



10th Grade Correlation to Mathematics Performance Standards

	Mathematics Curriculum Framework	I CAN Learn® Lesson #	I CAN Learn® Lesson Title
	NUMERATION		
N-1	The student demonstrates understanding of real numbers by identifying their subsets (natural, whole, integers, rational, irrational) (M1.4.1)	HA1-020	Classifying Numbers into Subsets of Real Numbers
N-2	The student demonstrates understanding of real numbers by simplifying expressions with positive and negative exponents (M1.4.4 & M3.4.4)	HA1-810	Simplifying Expressions Using the Multiplication Properties of Exponents
		HA1-815	Simplifying Expressions with Negative and Zero Exponents
		HA1-818	Simplifying Expressions Using the Division Properties of Exponents
		HA1-065	Evaluating Expressions Containing Exponents
N-3	The student demonstrates understanding of real numbers by expressing square roots in simplest radical form (M1.4.4 & M3.4.4)	HA1-480	Finding the Square Roots of Rational Numbers
		HA1-490	Simplifying Square Roots
N-4	The student demonstrates conceptual understanding of mathematical operations by describing or illustrating the effects of arithmetic operations on real numbers (M1.4.3)	HA1-025	Comparing and Ordering Real Numbers
		HA1-030	Using Opposites and Absolute Values
		HA1-035	Adding Real Numbers Using a Number Line
		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 Integers
		HA1-060	Evaluating Numerical Expressions Using the Order of Operations
		HA1-495	Simplifying Sums and Differences of Radicals
		HA1-500	Simplifying Products of Radicals
		HA1-505	Simplifying Quotients of Radicals
		HA1-485	Writing Rational Numbers as Decimals or Fractions
N-5	The student demonstrates conceptual understanding of mathematical operations by describing or illustrating the use of inverse operations (cubing/cube root) (M1.4.3 & 1.4.5)	HA1-492	Simplifying Square and Cube Roots
		HA1-480	Finding the Square Roots of Rational Numbers
		HA1-490	Simplifying Square Roots
N-6	The student demonstrates conceptual understanding of mathematical operations by describing or illustrating [counting and adding in different bases L] (M1.4.2)	Content under review	
N-7	The student demonstrates conceptual understanding of number theory by identifying or applying commutative, identity, associative, inverse, or distributive properties to real numbers and variables (M1.4.5)	HA1-076	Basic Distributive Property
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers

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N-8	The student demonstrates conceptual understanding of number theory by identifying or writing the prime factorization of a variable expression using exponents (M1.4.4)	HA1-130	Identifying Postulates, Theorems, and Properties
		HA1-270	Factoring the Greatest Common Monomial Factor from a Polynomial
	MEASUREMENT		
MEA-1	The student demonstrates understanding of measurable attributes by converting square and cubic units within the same system, English or metric, in real-world applications (M2.4.2)	MPA-155	Comparing and Converting Rates
**MEA-2	The student demonstrates understanding of measurement techniques by [Applying right triangle trigonometry (sine, cosine, and tangent) to find missing dimensions in real-world applications L] (M2.4.4)	HGM-215	Investigating Properties of the 30°-60°-90° Triangle
		HGM-220	Investigating Properties of the 45°-45°-90° Triangle
	ESTIMATION & COMPUTATION		
**E&C-1	The student solves problems (including real-world situations) using estimation by explaining why one strategy is more appropriate than another and determining why the estimation result is greater or less than the exact answer (L) (M3.4.1)	HA1-150	Writing an Equation to Solve Word Problems
		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
		HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
E&C-2	The student accurately solves problems (including real-world situations) by applying basic operations with real numbers using powers [and scientific notation L] (M3.4.2 & M3.4.3)	HA1-810	Simplifying Expressions Using the Multiplication Properties of Exponents
		HA1-815	Simplifying Expressions with Negative and Zero Exponents
		HA1-818	Simplifying Expressions Using the Division Properties of Exponents
		HA1-235	Applying Scientific Notation
E&C-3	The student accurately solves problems (including real-world situations) by solving problems involving percent increase or decrease (M3.4.5)	HA1-170	Solving Percent of Change Problems
	FUNCTIONS AND RELATIONSHIPS		
F&R-1	The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by describing or extending patterns (families of functions: linear, quadratic, absolute value) up to the nth term, represented in tables, sequences, graphs, or in problem situations (M4.4.1)	HA1-402	Translating Among Multiple Representations of Functions
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
		HA1-955	Analyzing Linear Functions
		HA1-960	Real-World Applications of Linear Functions
		HA1-950	Graphing Absolute Value Functions
		HA1-887	Applications of Absolute Value, Step, and Constant Functions
		HA1-935	Analyzing Graphs of Quadratic Functions
		HA1-940	Applications of Quadratic Equations
		HA1-945	Real-World Applications of Quadratic Functions
		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
		HA1-820	Graphing Exponential Functions

