

Northpoint Horizons

Math Elevations[™]

Correlated to the

Florida Sunshine State 1996 Mathematics Content Standards

Grade 6

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

Math Content Standard	<i>Math Elevations</i> Level H Teacher's Guide Examples/Lessons
Number Sense, Concepts, and Operations	
Standard 1:	
The student understands the different ways numbers are represented and used in the real world. (MA.A.1.3)	
1. associates verbal names, written word names, and standard numerals with integers, fractions, decimals; numbers expressed as percents; numbers with exponents; numbers in scientific notation; radicals; absolute value; and ratios.	Unit 1 - Lesson 1: Decimals Lesson 2: Understanding Exponents Lesson 3: Powers of 10 Lesson 4: Introduction to Integers Unit 2 - Lesson 4: Multiplying and Dividing by Powers of 10 Unit 3 - Lesson 1: Simplest Form Lesson 2: Comparing and Ordering Decimals Lesson 3: Converting Fractions to Decimals Lesson 4: Understanding Percents Lesson 5: Converting Between Percents, Fractions, and Decimals Lesson 6: More Converting Fractions
2. understands the relative size of integers, fractions, and decimals; numbers expressed as percents; numbers with exponents; numbers	

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in scientific notation; radicals; absolute value; and ratios.	
3. understands concrete and symbolic representations of rational numbers and irrational numbers in real-world situations.	
4. understands that numbers can be represented in a variety of equivalent forms, including integers, fractions, decimals, percents, scientific notation, exponents, radicals, and absolute value.	
Standard 2:	
The student understands number systems. (MA.A.2.3)	
1. understands and uses exponential and scientific notation.	Lesson 2: Understanding Exponents Lesson 3: Powers of 10
2. understands the structure of number systems other than the decimal number system.	
Standard 3:	
The student understands the effects of operations on numbers and the relationships among these operations, selects appropriate operations, and computes for problem solving. (MA.A.3.3)	
1. understands and explains the effects of addition, subtraction, multiplication, and division on whole numbers, fractions, including mixed numbers, and decimals, including the inverse relationships of positive and negative numbers.	Unit 2 - Lesson 1: Adding Integers Lesson 3: Addition and Subtraction Lesson 5: Multiplication of Whole Numbers

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	Lesson 6: Multiplying by Decimals Lesson 7: Division Lesson 8: Word Problems Unit 3 - Lesson 1: Simplest Form Lesson 4: Understanding Percents Lesson 6: More converting Fractions Lesson 7: Ratios and Proportions Lesson 8: Solving Proportions Unit 4 - Lesson 1: Addition and Subtraction of Fractions Lesson 2: Adding Mixed Numbers Lesson 3: Subtracting Mixed Numbers Lesson 4: Multiplying Fractions Lesson 5: Multiplying Mixed Numbers Lesson 6: Dividing Fractions by Whole Numbers Lesson 7: Dividing Fractions by Fractions Lesson 8: Dividing Mixed Numbers Unit 5 - Lesson 1: Order of Operations
2. selects the appropriate operation to solve problems involving addition, subtraction, multiplication, and division of rational numbers,	

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ratios, proportions, and percents, including the appropriate application of the algebraic order of operations.	
3. adds, subtracts, multiplies, and divides whole numbers, decimals, and fractions, including mixed numbers, to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.	
Standard 4:	
The student uses estimation in problem solving and computation. (MA.A.4.3)	
1. uses estimation strategies to predict results and to check the reasonableness of results.	Unit 2 - Lesson 2: Rounding Numbers
Standard 5:	
The student understands and applies theories related to numbers. (MA.A.5.3)	
1. uses concepts about numbers, including primes, factors, and multiples, to build number sequences.	Unit 1 - Lesson 5: Primes and Composites Lesson 6: Divisibility Lesson 7: Greatest Common Factor Lesson 8: Least Common Multiple Unit 5 -

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	Lesson 2: Patterns
Measurement	
Standard 1:	
The student measures quantities in the real world and uses the measures to solve problems. (MA.B.1.3)	
1. uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids and cylinders.	Unit 7 - Lesson 1: Triangles Lesson 2: Perimeter Lesson 3: Angles Lesson 4: Angles in a Triangle Lesson 5: Areas of Rectangles and Parallelograms Lesson 6: Area of Triangles Lesson 7: Area of Irregular Figures Lesson 8: Volume
2. uses concrete and graphic models to derive formulas for finding rates, distance, time, and angle measures.	
3. understands and describes how the change of a figure in such dimensions as length, width, height, or radius affects its other measurements such as perimeter, area, surface area, and volume.	
4. constructs, interprets, and uses scale drawings such as those based on number lines and maps to solve real-world problems.	

