



9th -12th Grade Core Framework Correlation

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
ALGEBRAIC REASONING: PATTERNS AND FUNCTIONS			
1.1.	Understand and describe patterns and functional relationships.		
1.1.a	Describe relationships and make generalizations about patterns and functions.	MPA-104	Recognizing Patterns
		HA1-447	Identifying Number Patterns
		HA1-448	Finding the <i>n</i> th Term of a Pattern
1.2.	Represent and analyze quantitative relationships in a variety of ways.		
1.2.a	Represent and analyze linear and nonlinear functions and relations symbolically and with tables and graphs.	HA1-104	Translating Word Statements into Equations
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-375	Identifying Solutions of Equations in Two Variables
		HA1-380	Graphing Linear Equations
		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		HA1-395	Drawing a Line Using Slope-Intercept and Determining if Two Lines are Parallel
		HA1-398	Graphing Linear Equations Using Slope and <i>y</i> -Intercept or Slope and a Point
		HA1-401	How Variations of " <i>m</i> " and " <i>b</i> " Affect the Graph of $y = mx + b$
		HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
		HA1-410	Determining an Equation of a Line Given the Coordinates of Two Points
		HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
		HA1-892	Data Analysis Using the Graphing Calculator
		HA1-927	Graphing $f(x) = ax^2$ Using Dilations
		HA1-928	Graphing $f(x) = ax^2$ Using Dilations and Reflections
		HA1-929	Graphing $f(x) = ax^2 + c$ Using Dilations, Reflections, and Vertical Translations
		HA1-935	Analyzing Graphs of Quadratic Functions
		HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
		HA1-950	Graphing Absolute Value Functions
		HA1-955	Analyzing Linear Functions
		HA1-960	Real-World Applications of Linear Functions
		HA1-965	Determining the Best-Fitting Line
1.3.	Use operations, properties and algebraic symbols to determine		

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	equivalence and solve problems.		
1.3.a	Manipulate equations, inequalities and functions to solve problems.	HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-070	Evaluating Formulas for Given Values of the Variables
		HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-104	Translating Word Statements into Equations
		HA1-105	Translating Word Statements into Inequalities
		HA1-115	Using the Addition and Subtraction Properties for Equations
		HA1-120	Using the Multiplication and Division Properties for Equations
		HA1-125	Solving Equations Using More Than One Property
		HA1-135	Evaluating Formulas
		HA1-140	Solving Equations by Combining Like Terms
		HA1-145	Solving Equations with Variables on Both Sides
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-155	Writing an Equation to Solve Consecutive Integer Problems
		HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
		HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
		HA1-175	Solving Literal Equations
		HA1-180	Graphing Equations and Inequalities on the Number Line
		HA1-185	Solving Inequalities Using the Addition and Subtraction Properties
		HA1-190	Solving Inequalities Using the Multiplication and Division Properties
		HA1-195	Solving Inequalities Using More Than One Property
		HA1-200	Combined Inequalities
		HA1-205	Solving Combined Inequalities
		HA1-210	Solving Equations Involving Absolute Value
		HA1-215	Solving Absolute Value Inequalities
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
		HA1-410	Determining an Equation of a Line Given the Coordinates of Two Points
		HA1-415	Graphing Linear Inequalities with Two Variables
		HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-450	Solving Problems Involving Direct Variation
		HA1-453	Solving Problems Involving Inverse Variation
		HA1-858	Finding Inverse Relations and Determining if They are Functions
		HA1-955	Analyzing Linear Functions
NUMERICAL AND PROPORTIONAL REASONING			
2.1.	Understand that a variety of numerical representations can be used to describe quantitative relationships.		
2.1.a	Extend the understanding of numbers to include integers, rational numbers and real numbers.	HA1-015	Graphing Real Numbers Using a Number Line
		HA1-020	Classifying Numbers into Subsets of Real Numbers
		HA1-035	Adding Real Numbers Using a Number Line
		HA1-025	Comparing and Ordering Real Numbers
		HA1-030	Using Opposites and Absolute Values

