

Northpoint Horizons
Math Elevations™ (Comprehensive Intervention System)
Correlated to the Grade 6
New Jersey Core Curriculum Content Standards

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet the New Jersey Core Curriculum Content Standards.

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
STANDARD 4.1 (NUMBER AND NUMERICAL OPERATIONS)	
4.1.6 A. Number Sense	
1. Use real-life experiences, physical materials, and technology to construct meanings for numbers (unless otherwise noted, all indicators for grade 6 pertain to these sets of numbers as well).	
<ul style="list-style-type: none"> • All integers 	Unit 1 – Lesson 4: <i>Introduction to Integers</i> pp. 24-25 Unit 2 – Lesson 1: <i>Adding Integers</i> pp. 36-37
<ul style="list-style-type: none"> • All fractions as part of a whole, as subset of a set, as a location on a number line, and as divisions of whole numbers 	Unit 3 – Lesson 1: <i>Simplest Form</i> pp. 54-55 Lesson 2: <i>Comparing and Ordering Fractions</i> pp. 56-57
<ul style="list-style-type: none"> • All decimals 	Unit 2 – Lesson 3: <i>Addition and Subtraction</i> pp. 40-41 Lesson 6: <i>Multiplying by Decimals</i> pp. 46-47 Lesson 7: <i>Division</i> pp. 48-49
3. Demonstrate a sense of the relative magnitudes of numbers.	Unit 1 – Lesson 2: <i>Understanding Exponents</i> pp. 20-21 Lesson 3: <i>Powers of 10</i> pp. 22-23
4. Explore the use of ratios and proportions in a variety of situations.	Unit 3 – Lesson 7: <i>Ratios and Proportions</i> pp. 66-67 Lesson 8: <i>Solving Proportions</i> pp. 68-69
5. Understand and use whole-number percents between 1 and 100 in a variety of situations.	Unit 3 – Lesson 4: <i>Understanding Percents</i> pp. 60-61

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
6. Use whole numbers, fractions, and decimals to represent equivalent forms of the same number.	Unit 3 – Lesson 5: <i>Converting Between Percents, Fractions, and Decimals</i> pp. 62-63
7. Develop and apply number theory concepts in problem solving situations.	
<ul style="list-style-type: none"> • Primes, factors, multiples 	Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26-27 Lesson 7: <i>Greatest Common Factor (GCF)</i> pp. 30-31 Lesson 8: <i>Least Common Multiple (LCM)</i> pp. 32-33
<ul style="list-style-type: none"> • Common multiples, common factors 	Unit 1 – Lesson 7: <i>Greatest Common Factor (GCF)</i> pp. 30-31 Lesson 8: <i>Least Common Multiple (LCM)</i> pp. 32-33
<ul style="list-style-type: none"> • Least common multiple, greatest common factor 	Unit 1 – Lesson 7: <i>Greatest Common Factor (GCF)</i> pp. 30-31 Lesson 8: <i>Least Common Multiple (LCM)</i> pp. 32-33
8. Compare and order numbers.	Unit 1 – Lesson 1: <i>Decimals</i> pp. 18-19 Lesson 4: <i>Introduction to Integers</i> pp. 24-25
4.1.6 B. Numerical Operations	
1. Recognize the appropriate use of each arithmetic operation in problem situations.	Unit 2 – Lesson 1: <i>Adding Integers</i> pp. 36-37 Lesson 3: <i>Addition and Subtraction</i> pp. 40-41 Lesson 4: <i>Multiplying and Dividing by Powers of 10</i> pp. 42-43 Lesson 5: <i>Multiplication of Whole Numbers</i> pp. 44-45 Lesson 6: <i>Multiplying by Decimals</i> pp. 46-47 Lesson 7: <i>Division</i> pp. 48-49 Lesson 8: <i>Word Problems</i> pp. 50-51 Unit 3 – Lesson 1: <i>Simplest Form</i> pp. 54-55 Unit 4 – Lesson 1: <i>Addition and Subtraction of Fractions</i> pp. 72-73 Lesson 2: <i>Adding Mixed Numbers</i> pp. 74-75 Lesson 3: <i>Subtracting Mixed Numbers</i> pp. 76-77 Lesson 4: <i>Multiplying Fractions</i> pp. 78-79