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F&R-2	The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by generalizing equations and inequalities (linear, quadratic, absolute value) using a table of ordered pairs or a graph (M4.4.4)	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
		HA1-380	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
		HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-415	Graphing Linear Inequalities with Two Variables
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
F&R-3	The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by describing in words how a change in one variable or constant in an equation affects the outcome of the equation (M4.3.2)	HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-955	Analyzing Linear Functions
		HA1-960	Real-World Applications of Linear Functions
		HA1-450	Solving Problems Involving Direct Variation
F&R-4	The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by using a calculator as a tool when describing, extending, representing, or graphing patterns, linear, equations, or quadratic equations (L) (M4.4.2)	HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-892	Data Analysis Using the Graphing Calculator
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-892	Data Analysis Using the Graphing Calculator
F&R-5	The student demonstrates algebraic thinking by modeling (graphically or algebraically) or solving situations using systems of linear equations or inequalities (including real-world applications) (M4.4.3)	HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-460	Solving Systems of Linear Equations by the Substitution Method
		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
		HA1-475	Graphing the Solution Set of a System of Linear Inequalities
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
F&R-6	The student demonstrates algebraic thinking by selecting and using the quadratic formula to solve problems (M4.4.2)	HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
F&R-7	The student demonstrates algebraic thinking by solving or identifying solutions to literal equations or formulas for a variable involving multi-steps (e.g., solve for h when $A = 1/2 h(b_1 + b_2)$) (M4.4.2)	HA1-175	Solving Literal Equations
	GEOMETRY		
G-1	The student demonstrates an understanding of geometric relationships by identifying, analyzing, comparing, or using properties of plane figures: • supplementary, complementary or vertical angles • angles created by parallel lines with a transversal • sum of interior or exterior angles of a polygon • central angles, chords, inscribed angles or arcs of a circle	HGM-045	Applying Properties of Complementary and Supplementary Angles

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	(M5.4.1)		
		HGM-050	Using the Angle Addition Postulate and Properties of Angle Bisectors
		HGM-055	Investigating Vertical Angles and Linear Pairs
		HGM-060	Examining Angle Relationships and Parallel Lines
G-2	The student demonstrates an understanding of geometric relationships by using isometric drawings to create 2-dimensional drawings of 3-dimensional objects (shapes that are composites of rectangular right prisms) (L) (M5.4.2)	HA1-893	Constructing Solids from Different Perspectives
G-3	The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by identifying congruent and similar figures using Euclidean geometry (e.g., [constructions L], coordinate geometry) (M5.4.3)	Lesson in development	
G-4	The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by using transformations to show congruence or similarity of figures on a coordinate plane (M5.4.4)	Lesson in development	
G-5	The student solves problems (including real-world situations) by determining the volume or surface area of spheres or compound solids (M5.3.4)	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
G-6	The student demonstrates understanding of position and direction when solving problems (including real-world situations) by graphing a line segment on a coordinate grid and/or identifying its length or midpoint by using formulas (M5.4.5)	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
G-7	The student demonstrates understanding of position and direction when solving problems (including real-world situations) by graphing a system of equations on a coordinate grid, identifying a solution, or determining their relationship (intersecting, parallel, perpendicular) (M5.4.5)	HA1-455	Solving Systems of Linear Equations by Graphing
		HA1-806	Solving Systems of Linear Equations Using the Graphing Calculator
**G-8	The student demonstrates a conceptual understanding of geometric drawings or constructions by drawing, measuring, or constructing geometric models of plane figures (containing parallel and/or perpendicular lines, angles, perpendicular bisectors, congruent angles, regular polygons) (L) (M5.4.6)	HGM-070	Identifying Relationships: Parallel Lines and Segments
		HGM-075	Examining Perpendicular Lines
		HGM-060	Examining Angle Relationships and Parallel Lines
	STATISTICS AND PROBABILITY		
S&P-1	The student demonstrates an ability to classify and organize data by [designing, collecting L], organizing, displaying, or explaining the classification of data in real-world problems (e.g., science or humanities, peers, community, or careers), using information from tables or graphs that display two or more sets of data [or with technology L] (M6.4.1)	HA1-892	Data Analysis Using the Graphing Calculator
		HA1-885	Histograms and the Normal Distribution
S&P-2	The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions, describing trends; drawing, formulating, or justifying conclusions) by using information from a display to solve a problem or analyzing the validity of statistical conclusions (M6.4.1 & M6.4.4)	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-877	Drawing Inferences and Making Predictions from Tables and Graphs

