Northpoint Horizons

Math Elevations™ (Comprehensive Intervention System)
Correlated to
Pennsylvania State Academic Standards

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

Grade 3 **State Academic Standards**	***Math Elevations* Level C** **Teacher's Guide Examples/Lessons**
2.1 Numbers, Number Systems and Number Relationships	
A. Count using whole numbers (to 10,000) and by 2's, 3's, 5's, 10's, 25's and 100's.	Unit 3 – Lesson 2: *Multiplication Facts of 2, 5, and 10* pp. 56–57
B. Use whole numbers and fractions to represent quantities.	Unit 1 – Lesson 1: *Four-Digit Numbers* pp. 18–19 Lesson 2: *Comparing and Ordering Numbers* pp. 20–21 Lesson 3: *Rounding* pp. 22–23 Lesson 4: *Odd and Even Numbers* pp. 24–25 Lesson 5*: Fractions as Part of a Whole* pp. 26–27 Lesson 6: *Fractions as Part of a Set* pp. 28–29
C. Represent equivalent forms of the same number through the use of concrete objects, drawings, word names and symbols.	Unit 1 – Lesson 7: *Comparing Fractions* pp. 30–31
D. Use drawings, diagrams or models to show the concept of fraction as part of a whole.	Unit 1 – Lesson 5*: Fractions as Part of a Whole* pp. 26–27
E. Count, compare and make change using a collection of coins and one-dollar bills.	Unit 4 – Lesson 3: *Dollars, Dimes, and Pennies* pp. 76–77 Lesson 4: *Nickels and Quarters* pp. 78–79 Lesson 5: *Bills and Coins* pp. 80–81 Lesson 6: *Making Change* pp. 82–83 Lesson 7: *Addition and Subtraction of Money* pp. 84–85
F. Apply number patterns (even and odd) and compare values of numbers on the hundred board.	Unit 1 – Lesson 4: *Odd and Even Numbers* pp.24–25
G. Use concrete objects to count, order and group.	Unit 1 – Lesson 2: *Comparing and Ordering Numbers* pp. 20–21
H. Demonstrate an understanding of one-to-one correspondence.	Unit 1 –

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	Lesson 1: *Four-Digit Numbers* pp. 18–19 Lesson 8: *Reading and Writing Numbers Through 999,999* pp. 32–33
I. Apply place-value concepts and numeration to counting, ordering and grouping.	Unit 1 – Lesson 1: *Four-Digit Numbers* pp. 18–19 Lesson 8: *Reading and Writing Numbers Through 999,999* pp. 32–33
J. Estimate, approximate, round or use exact numbers as appropriate.	Unit 1 – Lesson 1: *Four-Digit Numbers* pp. 18–19 Lesson 2: *Comparing and Ordering Numbers* pp. 20–21 Lesson 3: *Rounding* pp. 22–23
K. Describe the inverse relationship between addition and subtraction.	Unit 2 – Lesson 1: *Addition and Subtraction Families* pp. 36–37
L. Demonstrate knowledge of basic facts in four basic operations.	Unit 2 – Lesson 1: *Addition and Subtraction Families* pp. 36–37 Unit 3 – Lesson 1: *Meaning of Multiplication* pp. 54–55 Lesson 2: *Multiplication Facts of 2, 5, and 10* pp. 56–57 Lesson 3: *Multiplication Facts of 3 and 6* pp. 58–59 Lesson 4: *Multiplication Facts of 4 and 8* pp. 60–61 Lesson 5: *Multiplication Facts of 7 and 9* pp. 62–63 Lesson 6: *Division as Equal Grouping and Sharing Equally* pp. 64–65 Lesson 7: *Dividing Using Inverse Operations* pp. 66–67
2.2 Computation and Estimation	
A. Apply addition and subtraction in everyday situations using concrete objects.	Unit 2 – Lesson 8: *Addition and Subtraction Word Problems* pp. 50–51
B. Solve single- and double-digit addition and subtraction problems with regrouping in vertical form.	Unit 2 – Lesson 2: *Adding Two-Digit Numbers* pp. 38–39 Lesson 4: *Adding Three- and Four-Digit Numbers* pp. 42–43 Lesson 5: *Regrouping Two-Digit Numbers for Subtraction* pp. 44–45 Lesson 6: *Subtraction of Three- and Four-Digit Numbers* pp. 46–47 Lesson 7: *Subtraction with Zeros* pp. 48–49
C. Demonstrate the concept of multiplication as repeated addition and	Unit 3 –