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
	Lesson 5: <i>Multiplying Mixed Numbers</i> pp. 80-81 Lesson 6: <i>Dividing Fractions by Whole Numbers</i> pp. 82-83 Lesson 7: <i>Dividing Fractions by Fractions</i> pp. 84-85 Lesson 8: <i>Dividing Mixed Numbers</i> pp. 86-87
2. Construct, use, and explain procedures for performing calculations with fractions and decimals with:	
• Pencil-and-paper	Unit 2 – Lesson 3: <i>Addition and Subtraction</i> pp. 40-41 Lesson 5: <i>Multiplication of Whole Numbers</i> pp. 44-45 Lesson 6: <i>Multiplying by Decimals</i> pp. 46-47 Lesson 7: <i>Division</i> pp. 48-49
• Mental math	Unit 3 – Lesson 8: <i>Solving Proportions</i> pp. 68-69
• Calculator	Unit 1 – Lesson 2: <i>Understanding Exponents</i> pp. 20-21 Lesson 7: <i>Greatest Common Factor (GCF)</i> pp. 30-31
3. Use an efficient and accurate pencil-and-paper procedure for division of a 3-digit number by a 2-digit number.	Unit 1 – Lesson 6: <i>Divisibility</i> pp. 28-29
6. Check the reasonableness of results of computations.	Unit 3 – Lesson 8: <i>Solving Proportions</i> pp. 68-69
7. Understand and use the various relationships among operations and properties of operations.	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95
8. Understand and apply the standard algebraic order of operations for the four basic operations, including appropriate use of parentheses.	Unit 5 – Lesson 1: <i>Order of Operations</i> pp. 90-91
4.1.6 C. Estimation	
1. Use a variety of strategies for estimating both quantities and the results of computations.	Unit 2 – Lesson 2: <i>Rounding Numbers</i> pp. 38-39
2. Recognize when an estimate is appropriate, and understand the usefulness of an estimate as distinct from an exact answer.	Unit 2 – Lesson 2: <i>Rounding Numbers</i> pp. 38-39
3. Determine the reasonableness of an answer by estimating the result of operations.	Unit 2 – Lesson 2: <i>Rounding Numbers</i> pp. 38-39
4. Determine whether a given estimate is an overestimate or an underestimate.	Unit 2 – Lesson 2: <i>Rounding Numbers</i> pp. 38-39

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
STANDARD 4.2 (GEOMETRY AND MEASUREMENT)	
4.2.6 A. Geometric Properties	
1. Understand and apply concepts involving lines and angles.	
<ul style="list-style-type: none"> • Properties of parallel, perpendicular, and intersecting lines 	Unit 6 – Lesson 1: <i>Properties of Polygons</i> pp. 108-109
<ul style="list-style-type: none"> • Sum of the measures of the interior angles of a triangle is 180° 	Unit 7 – Lesson 4: <i>Angles in a Triangle</i> pp. 132-133
2. Identify, describe, compare, and classify polygons and circles.	
<ul style="list-style-type: none"> • Triangles by angles and sides 	Unit 7 – Lesson 1: <i>Triangles</i> pp. 126-127
<ul style="list-style-type: none"> • Quadrilaterals, including squares, rectangles, parallelograms, trapezoids, rhombi 	Unit 6 – Lesson 2: <i>Classifying Quadrilaterals</i> pp. 110-111
<ul style="list-style-type: none"> • Polygons by number of sides. 	Unit 6 – Lesson 1: <i>Properties of Polygons</i> pp. 108-109
<ul style="list-style-type: none"> • Equilateral, equiangular, regular 	Unit 7 – Lesson 1: <i>Triangles</i> pp. 126-127
<ul style="list-style-type: none"> • All points equidistant from a given point form a circle 	Unit 6 – Lesson 4: <i>Circles</i> pp. 114-115
4. Understand and apply the concepts of congruence and symmetry (line and rotational).	
5. Compare properties of cylinders, prisms, cones, pyramids, and spheres.	
6. Identify, describe, and draw the faces or shadows (projections) of three-dimensional geometric objects from different perspectives.	Unit 6 – Lesson 3: <i>Solid Figures</i> pp. 112-113
7. Identify a three-dimensional shape with given projections (top, front and side views).	Unit 6 – Lesson 3: <i>Solid Figures</i> pp. 112-113
8. Identify a three-dimensional shape with a given net (i.e., a flat pattern that folds into a 3D shape).	Unit 6 – Lesson 3: <i>Solid Figures</i> pp. 112-113
4.2.6 B. Transforming Shapes	
1. Use a translation, a reflection, or a rotation to map one figure onto another congruent figure.	
	Unit 6 – Lesson 6: <i>Translation</i> pp. 118-119 Lesson 7: <i>Reflection</i> pp. 120-121 Lesson 8: <i>Rotation</i> pp. 122-123
2. Recognize, identify, and describe geometric relationships and properties as they exist	