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S&P-3	The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions, describing trends; drawing, formulating, or justifying conclusions) by using and justifying range and measures of central tendency to determine the best representation of the data for a practical situation (M6.4.3)	HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
S&P-4	The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions, describing trends; drawing, formulating, or justifying conclusions) by using a best fit line to describe trends and make predictions about data (M6.4.2)	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-965	Determining the Best-Fitting Line
S&P-5	The student demonstrates a conceptual understanding of probability and counting techniques by explaining in words or identifying the difference between experimental and theoretical probability of independent or dependent events (M6.4.5)	HA1-879	Applying Counting Techniques to Permutations and Combinations
S&P-6	The student demonstrates a conceptual understanding of probability and counting techniques by analyzing data to make predictions about the probability of independent or dependent events as a basis for solving real-world problems (M6.4.5)	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
S&P-7	The student demonstrates a conceptual understanding of probability and counting techniques by designing, conducting, analyzing, and communicating the results of a multi-stage probability experiment (L) (M6.4.6)	HA1-879	Applying Counting Techniques to Permutations and Combinations
		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
	PROBLEM SOLVING		
PS-1	The student demonstrates an ability to problem solve by applying multi-step, integrated, mathematical problem-solving strategies (M7.4.2)	Throughout	Standard is demonstrated throughout. For examples, please see the following:
		HA1-545	Making a Frequency Distribution Table
		HA1-380	Graphing Linear Equations
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-449	Applying Inductive and Deductive Reasoning
		HA1-886	Unions and Intersections of Sets Using Venn Diagrams
PS-2	The student demonstrates an ability to problem solve by verifying the answer by using an alternative strategy (M7.4.3)	Throughout	Standard is demonstrated throughout. For examples, please see the following:
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-155	Writing an Equation to Solve Consecutive Integer Problems
		HA1-124	Using a Concrete Model to Solve One- and Two-Step Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
PS-3	The student communicates his or her mathematical thinking by representing mathematical problems numerically, graphically, and/ or symbolically, communicating math ideas in writing; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions (M8.4.1, M8.4.2, & M8.4.3)	Throughout	Standard is demonstrated throughout. For examples, please see the following:
		HA1-104	Translating Word Statements into Equations

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		HA1-105	Translating Word Statements into Inequalities
		HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-124	Using a Concrete Model to Solve One- and Two-Step Equations
		HA1-144	Using a Concrete Model to Solve Equations with Variables on Both Sides
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
PS-4	The student demonstrates an ability to use logic and reason by using methods of proof including direct, indirect, and counterexamples to validate conjectures (M9.4.3)	Throughout	Standard is demonstrated throughout. For examples, please see the following:
		HA1-449	Applying Inductive and Deductive Reasoning
		HA1-130	Identifying Postulates, Theorems, and Properties
		HA1-881	Completing and Validating Algebraic Proofs
		HA1-805	Applying Algebra Concepts
PS-5	The student demonstrates the ability to apply mathematical skills and processes across the content strands by using real-world contexts such as global issues and careers (M10.4.1 & M10.4.2)	Throughout	Standard is demonstrated throughout. Journal questions and Problem Sets of the Day include real-world contexts. For examples, please see the following:
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-960	Real-World Applications of Linear Functions
		HA1-945	Real-World Applications of Quadratic Functions

** Indicates the benchmark standards that are assessed at the local district level.

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Grade 10 Alaska Mathematics Performance Standards K-12 document adopted by the Alaska State Board of Education and Early Development on June 10, 2005.