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arrays.	Lesson 1: *Meaning of Multiplication* pp. 54–55
D. Demonstrate the concept of division as repeated subtraction and as sharing.	Unit 3 – Lesson 6: *Division as Equal Grouping and Sharing Equally* pp. 64–65 Lesson 7: *Dividing Using Inverse Operations* pp. 66–67
E. Use estimation skills to arrive at conclusions.	Unit 1 – Lesson 3: *Rounding* pp. 22–23 Unit 2 – Lesson 3: *Using Estimation in Addition* pp. 40–41
F. Determine the reasonableness of calculated answers.	Unit 1 – Lesson 3: *Rounding* pp.22–23 Unit 2 – Lesson 3: *Using Estimation in Addition* pp. 40–41
G. Explain addition and subtraction algorithms with regrouping.	Unit 2 – Lesson 1: *Addition and Subtraction Families* pp. 36–37 Unit 3 – Lesson 1: *Meaning of Multiplication* pp. 54–55 Lesson 7: *Dividing Using Inverse Operations* pp. 66–67
2.3 Measurement and Estimation	
A. Compare measurable characteristics of different objects on the same dimensions (e.g., time, temperature, area, length, weight, capacity, perimeter).	Unit 6 – Lesson 8: *Volume* pp. 122–123 Unit 7 – Lesson 1: *Time* pp. 126–127 Lesson 2: *Length (Customary Units)* pp. 128–129 Lesson 3: *Length (Metric)* pp. 130–131 Lesson 4: *Perimeter* pp. 132–133 Lesson 5: *Area* pp. 134–135 Lesson 6: *Weight* pp. 136–137 Lesson 7: *Capacity* pp. 138–139 Lesson 8: *Appropriate Units* pp. 140–141
B. Determine the measurement of objects with non-standard and standard units (e.g., US customary and metric).	Unit 6 – Lesson 8: *Volume* pp. 122–123 Unit 7 – Lesson 1: *Time* pp. 126–127 Lesson 2: *Length (Customary Units)* pp. 128–129

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	Lesson 3: *Length (Metric)* pp. 130–131 Lesson 4: *Perimeter* pp. 132–133 Lesson 5: *Area* pp. 134–135 Lesson 6: *Weight* pp. 136–137 Lesson 7: *Capacity* pp. 138–139 Lesson 8: *Appropriate Units* pp. 140–141
C. Determine and compare elapsed times.	Unit 7 – Lesson 1: *Time* pp. 126–127
D. Tell time (analog and digital) to the minute.	Unit 7 – Lesson 1: *Time* pp. 126–127
E. Determine the appropriate unit of measure.	Unit 7 – Lesson 8: *Appropriate Units* pp. 140–141
F. Use concrete objects to determine area and perimeter.	Unit 7 – Lesson 4: *Perimeter* pp. 132–133 Lesson 5: *Area* pp. 134–135
H. Demonstrate that a single object has different attributes that can be measured in different ways (e.g., length, mass, weight, time, area, temperature, capacity, perimeter).	Unit 6 – Lesson 8: *Volume* pp. 122–123 Unit 7 – Lesson 1: *Time* pp. 126–127 Lesson 2: *Length (Customary Units)* pp. 128–129 Lesson 3: *Length (Metric)* pp. 130–131 Lesson 4: *Perimeter* pp. 132–133 Lesson 5: *Area* pp. 134–135 Lesson 6: *Weight* pp. 136–137 Lesson 7: *Capacity* pp. 138–139 Lesson 8: *Appropriate Units* pp. 140–141
2.4 Mathematical Reasoning and Connections	
A. Make, check and verify predictions about the quantity, size and shape of objects and groups of objects.	Unit 6 – Lesson 3: *Plane Figures* pp. 112–113 Lesson 4: *Congruent Figures* pp. 114–115 Lesson 5: *Lines of Symmetry* pp. 116–117 Lesson 6: *Solid Figures* pp. 118–119 Lesson 7: *Solid Figures and Their Nets* pp. 120–121
B. Use measurements in everyday situations (e.g., determine the geography of the school building).	Unit 7 – Lesson 1: *Time* pp. 126–127