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		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
2.1.b	Interpret and represent large sets of numbers with the aid of technologies.	HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-180	Graphing Equations and Inequalities on the Number Line
		HA1-185	Solving Inequalities Using the Addition and Subtraction Properties
		HA1-190	Solving Inequalities Using the Multiplication and Division Properties
		HA1-195	Solving Inequalities Using More Than One Property
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
2.2.	Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.		
2.2.a	Develop strategies for computation and estimation using properties of number systems to solve problems.	HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-060	Evaluating Expressions Using the Order of Operations
		HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
		HA1-076	Basic Distributive Property
		HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-130	Identifying Postulates, Theorems, and Properties
		MPA-004	Using Rounding to Estimate
		MPA-005	Estimating Products and Quotients Using Patterns
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
2.2.b	Solve proportional reasoning problems.	HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		HA1-450	Solving Problems Involving Direct Variation
		HA1-453	Solving Problems Involving Inverse Variation
		MPA-061	Converting Metric Units of Length, Capacity, and Mass
		MPA-062	Converting Units in Customary System
		MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
GEOMETRY AND MEASUREMENT			
3.1.	Use properties and characteristics of two- and three-dimensional shapes and geometric theorems to describe relationships, communicate ideas and solve problems.		
3.1.a	Investigate relationships among plane and solid geometric figures using geometric models, constructions and tools.	HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-893	Constructing Solids from Different Perspectives
		MPA-055	Finding the Perimeter of a Figure
		MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-058	Identifying Polygons
		MPA-059	Classifying Triangles and Quadrilaterals

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		MPA-060	Determining Which Figures Tessellate
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-068	Finding the Area of Irregular Figures
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
		MPA-072	Identifying 3-D Figures
		MPA-073	Finding the Surface Area of Rectangular Prisms
		MPA-074	Finding the Surface Area of Cylinders
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
3.1.b	Develop and evaluate mathematical arguments using reasoning and proof.	HA1-881	Completing and Validating Algebraic Proofs
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-007	Solving Problems Using Logical Reasoning Skills
		Throughout	
3.2.	Use spatial reasoning, location and geometric relationships to solve problems.		
3.2.a	Verify geometric relationships using algebra, coordinate geometry, and transformations.	HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-893	Constructing Solids from Different Perspectives
		MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-058	Identifying Polygons
		MPA-059	Classifying Triangles and Quadrilaterals
		MPA-060	Determining Which Figures Tessellate
		MPA-072	Identifying 3-D Figures
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		MPA-120	Applying Dilations in the Coordinate Plane
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
3.3.	Develop and apply units, systems, formulas and appropriate tools to estimate and measure.		
3.3.a	Solve a variety of problems involving 1-, 2- and 3-dimensional measurements using geometric relationships and trigonometric ratios.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
		HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
		HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane

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		HA1-889	Complementary and Supplementary Angles
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		MPA-055	Finding the Perimeter of a Figure
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-060	Determining Which Figures Tessellate
		MPA-066	Solving Problems Using the Pythagorean Theorem
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-068	Finding the Area of Irregular Figures
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
		MPA-073	Finding the Surface Area of Rectangular Prisms
		MPA-074	Finding the Surface Area of Cylinders
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
WORKING WITH DATA: PROBABILITY AND STATISTICS			
4.1.	Collect, organize and display data using appropriate statistical and graphical methods.		
4.1.a	Create the appropriate visual or graphical representation of real data.	HA1-545	Making a Frequency Distribution Table
		HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs
		HA1-885	Histograms and the Normal Distribution
		HA1-886	Unions and Intersections of Sets Using Venn Diagrams
		MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
		MPA-093	Choosing Appropriate Scales and Intervals for Data
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-099	Recognizing Misleading Statistics and Graphs
		MPA-129	Choosing Appropriate Scales and Intervals for Data (an Introduction)
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatter Plots
4.2.	Analyze data sets to form hypotheses and make predictions.		
4.2.a	Analyze real-world problems using statistical techniques.	HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
		HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-555	Computing the Range, Variance, and Standard Deviation of a Set of Data
4.3.	Understand and apply basic concepts of probability.		
4.3.a	Understand and apply the principles of probability in a variety of situations.	HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
		HA1-879	Applying Counting Techniques to Permutations and Combinations
		MPA-089	Using Tree Diagrams
		MPA-090	Finding the Probability of Simple Real-Life Events

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		MPA-091	Finding the Number of Combinations of a Set of Objects
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
		MPA-113	Finding the Probability of Compound Events Through Experimentation
		MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model

MM1-Fundamentals of Mathematics
 MPA- Pre-Algebra
 HA1-Algebra 1

Note: Standards were taken from the Connecticut Mathematics Curriculum Framework document for Mathematics Grades PreK-12 adopted by the Connecticut State Department of Education in September 2005.