
Standard 6: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.	
1. use models to explain how ratios, proportions, and percents can be used to solve real-world problems;	Unit 4 – Lesson 6: <i>Understanding Percent</i> pp. 82-83 Lesson 7: <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85 Lesson 8: <i>Percent of a Quantity</i> pp. 86-87
2. construct, use, and explain procedures to compute and estimate with whole numbers, fractions, decimals, and integers;	Unit 2 – Lesson 1: <i>Addition and Subtraction of Whole Numbers</i> pp. 36-37 Lesson 2: <i>Addition and Subtraction of Decimal Numbers</i> pp. 38-39 Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40-41 Lesson 4: <i>Multiplying by a Two-Digit Factor</i> pp. 42-43 Lesson 5: <i>Multiplying Decimals</i> pp. 44-45 Lesson 6: <i>Estimating Quotients</i> pp. 46-47 Lesson 7: <i>Long Division</i> pp. 48-49 Lesson 8: <i>Interpreting Remainders</i> pp. 50-51 Unit 4 –

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	Lesson 1: <i>Addition and Subtraction of Fractions (Like Denominators)</i> pp. 72-73 Lesson 2: <i>Addition and Subtraction of Mixed Numbers (Like Denominators)</i> pp. 74-75 Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76-77 Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78-79 Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81
3. develop, apply, and explain a variety of different estimation strategies in problem-solving situations, and explain why an estimate may be acceptable in place of an exact answer; and	Unit 2 – Lesson 1: <i>Addition and Subtraction of Whole Numbers</i> pp. 36-37 Lesson 6: <i>Estimating Quotients</i> pp. 46-47
4. select and use appropriate algorithms for computing with commonly used fractions and decimals, percents, and integers in problem-solving and determine whether the results are reasonable.	Unit 2 – Lesson 1: <i>Addition and Subtraction of Whole Numbers</i> pp. 36-37 Lesson 2: <i>Addition and Subtraction of Decimal Numbers</i> pp. 38-39 Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40-41 Lesson 4: <i>Multiplying by a Two-Digit Factor</i> pp. 42-43 Lesson 5: <i>Multiplying Decimals</i> pp. 44-45 Lesson 6: <i>Estimating Quotients</i> pp. 46-47 Lesson 7: <i>Long Division</i> pp. 48-49 Lesson 8: <i>Interpreting Remainders</i> pp. 50-51 Unit 4 – Lesson 1: <i>Addition and Subtraction of Fractions (Like Denominators)</i> pp. 72-73 Lesson 2: <i>Addition and Subtraction of Mixed Numbers (Like Denominators)</i> pp. 74-75 Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76-77 Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78-79

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	Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81