



## AHSGE Correlation to Mathematics Standards

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
<b>I. The student will be able to perform basic operations on algebraic expressions.</b>			
I.1	Apply order of operations.	HA1-003	Order of Operations
		HA1-030	Using Opposites and Absolute Values
		HA1-060	Evaluating Expressions Using the Order of Operations
		HA1-060	Evaluating Expressions Using the Order of Operations
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
		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
		HA1-860	Using the Laws of Exponents
I.2	Add and subtract polynomials.	HA1-245	Adding and Subtracting Polynomials
I.3	Multiply polynomials.	HA1-220	Identifying and Multiplying Monomials
		HA1-230	Raising a Monomial or Quotient of Monomials to a Power
		HA1-255	Multiplying Two Binomials Using the FOIL Method
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
		HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
I.4	Factor polynomials.	HA1-270	Factoring the Greatest Common Monomial Factor from a Polynomial
		HA1-275	Factoring the Difference Between Two Squares and Perfect Trinomial Squares
		HA1-276	Factoring Sums and Differences of Cubes
		HA1-280	Factoring $x^2 + bx + c$ When $c$ is Greater Than Zero
		HA1-285	Factoring $x^2 + bx + c$ When $c$ is Less Than Zero
		HA1-290	Factoring $ax^2 + bx + c$
		HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-295	Factoring by Removing a Common Factor and Grouping
		HA1-300	Factoring a Polynomial Completely
<b>II. The student will be able to solve equations and inequalities.</b>			
II.1	Solve multi-step equations of first degree.	HA1-140	Solving Equations by Combining Like Terms
		HA1-145	Solving Equations with Variables on Both Sides
		HA1-360	Expressing Ratios in Simplest Form and Solving Equations Involving Proportions
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-800	Solving Equations
II.2	Solve quadratic equations that are factorable.	HA1-305	Solving Polynomial Equations by Factoring
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-310	The Practical Use of Polynomial Equations
II.3	Solve systems of two linear equations.	HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method

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		HA1-465	Solving Systems of Linear Equations by the Addition/Subtraction Method
		HA1-470	Solving Systems of Linear Equations by the Multiply/Add/Subtract Method
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
II.4	Solve multi-step inequalities of first degree.	HA1-195	Solving Inequalities Using More Than One Property
		HA1-200	Combined Inequalities
		HA1-205	Solving Combined Inequalities
<b>III. The student will be able to apply concepts related to functions.</b>			
III.1	Identify functions.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
III.2	Find the range of functions when given the domain.	HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
<b>IV. The student will be able to apply formulas.</b>			
IV.1	Find the perimeter, circumference, area, or volume of geometric figures.	MPA-055	Finding the Perimeter of a Figure
		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
IV.2	Find the distance, midpoint, or slope of line segments when given two points.	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
<b>V. The student will be able to apply graphing techniques.</b>			
V.1	Graph or identify graphs of linear equations.	HA1-380	Graphing Linear Equations
		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
V.2	Graph lines given certain conditions.	HA1-380	Graphing Linear Equations
		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
V.3	Determine solution sets of inequalities.	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
		HA1-200	Combined Inequalities
		HA1-205	Solving Combined Inequalities
V.4	Identify graphs of common relations.	HA1-927	Graphing $f(x) = ax^2$ Using Dilations
		HA1-950	Graphing Absolute Value Functions
<b>VI. The student will be able to represent problem situations.</b>			
VI.1	Translate verbal or symbolic information into algebraic expressions; or identify equations or inequalities that represent graphs or problem situations.	HA1-150	Writing an Equation to Solve Word Problems
		HA1-200	Combined Inequalities
		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
<b>VII. The student will be able to solve problems involving a variety of algebraic and geometric concepts.</b>			
VII.1	Apply properties of angles and relationships between angles.	MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles

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		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		MPA-060	Determining Which Figures Tessellate
		HA1-889	Complementary and Supplementary Angles
		HGM-055	Investigating Vertical Angles and Linear Pairs
VII.2	Apply Pythagorean Theorem.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
VII.3	Apply properties of similar polygons.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
VII.4	Apply properties of plane and solid geometric figures.	MPA-055	Finding the Perimeter of a Figure
		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
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
VII.5	Determine measures of central tendency.	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
VII.6	Determine probabilities.	MPA-090	Finding the Probability of Simple Real-Life Events
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
		MPA-113	Finding the Probability of Compound Events Through Experimentation
		HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
		HA1-565	Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events
VII.7	Solve problems involving direct variation.	MPA-142	Solving Problems With Linear Functions and Direct Variation
		HA1-450	Solving Problems Involving Direct Variation
VII.8	Solve problems involving algebraic concepts.	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
		HA1-362	Solving Work Problems
		HA1-170	Solving Percent of Change Problems

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Alabama Pathways for Learning - Mathematics document adopted by the Alabama State Board of Education in 2003.