

## Northpoint Horizons

### ***Math Elevations™ (Comprehensive Intervention System)*** **Correlated to the** **Illinois State Mathematics Content Standards**

Grade 5

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

Math Content Standard	Math Elevations Level E (Grade 5) Teacher's Guide Examples/Lessons
<b>STATE GOAL 6, NUMBER SENSE: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions</b>	
<b>6.A.</b> Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	<b>Unit 1 – Numbers and Operations</b> <b>Unit 2 – Computation with Whole and Decimal Numbers</b> <b>Unit 3 – Numeration and Fractions</b> <b>Unit 4 – Computations with Fractions, Decimals, and Percents</b>
<b>6.A.2.</b> Compare and order whole numbers, fractions and decimals using concrete materials, drawings and mathematical symbols.	Unit 1 – Lesson 3 – <i>Working with Whole Numbers</i> pp. 22-23 Lesson 4 – <i>Working with Decimal Numbers</i> pp. 24-25 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 Unit 3 – Lesson 2 – <i>Equivalent Fractions and Simplest Form</i> pp. 56-57 Lesson 4 – <i>Relating Decimals and Fractions</i> pp. 60-61 Lesson 5 – <i>Comparing and Ordering Fractions</i> pp. 62-63 Lesson 8 – <i>Comparing and Ordering Fractions and</i>

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	<i>Decimals</i> pp. 68-69 Unit 4 – Lesson 7 – <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85
<b>6.B.</b> Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	<b>Unit 1 – Numbers and Operations</b> <b>Unit 2 – Computation with Whole and Decimal Numbers</b> <b>Unit 3 – Numeration and Fractions</b> <b>Unit 4 – Computations with Fractions, Decimals, and Percents</b>
<b>6.B.2.</b> Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.	Unit 1 – Lesson 5 – <i>Primes and Composites</i> pp. 26-27 Lesson 7 – <i>Greatest Common Factor</i> pp. 30-31 Lesson 8 – <i>Least Common Factor</i> pp. 32-33 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 4 – <i>Multiplying by a Two-Digit Factor</i> pp. 42-43 Lesson 5 – <i>Multiplying Decimals</i> pp. 44-45 Lesson 7 – <i>Long Division</i> pp. 48-49 Unit 3 – Lesson 4 – <i>Relating Decimals and Fractions</i> pp. 60-61 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
<p><b>6.C.</b> Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.</p>	<p><b>Unit 1 – Numbers and Operations</b>  <b>Unit 2 – Computation with Whole and Decimal Numbers</b>  <b>Unit 3 – Numeration and Fractions</b>  <b>Unit 4 – Computations with Fractions, Decimals, and Percents</b></p>
<p><b>6.C.2a.</b> Select and perform computational procedures to solve problems with whole numbers, fractions and decimals.</p>	<p>Unit 1 –  Lesson 5 – <i>Primes and Composites</i> pp. 26-27  Lesson 7 – <i>Greatest Common Factor</i> pp. 30-31  Lesson 8 – <i>Least Common Factor</i> pp. 32-33  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 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  Unit 3 –  Lesson 4 – <i>Relating Decimals and Fractions</i> pp. 60-61  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  Lesson 5 – <i>Subtraction of Mixed Numbers (Unlike</i></p>

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<p><b>6.C.2b.</b> Show evidence that computational results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable.</p>	<p><i>Denominators</i>) pp. 80-81</p> <p>Unit 1 –  Lesson 5 – <i>Primes and Composites</i> pp. 26-27  Lesson 7 – <i>Greatest Common Factor</i> pp. 30-31  Lesson 8 – <i>Least Common Factor</i> pp. 32-33</p> <p>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 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</p> <p>Unit 3 –  Lesson 4 – <i>Relating Decimals and Fractions</i> pp. 60-61</p> <p>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  Lesson 5 – <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81</p>
<p><b>6.D.</b> Solve problems using comparison of quantities, ratios, proportions and percents.</p>	<p><b>Unit 1 – Numbers and Operations</b>  <b>Unit 2 – Computation with Whole and Decimal Numbers</b>  <b>Unit 4 – Computations with Fractions, Decimals, and Percents</b></p>

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<p><b>6.D.2.</b> Describe the relationship between two sets of data using ratios and appropriate notations (e.g., <math>a/b</math>, <math>a</math> to <math>b</math>, <math>a:b</math>).</p>	<p>Unit 4 – Lesson 6 – <i>Understanding Percent</i> pp. 82-83</p>
<p><b>STATE GOAL 7. Estimation and Measurement: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.</b></p>	
<p><b>7.A.</b> Measure and compare quantities using appropriate units, instruments and methods.</p>	<p><b>Unit 2 – Computation with Whole and Decimal Numbers</b> <b>Unit 6 - Measurement</b></p>
<p><b>7.A.2a.</b> Calculate, compare and convert length, perimeter, area, weight/mass and volume within the customary and metric systems.</p>	<p>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</p>
<p><b>7.A.2b.</b> Solve addition, subtraction, multiplication and division problems using currency.</p>	<p>Unit 2 – 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 5 – <i>Multiplying Decimals</i> pp. 44-45</p>
<p><b>7.B.</b> Estimate measurements and determine acceptable levels of accuracy.</p>	<p><b>Unit 6 - Measurement</b></p>
<p><b>7.B.2a.</b> Determine and communicate possible methods for estimating a given measure, selecting proper units in both customary and metric systems.</p>	<p>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</p>
<p><b>7.B.2b.</b> Estimate conversions between</p>	<p>Unit 6 –</p>