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
in nature, art, and other real-world settings.	Lesson 6: <i>Translation</i> pp. 118-119 Lesson 7: <i>Reflection</i> pp. 120-121 Lesson 8: <i>Rotation</i> pp. 122-123
4.2.6 C. Coordinate Geometry	
1. Create geometric shapes with specified properties in the first quadrant on a coordinate grid.	Unit 6 – Lesson 5: <i>The Coordinate Plane</i> pp. 116-117
4.2.6 D. Units of Measurement	
1. Select and use appropriate units to measure angles, area, surface area, and volume.	Unit 7 – Lesson 2: <i>Perimeter</i> pp. 128-129 Lesson 3: <i>Angles</i> pp. 130-131 Lesson 4: <i>Angles in a Triangle</i> pp. 132-133 Lesson 5: <i>Areas of Rectangles and Parallelograms</i> pp. 134-135 Lesson 6: <i>Area of Triangles</i> pp. 136-137 Lesson 7: <i>Area of Irregular Figures</i> pp. 138-139 Lesson 8: <i>Volume</i> pp. 140-141
4. Know approximate equivalents between the standard and metric systems (e.g., one kilometer is approximately 6/10 of a mile).	Unit 8 – Lesson 3: <i>Scales and Bar Graphs</i> pp. 148-149
5. Use measurements and estimates to describe and compare phenomena.	Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155
4.2.6 E. Measuring Geometric Objects	
1. Use a protractor to measure angles.	Unit 7 – Lesson 3: <i>Angles</i> pp. 130-131
2. Develop and apply strategies and formulas for finding perimeter and area. • Triangle, square, rectangle, parallelogram, and trapezoid	Unit 7 – Lesson 2: <i>Perimeter</i> pp. 128-129
• Circumference and area of a circle	Unit 6 – Lesson 4: <i>Circles</i> pp. 114-115
3. Develop and apply strategies and formulas for finding the surface area and volume of rectangular prisms and cylinders.	Unit 7 – Lesson 8: <i>Volume</i> pp. 140-141
STANDARD 4.3 (PATTERNS AND ALGEBRA)	
4.3.6 A. Patterns	
1. Recognize, describe, extend, and create patterns involving whole numbers and	

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
rational numbers.	
<ul style="list-style-type: none"> • Descriptions using tables, verbal rules, simple equations, and graphs 	Unit 5 – Lesson 2: <i>Patterns</i> pp. 92-93
4.3.6 B. Functions and Relationships	
1. Describe the general behavior of functions given by formulas or verbal rules (e.g., graph to determine whether increasing or decreasing, linear or not).	Unit 5 – Lesson 7: <i>Graphing Algebraic Equations</i> pp. 102-103
4.3.6 C. Modeling	
1. Use patterns, relations, and linear functions to model situations.	
<ul style="list-style-type: none"> • Using variables to represent unknown quantities 	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Lesson 5: <i>Solving Equations</i> pp. 98-99
<ul style="list-style-type: none"> • Using concrete materials, tables, graphs, verbal rules, algebraic expressions/equations/inequalities 	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Lesson 5: <i>Solving Equations</i> pp. 98-99 Lesson 7: <i>Graphing Algebraic Equations</i> pp. 102-103 Lesson 8: <i>Inequalities</i> pp. 104-105
2. Draw freehand sketches of graphs that model real phenomena and use such graphs to predict and interpret events.	
<ul style="list-style-type: none"> • Relations between quantities 	Unit 5 – Lesson 7: <i>Graphing Algebraic Equations</i> pp. 102-103
4.3.6 D. Procedures	
1. Solve simple linear equations with manipulatives and informally.	
<ul style="list-style-type: none"> • Whole-number coefficients only, answers also whole numbers 	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Lesson 5: <i>Solving Equations</i> pp. 98-99
<ul style="list-style-type: none"> • Variables on one or both sides of equation 	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Lesson 5: <i>Solving Equations</i> pp. 98-99
3. Evaluate numerical expressions.	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
4. Extend understanding and use of inequality.	Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Unit 5 – Lesson 8: <i>Inequalities</i> pp. 104-105
STANDARD 4.4 (DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS)	
4.4.6 A. Data Analysis	
1. Collect, generate, organize, and display data.	
• Data generated from surveys	Unit 8 – Lesson 4: <i>Conducting Surveys</i> pp. 150-151
2. Read, interpret, select, construct, analyze, generate questions about, and draw inferences from displays of data.	
• Bar graph, line graph, circle graph, table, histogram	Unit 8 – Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147
• Range, median, and mean	Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145
• Calculators and computers used to record and process information	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
3. Respond to questions about data, generate their own questions and hypotheses, and formulate strategies for answering their questions and testing their hypotheses.	
Unit 8 – Lesson 4: <i>Conducting Surveys</i> pp. 150-151	
4.4.6 B. Probability	
1. Determine probabilities of events.	
• Event, complementary event, probability of an event	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
• Probability of certain event is 1 and of impossible event is 0	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
• Probabilities of event and complementary event add up to 1	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
2. Determine probability using intuitive, experimental, and theoretical methods (e.g., using model of picking items of different colors from a bag).	
• Given numbers of various types of items in a bag, what is the probability that an item of one type will be picked	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Lesson 8: <i>Probability Experiments</i> pp. 158-159
• Given data obtained experimentally, what is the likely distribution of items in the bag	Unit 8 –