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2.5 Mathematical Problem Solving and Communication	
A. Use appropriate problem-solving strategies (e.g., guess and check, working backwards).	Unit 5 – Lesson 7: *Pattern Puzzles* pp. 102–103
B. Determine when sufficient information is present to solve a problem and explain how to solve a problem.	Unit 5 – Lesson 8: *Word Problem Patterns* pp. 104–105
C. Select and use an appropriate method, materials and strategy to solve problems, including mental mathematics, paper and pencil and concrete objects.	Unit 8 – Lesson 1: *Tally Charts* pp. 144–145
2.6 Statistics and Data Analysis	
A. Gather, organize and display data using pictures, tallies, charts, bar graphs and pictographs.	Unit 8 – Lesson 2: *Reading Charts and Tables* pp. 146–147 Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Simple Bar Graphs* pp. 150–151 Lesson 5: *Bar Graphs with a Scale* pp. 152–153
B. Formulate and answer questions based on data shown on graphs.	Unit 8 – Lesson 2: *Reading Charts and Tables* pp. 146–147 Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Simple Bar Graphs* pp. 150–151 Lesson 5: *Bar Graphs with a Scale* pp. 152–153
C. Predict the likely number of times a condition will occur based on analyzed data.	Unit 8 – Lesson 6: *Likelihood* pp. 154–155 Lesson 7: *Probabilit*y pp. 156–157 Lesson 8: *Fair and Unfair Games* pp. 158–159
D. Form and justify an opinion on whether a given statement is reasonable based on a comparison to data.	Unit 8 – Lesson 6: *Likelihood* pp. 154–155 Lesson 7: *Probabilit*y pp. 156–157 Lesson 8: *Fair and Unfair Games* pp. 158–159
2.7 Probability and Predictions	
A. Predict and measure the likelihood of events and recognize that the results of an experiment may not match predicted outcomes.	Unit 8 – Lesson 6: *Likelihood* pp. 154–155 Lesson 7: *Probabilit*y pp. 156– 157 Lesson 8: *Fair and Unfair Games* pp. 158–159
B. Design a fair and an unfair spinner.	Unit 8 – Lesson 8: *Fair and Unfair Games* pp. 158–159