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Standard 2:	
The student compares, contrasts, and converts within systems of measurement (both standard/nonstandard and metric/customary). (MA.B.2.3)	
1. uses direct (measured) and indirect (not measured) measures to compare a given characteristic in either metric or customary units.	Unit 3 - Lesson 8: Solving Proportions
2. solves problems involving units of measure and converts answers to a larger or smaller unit within either the metric or customary system.	
Standard 4:	
The student selects and uses appropriate units and instruments for measurement to achieve the degree of precision and accuracy required in real-world situations. (MA.B.4.3)	
1. selects appropriate units of measurement and determines and applies significant digits in a real-world context. (Significant digits should relate to both instrument precision and to the least precise unit of measurement.)	Unit 7 - Lesson 4: Angles in a Triangle Lesson 8: Volume
2. selects and uses appropriate instruments, technology, and techniques to measure quantities in order to achieve specified degrees of accuracy in a problem situation.	
Geometry and Spatial Sense	

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Standard 1: The student describes, draws, identifies, and analyzes two- and three-dimensional shapes. (MA.C.1.3)	
1. understands the basic properties of, and relationships pertaining to, regular and irregular geometric shapes in two and three dimensions.	Unit 6 - Lesson 1: Properties of Polygons Lesson 2: Classifying Quadrilaterals Lesson 3: Solid Figures Lesson 4: Circles
Standard 2:	
The student visualizes and illustrates ways in which shapes can be combined, subdivided, and changed. (MA.C.2.3)	
1. understands the geometric concepts of symmetry, reflection, congruency, similarity, perpendicularity, parallelism, and transformations, including flips, slides, turns, and enlargements.	Unit 6 - Lesson 5: The Coordinate Plane Lesson 6: Translation Lesson 7: Reflection Lesson 8: Rotation
Standard 3:	
The student uses coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically. (MA.C.3.3)	
1. represents and applies geometric properties and relationships to solve real-world and mathematical problems.	Unit 6 - Lesson 5: The Coordinate Plane

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2. identifies and plots ordered pairs in all four quadrants of a rectangular coordinate system (graph) and applies simple properties of lines.	
Algebraic Thinking	
Standard 1:	
The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions. (MA.D.1.3)	
1. describes a wide variety of patterns, relationships, and functions through models, such as manipulatives, tables, graphs, expressions, equations, and inequalities.	Unit 5 - Lesson 2: Patterns Lesson 7: Graphing Algebraic Expressions Lesson 6: Word Problems
2. creates and interprets tables, graphs, equations, and verbal descriptions to explain cause-and-effect relationships.	
Standard 2:	
The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (MA.D.2.3)	
1. represents and solves real-world problems graphically, with algebraic expressions, equations, and inequalities.	Unit 5 - Lesson 3: One-Step Algebraic Expressions Lesson 4: Two-step Algebraic Expressions Lesson 5: Solving Equations Lesson 6: Word Problems

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	Lesson 7: Graphing Algebraic Equations Lesson 8: Inequalities
2. uses algebraic problem-solving strategies to solve real-world problems involving linear equations and inequalities.	
Data Analysis and Probability	
Standard 1:	
The student understands and uses the tools of data analysis for managing information. (MA.E.1.3)	
1. collects, organizes, and displays data in a variety of forms, including tables, line graphs, charts, bar graphs, to determine how different ways of presenting data can lead to different interpretations.	Unit 8 - Lesson 1: Mean, Mode, and Median Lesson 2: Line Plots and Stem-and-Leaf Plots Lesson 3: Scales and Bar Graphs Lesson 4: Conducting Surveys Lesson 5: Displaying Data Lesson 6: Line Graphs
2. understands and applies the concepts of range and central tendency (mean, median, and mode).	
3. analyzes real-world data by applying appropriate formulas for measures of central tendency and organizing data in a quality display, using appropriate technology, including calculators and computers.	
Standard 2:	

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The student identifies patterns and makes predictions from an orderly display of data using concepts of probability and statistics. (MA.E.2.3)	
1. compares experimental results with mathematical expectations of probabilities.	Unit 8 - Lesson 7: Probability Lesson 8: Probability Experiments
2. determines odds for and odds against a given situation.	
Standard 3:	
The student uses statistical methods to make inferences and valid arguments about real-world situations. (MA.E.3.3)	
1. formulates hypotheses, designs experiments, collects and interprets data, and evaluates hypotheses by making inferences and drawing conclusions based on statistics (range, mean, median, and mode) and tables, graphs, and charts.	Unit 8 - Lesson 1: Mean, Mode, and Median Lesson 2: Line Plots and Stem-and-Leaf Plots Lesson 3: Scales and Bar Graphs Lesson 4: Conducting Surveys Lesson 5: Displaying Data Lesson 6: Line Graphs
2. identifies the common uses and misuses of probability and statistical analysis in the everyday world.	