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
	Lesson 7: <i>Probability</i> pp. 156-157 Lesson 8: <i>Probability Experiments</i> pp. 158-159
3. Explore compound events.	Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159
4. Model situations involving probability using simulations (with spinners, dice) and theoretical models.	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Lesson 8: <i>Probability Experiments</i> pp. 158-159
5. Recognize and understand the connections among the concepts of independent outcomes, picking at random, and fairness.	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Lesson 8: <i>Probability Experiments</i> pp. 158-159
4.4.6 C. Discrete Mathematics—Systematic Listing and Counting	
1. Solve counting problems and justify that all possibilities have been enumerated without duplication.	
• Organized lists, charts, tree diagrams, tables	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
2. Apply the multiplication principle of counting.	
• Simple situations e.g., you can make $3 \times 4 = 12$ outfits using 3 shirts and 4 skirts).	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157
4.4.6 D. Discrete Mathematics—Vertex-Edge Graphs and Algorithms	
1. Devise strategies for winning simple games (e.g., start with two piles of objects, each of two players in turn removes any number of objects from a single pile, and the person to take the last group of objects wins) and express those strategies as sets of directions.	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Lesson 8: <i>Probability Experiments</i> pp. 158-159
STANDARD 4.5 (MATHEMATICAL PROCESSES)	
4.5 A. Problem Solving	
1. Learn mathematics through problem solving, inquiry, and discovery.	Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159
2. Solve problems that arise in mathematics and in other contexts.	Unit 6 – Lesson 4: <i>Circles</i> pp. 114-115
4.5 B. Communication	
1. Use communication to organize and clarify their mathematical thinking.	
• Reading and writing	Unit 7 – Lesson 3: <i>Angles</i> pp. 130-131
• Discussion, listening, and questioning	Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
2. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.	Unit 7 – Lesson 8: <i>Volume</i> pp. 140-141
3. Analyze and evaluate the mathematical thinking and strategies of others.	Unit 6 – Lesson 5: <i>The Coordinate Plane</i> pp. 116-117
4. Use the language of mathematics to express mathematical ideas precisely.	Unit 7 – Lesson 1: <i>Triangles</i> pp. 126-127
4.5 C. Connections	
1. Recognize recurring themes across mathematical domains (e.g., patterns in number, algebra, and geometry).	Unit 5 – Lesson 2: <i>Patterns</i> pp. 92-93
2. Use connections among mathematical ideas to explain concepts (e.g., two linear equations have a unique solution because the lines they represent intersect at a single point).	Unit 3 – Lesson 7: <i>Ratios and Proportions</i> pp. 66-67
3. Recognize that mathematics is used in a variety of contexts outside of mathematics.	Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145 Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147
4. Apply mathematics in practical situations and in other disciplines.	Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159
6. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97
4.5 D. Reasoning	
1. Recognize that mathematical facts, procedures, and claims must be justified.	Unit 5 – Lesson 5: <i>Solving Equations</i> pp. 98-99
2. Use reasoning to support their mathematical conclusions and problem solutions.	Unit 5 – Lesson 6: <i>Word Problems</i> pp. 100-101
4.5 E. Representations	
1. Create and use representations to organize, record, and communicate mathematical ideas.	
• Concrete representations (e.g., base-ten blocks or algebra tiles)	Unit 1 – Lesson 1: <i>Decimals</i> pp. 18-19
• Symbolic representations (e.g., a formula)	Unit 7 – Lesson 8: <i>Volume</i> pp. 140-141
• Graphical representations (e.g., a line graph)	Unit 8 –

Math Content Standard	Math Elevations Level F (Grade 6) Teacher's Guide Examples/Lessons
	Lesson 6: <i>Line Graphs</i> pp. 154-155
2. Select, apply, and translate among mathematical representations to solve problems.	Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159
3. Use representations to model and interpret physical, social, and mathematical phenomena.	Unit 3 – Lesson 5: <i>Converting Between Percents, Fractions, and Decimals</i> pp. 62-63
4.5 F. Technology	
1. Use technology to gather, analyze, and communicate mathematical information.	Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145
4. Use calculators as problem-solving tools (e.g., to explore patterns, to validate solutions).	Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145