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C. List or graph the possible results of an experiment.	Unit 8 – Lesson 6: *Likelihood* pp. 154–155 Lesson 7: *Probabilit*y pp. 156– 157 Lesson 8: *Fair and Unfair Games* pp. 158–159
D. Analyze data using the concepts of largest, smallest, most often, least often and middle.	Unit 8 – Lesson 6: *Likelihood* pp. 154–155 Lesson 7: *Probabilit*y pp. 156–157 Lesson 8: *Fair and Unfair Games* pp. 158–159
2.8 Algebra and Functions	
A. Recognize, describe, extend, create and replicate a variety of patterns including attribute, activity, number and geometric patterns.	Unit 5 – Lesson 3: *Skip Counting* pp. 94–95 Lesson 4: *Number Patterns* pp. 96–97 Lesson 5: *Number Machines* pp. 98–99
B. Use concrete objects and trial and error to solve number sentences and check if solutions are sensible and accurate.	Unit 5 – Lesson 1: *Missing Addends and Subtrahends* pp. 90–91
C. Substitute a missing addend in a number sentence.	Unit 5 – Lesson 1: *Missing Addends and Subtrahends* pp. 90–91
D. Create a story to match a given combination of symbols and numbers.	
E. Use concrete objects and symbols to model the concepts of variables, expressions, equations and inequalities.	Unit 5 – Lesson 1: *Missing Addends and Subtrahends* pp. 90–91
F. Explain the meaning of solutions and symbols.	Unit 5 – Lesson 1: *Missing Addends and Subtrahends* pp. 90–91
G. Use a table or a chart to display information.	Unit 8 – Lesson 2: *Reading Charts and Tables* pp. 146–147 Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Simple Bar Graphs* pp. 150–151 Lesson 5: *Bar Graphs with a Scale* pp. 152–153
H. Describe and interpret the data shown in tables and charts.	Unit 8 – Lesson 2: *Reading Charts and Tables* pp. 146–147 Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Simple Bar Graphs* pp. 150–151 Lesson 5: *Bar Graphs with a Scale* pp. 152–153
I. Demonstrate simple function rules.	Unit 5 – Lesson 5: *Number Machines* pp. 98–99

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J. Analyze simple functions and relationships and locate points on a simple grid.	Unit 5 – Lesson 5: *Number Machines* pp. 98–99
2.9 Geometry	
A. Name and label geometric shapes in two and three dimensions (e.g., circle/sphere, square/cube, triangle/pyramid, rectangle/prism).	Unit 6 – Lesson 3: *Plane Figures* pp. 112–113 Lesson 6: *Solid Figures* pp. 118–119 Lesson 7: *Solid Figures and Their Nets* pp. 120–121
B. Build geometric shapes using concrete objects (e.g., manipulatives).	Unit 6 – Lesson 7: *Solid Figures and Their Nets* pp. 120–121
C, Draw two- and three-dimensional geometric shapes and construct rectangles, squares and triangles on the geoboard and on graph paper satisfying specific criteria.	Unit 6 – Lesson 7: *Solid Figures and Their Nets* pp. 120–121
D. Find and describe geometric figures in real life.	Unit 6 – Lesson 7: *Solid Figures and Their Nets* pp. 120–121
E, Identify and draw lines of symmetry in geometric figures.	Unit 6 – Lesson 5: *Lines of Symmetry* pp. 116–117
F. Identify symmetry in nature.	Unit 6 – Lesson 5: *Lines of Symmetry* pp. 116–117
G. Fold paper to demonstrate the reflections about a line.	Unit 6 – Lesson 5: *Lines of Symmetry* pp. 116–117
H. Show relationships between and among figures using reflections.	
I. Predict how shapes can be changed by combining or dividing them.	
2.10 Trigonometry	
A. Identify right angles in the environment.	Unit 6 – Lesson 1: *Lines and Angles* pp. 108–109
B. Model right angles and right triangles using concrete objects.	Unit 6 – Lesson 1: *Lines and Angles* pp. 108–109
2.11 Concepts of Calculus	
A. Identify whole number quantities and measurements from least to most and greatest value.	Unit 1 – Lesson 1: *Four-Digit Numbers* pp. 18–19 Lesson 2: *Comparing and Ordering Numbers* pp. 20–21 Lesson 3: *Rounding* pp. 22–23 Lesson 8: *Reading and Writing Numbers Through 999,999* pp. 32–33

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B. Identify least and greatest values represented in bar graphs and pictographs.	Unit 8 – Lesson 2: *Reading Charts and Tables* pp. 146–147 Lesson 3: *Pictographs* pp. 148–149 Lesson 4: *Simple Bar Graphs* pp. 150–151 Lesson 5: *Bar Graphs with a Scale* pp. 152–153
C. Categorize rates of change as faster and slower.	
D. Continue a pattern of numbers or objects that could be extended infinitely.	Unit 5 – Lesson 5: *Number Machines* pp. 98–99 Lesson 6: *Picture Patterns* pp. 100–101