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measures within the customary and metric systems.	Lesson 7 – <i>Converting Within the Metric System</i> pp. 120-121 Lesson 8 – <i>Converting Within the Customary System</i> pp. 122-123
<b>7.C.</b> Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.	<b>Unit 6 - Measurement</b>
<b>7.C.2a.</b> Describe relationships in a simple scale drawing.	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
<b>7.C.2b.</b> Construct or draw figures with given perimeters and areas.	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
<b>STATE GOAL 8. Algebra and Analytical Methods: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.</b>	
<b>8.A.</b> Describe numerical relationships using variables and patterns.	<b>Unit 5 - Algebra</b>
<b>8.A.2a.</b> Identify, describe, extend and create geometric and numeric patterns.	Unit 5 – Lesson 2 – <i>Investigating Patterns</i> pp. 92-93 Lesson 3 – <i>Algebraic Expressions</i> pp. 94-95 Lesson 4 – <i>Evaluating Expressions</i> pp. 96-97
<b>8.A.2b.</b> Construct and solve number sentences using a variable to represent an unknown	Unit 5 – Lesson 3 – <i>Algebraic Expressions</i> pp. 94-95

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quantity.	Lesson 4 – <i>Evaluating Expressions</i> pp. 96-97 Lesson 5 – <i>Solving One-Step Equations</i> pp. 98-99 Lesson 6 – <i>Problem Solving</i> pp. 100-101 Lesson 8 – <i>The Coordinate Plane</i> pp. 104-105
<b>8.B.</b> Interpret and describe numerical relationships using tables, graphs and symbols.	<b>Unit 5 - Algebra</b>
<b>8.B.2.</b> Analyze a geometric pattern and express the results numerically.	Unit 5 – Lesson 8 – <i>The Coordinate Plane</i> pp. 104-105
<b>8.C.</b> Solve problems using systems of numbers and their properties	<b>Unit 5 - Algebra</b>
<b>8.C.2.</b> Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.	Unit 5 – Lesson 1 – <i>Order of Operations</i> pp. 90-91 Lesson 3 – <i>Algebraic Expressions</i> pp. 94-95 Lesson 4 – <i>Evaluating Expressions</i> pp. 96-97 Lesson 7 – <i>Inequalities</i> pp. 102-103
<b>8.D.</b> Use algebraic concepts and procedures to represent and solve problems.	<b>Unit 5 - Algebra</b>
<b>8.D.2.</b> Solve linear equations involving whole numbers.	Unit 5 – Lesson 5 – <i>Solving One-Step Equations</i> pp. 98-99 Lesson 6 – <i>Problem Solving</i> pp. 100-101
<b>STATE GOAL 9, GEOMETRY: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.</b>	
<b>9.A.</b> Demonstrate and apply geometric concepts involving points, lines, planes and space.	<b>Unit 7 - Geometry</b>
<b>9.A.2a.</b> Build physical models of two- and three-dimensional shapes.	Unit 7 – Lesson 8 – <i>Solid Figures</i> pp. 140-141
<b>9.A.2b.</b> Identify and describe how geometric figures are used in practical settings (e.g., construction, art, advertising).	Throughout Unit 7 there are opportunities to discuss the use of geometric figures in practical settings. Through the use of manipulatives and drawings, students identify how geometric figures are used in everyday experiences. See Unit 7, Lesson 8, <i>Solid Figures</i> , pp. 140-141, for one example.

