

**Northpoint Horizons**

***Math Elevations™ (Comprehensive Intervention System)***  
**Correlated to Grade 5**  
**Ohio Academic Content Standards for Mathematics**

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

Ohio Academic Content Standards Grade 5	Math Elevations Level E Teacher’s Guide Examples/Lessons
<b>Number, Number Sense and Operations Standard</b>	
1. Use models and visual representation to develop the concept of ratio as part-to-part and part-to-whole, and the concept of percent as part-to-whole.	Unit 4 – Lesson 6: <i>Understanding Percent</i> pp. 82-83
2. Use various forms of “one” to demonstrate the equivalence of fractions.	Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56-57
3. Identify and generate equivalent forms of fractions, decimals and percents.	Unit 3 – Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58-59 Unit 3 – Lesson 4: <i>Relating Decimals and Fractions</i> pp. 60-61 Unit 3 – Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62-63 Unit 3 – Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64-65 Unit 3 – Lesson 7: <i>Converting Fractions to Decimals</i> pp. 66-67 Unit 3 – 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
4. Round decimals to a given place value and round fractions (including mixed numbers) to the nearest half.	Unit 1 – Lesson 4: <i>Working with Decimal Numbers</i> pp. 24-25
5. Recognize and identify perfect squares and their roots.	Level F: Unit 1 – Lesson 2: <i>Understanding Exponents</i> pp. 20-21
6. Represent and compare numbers less than 0 by extending the	Level D:

number line and using familiar applications; e.g., temperature, owing money.	Unit 2 – Lesson 8: <i>Word Problems</i> pp. 50-51
7. Use commutative, associative, distributive, identity and inverse properties to simplify and perform computations.	Unit 5 – Lesson 1: <i>Order of Operations</i> pp. 90-91
8. Identify and use relationships between operations to solve problems.	Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99
9. Use order of operations, including use of parentheses, to simplify numerical expressions.	Unit 5 – Lesson 1: <i>Order of Operations</i> pp. 90-91
10. Justify why fractions need common denominators to be added or subtracted.	Unit 4 – Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76-77 Unit 4 – Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78-79 Unit 4 – Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81
11. Explain how place value is related to addition and subtraction of decimals; e.g., $0.2 + 0.14$ ; the two tenths is added to the one tenth because they are both tenths.	Unit 2 – Lesson 2: <i>Addition and Subtraction of Decimal Numbers</i> pp. 38-39
12. Use physical models, points of reference, and equivalent forms to add and subtract commonly used fractions with like and unlike denominators and decimals.	Unit 2 – Lesson 2: <i>Addition and Subtraction of Decimal Numbers</i> pp. 38-39 Unit 4 – Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76-77 Unit 4 – Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78-79 Unit 4 – Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81
13. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies.	Unit 2 – Lesson 6: <i>Estimating Quotients</i> pp. 46-47
<b>Measurement Standard</b>	
1. Identify and select appropriate units to measure angles; i.e., degrees.	Unit 7 –

	Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
2. Identify paths between points on a grid or coordinate plane and compare the lengths of the paths; e.g., shortest path, paths of equal length.	Unit 5 – Lesson 8: <i>The Coordinate Plane</i> pp. 104-105
3. Demonstrate and describe the differences between covering the faces (surface area) and filling the interior (volume) of three-dimensional objects.	Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119
4. Demonstrate understanding of the differences among linear units, square units and cubic units.	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Unit 6 – Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116-117 Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119 Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120-121 Unit 6 – Lesson 8: <i>Converting Within the Customary System</i> pp. 122-123
5. Make conversions within the same measurement system while performing computations.	Unit 6 – Lesson 7: <i>Converting Within the Metric System</i> pp. 120-121 Unit 6 – Lesson 8: <i>Converting Within the Customary System</i> pp. 122-123
6. Use strategies to develop formulas for determining perimeter and area of triangles, rectangles and parallelograms, and volume of rectangular prisms.	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Unit 6 – Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116-117 Unit 6 – Lesson 6: <i>Volume of Rectangular Solids</i> pp. 118-119

7. Use benchmark angles (e.g.; 45°, 90°, 120°) to estimate the measure of angles, and use a tool to measure and draw angles	Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
<b>Geometry and Spatial Sense Standard</b>	
1. Draw circles, and identify and determine relationships among the radius, diameter, center and circumference; e.g., radius is half the diameter, the ratio of the circumference of a circle to its diameter is an approximation of $\pi$ .	Level F: Unit 6 – Lesson 4: <i>Circles</i> pp. 114-115
2. Use standard language to describe line, segment, ray, angle, skew, parallel and perpendicular.	Unit 7 – Lesson 1: <i>Geometric Concepts</i> pp. 126-127
3. Label vertex, rays, interior and exterior for an angle.	Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
4. Describe and use properties of congruent figures to solve problems.	Unit 7 – Lesson 5: <i>Translations</i> pp. 134-135
5. Use physical models to determine the sum of the interior angles of triangles and quadrilaterals.	Level G: Unit 6 – Lesson 2: <i>Triangles</i> pp. 160-162 Lesson 3: <i>Polygons</i> pp. 163-165
6. Extend understanding of coordinate system to include points whose x or y values may be negative numbers.	Unit 5 – Lesson 8: <i>The Coordinate Plane</i> pp. 104-105
7. Understand that the measure of an angle is determined by the degree of rotation of an angle side rather than the length of either side.	Unit 7 – Lesson 6: <i>Reflections and Rotations</i> pp. 136-137
8. Predict what three-dimensional object will result from folding a two-dimensional net, then confirm the prediction by folding the net.	Unit 7 – Lesson 8: <i>Solid Figures</i> pp. 140-141
<b>Patterns, Functions and Algebra Standard</b>	
1. Justify a general rule for a pattern or a function by using physical materials, visual representations, words, tables or graphs.	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
2. Use calculators or computers to develop patterns, and generalize them using tables and graphs.	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
3. Use variables as unknown quantities in general rules when describing patterns and other relationships.	Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99 Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101 Unit 5 – Lesson 7: <i>Inequalities</i> pp. 102-103
4. Create and interpret the meaning of equations and inequalities	Unit 5 –

representing problem situations.	Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99 Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101 Unit 5 – Lesson 7: <i>Inequalities</i> pp. 102-103
5. Model problems with physical materials and visual representations, and use models, graphs and tables to draw conclusions and make predictions.	Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144-145 Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147 Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149 Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150-151 Unit 8 – Lesson 5: <i>The Mean</i> pp. 152-153
6. Describe how the quantitative change in a variable affects the value of a related variable; e.g., describe how the rate of growth varies over time, based upon data in a table or graph.	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
<b>Data Analysis and Probability Standard</b>	
1. Read, construct and interpret frequency tables, circle graphs and line graphs.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157 Unit 8 – Lesson 8: <i>Circle Graphs</i> pp. 158-159
2. Select and use a graph that is appropriate for the type of data to be displayed; e.g., numerical vs. categorical data, discrete vs. continuous data.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157 Unit 8 – Lesson 8: <i>Circle Graphs</i> pp. 158-159
3. Read and interpret increasingly complex displays of data, such as double bar graphs.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157 Unit 8 – Lesson 8: <i>Circle Graphs</i> pp. 158-159

4. Determine appropriate data to be collected to answer questions posed by students or teacher, collect and display data, and clearly communicate findings.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Lesson 7: <i>Line Graphs</i> pp. 156-157
5. Modify initial conclusions, propose and justify new interpretations and predictions as additional data are collected.	Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157
6. Determine and use the range, mean, median and mode, and explain what each does and does not indicate about the set of data.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150-151 Unit 8 – Lesson 5: <i>The Mean</i> pp. 152-153
7. List and explain all possible outcomes in a given situation.	Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144-145
8. Identify the probability of events within a simple experiment, such as three chances out of eight.	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147
9. Use 0, 1 and ratios between 0 and 1 to represent the probability of outcomes for an event, and associate the ratio with the likelihood of the outcome.	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147
10. Compare what should happen (theoretical/expected results) with what did happen (experimental/actual results) in a simple experiment.	Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147 Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149
11. Make predictions based on experimental and theoretical probabilities.	Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149