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<p><b>9.A.2c.</b> Describe and draw representations of geometric relationships, patterns, symmetries, and designs in two- and three-dimensions with and without technology.</p>	<p>Unit 7 –  Lesson 1 – <i>Geometric Concepts</i> pp. 126-127  Lesson 2 – <i>Lines</i> pp. 128-129  Lesson 3 – <i>Measuring and Classifying Angles</i> pp. 130-131  Lesson 4 – <i>Classifying Triangles</i> pp. 132-133  Lesson 5 – <i>Translations</i> pp. 134-135  Lesson 6 – <i>Reflections and Rotations</i> pp. 136-137  Lesson 7 – <i>Classifying Quadrilaterals</i> pp. 138-139  Lesson 8 – <i>Solid Figures</i> pp. 140-141</p>
<p><b>9.B.</b> Identify, describe, classify and compare relationships using points, lines, planes and solids.</p>	<p><b>Unit 7 - Geometry</b></p>
<p><b>9.B.2.</b> Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent and line symmetry.</p>	<p>Unit 7 –  Lesson 1 – <i>Geometric Concepts</i> pp. 126-127  Lesson 2 – <i>Lines</i> pp. 128-129  Lesson 3 – <i>Measuring and Classifying Angles</i> pp. 130-131  Lesson 4 – <i>Classifying Triangles</i> pp. 132-133  Lesson 5 – <i>Translations</i> pp. 134-135  Lesson 6 – <i>Reflections and Rotations</i> pp. 136-137  Lesson 7 – <i>Classifying Quadrilaterals</i> pp. 138-139  Lesson 8 – <i>Solid Figures</i> pp. 140-141</p>
<p><b>9.C.</b> Construct convincing arguments and proofs to solve problems.</p>	<p><b>Unit 7 - Geometry</b></p>
<p><b>9.C.2.</b> Formulate logical arguments about geometric figures and patterns and communicate reasoning.</p>	<p>Unit 7 –  Lesson 1 – <i>Geometric Concepts</i> pp. 126-127  Lesson 2 – <i>Lines</i> pp. 128-129  Lesson 3 – <i>Measuring and Classifying Angles</i> pp. 130-131  Lesson 4 – <i>Classifying Triangles</i> pp. 132-133  Lesson 5 – <i>Translations</i> pp. 134-135  Lesson 6 – <i>Reflections and Rotations</i> pp. 136-137  Lesson 7 – <i>Classifying Quadrilaterals</i> pp. 138-139  Lesson 8 – <i>Solid Figures</i> pp. 140-141</p>

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<b>STATE GOAL 10. Data Analysis and Probability: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.</b>	
<b>10.A.</b> Organize, describe and make predictions from existing data.	<b>Unit 8 – Probability and Data Analysis</b>
<b>10.A.2a.</b> Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graphs.	Unit 8 – Lesson 3 – <i>Probability Experiments</i> pp. 148-149 Lesson 4 – <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5 – <i>The Mean</i> pp. 152-153 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
<b>10.A.2b.</b> Using a data set, determine mean, median, mode and range, with and without the use of technology.	Unit 8 – Lesson 4 – <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5 – <i>The Mean</i> pp. 152-153 Lesson 6 – <i>Bar Graphs</i> pp. 154-155
<b>10.A.2c.</b> Make predictions and decisions based on data and communicate their reasoning.	Unit 8 – Lesson 1 – <i>Possible Outcomes</i> pp. 144-145 Lesson 2 – <i>Evaluating Probability</i> pp. 146-147 Lesson 3 – <i>Probability Experiments</i> pp. 148-149
<b>10.B.</b> Formulate questions, design data collection methods, gather and analyze data and communicate findings.	<b>Unit 8 – Probability and Data Analysis</b>
<b>10.B.2a.</b> Formulate questions of interest and select methods to systematically collect data.	Unit 8 – Lesson 4 – <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5 – <i>The Mean</i> pp. 152-153 Lesson 6 – <i>Bar Graphs</i> pp. 154-155
<b>10.B.2b.</b> Collect, organize and display data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and-leaf graphs.	Unit 8 – Lesson 3 – <i>Probability Experiments</i> pp. 148-149 Lesson 4 – <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5 – <i>The Mean</i> pp. 152-153 Lesson 6 – <i>Bar Graphs</i> pp. 154-155 Lesson 7 – <i>Line Graphs</i> pp. 156-157

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	Lesson 8 – <i>Circle Graphs</i> pp. 158-159
<b>10.B.2c.</b> Analyze the data using mean, median, mode and range, as appropriate, with or without the use of technology.	Unit 8 – Lesson 4 – <i>Mode, Median, and Range</i> pp. 150-151 Lesson 5 – <i>The Mean</i> pp. 152-153 Lesson 6 – <i>Bar Graphs</i> pp. 154-155
<b>10.B.2d.</b> Interpret results or make relevant decisions based on the data gathered.	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
<b>10.C.</b> Determine, describe and apply the probabilities of events.	<b>Unit 8 – Probability and Data Analysis</b>
<b>10.C.2a.</b> Calculate the probability of a simple event.	Unit 8 – Lesson 2 – <i>Evaluating Probability</i> pp. 146-147 Lesson 3 – <i>Probability Experiments</i> pp. 148-149
<b>10.C.2b.</b> Compare the likelihood of events in terms of certain, more likely, less likely or impossible.	Unit 8 – Lesson 1 – <i>Possible Outcomes</i> pp. 144-145 Lesson 2 – <i>Evaluating Probability</i> pp. 146-147 Lesson 3 – <i>Probability Experiments</i> pp. 148-149
<b>10.C.2c.</b> Determine the probability of an event involving “and”, “or” or “not”.	Unit 8 – Lesson 2 – <i>Evaluating Probability</i> pp. 146-147 Lesson 3 – <i>Probability Experiments</i> pp. 148-149