



8th Grade Correlation to Mathematics Standards

	Mathematics Curriculum Framework	I CAN Learn [®] Lesson #	I CAN Learn [®] Lesson Title
STRAND 1	NUMBER AND OPERATIONS		
Concept 1	Number Sense		
PO 1.	Compare and order real numbers including very large and small integers, and decimals and fractions close to zero.	MPA-021	Converting Between Standard and Scientific Notation
		MPA-031	Comparing and Ordering Fractions and Decimals
		MPA-016	Comparing and Ordering Decimals
		MPA-045	Comparing and Ordering Integers
PO 2.	Classify real numbers as rational or irrational.	MPA-065	Estimating Square Roots
		MPA-124	Classifying Numbers in the Real Number System
PO 3.	Model the relationship between the subsets of the real number system.	MPA-124	Classifying Numbers in the Real Number System
PO 4.	Model and solve problems involving absolute value.	MPA-044	Finding Opposite and Absolute Values of Integers
Concept 2	Numerical Operations		
PO 1.	Solve problems with factors, multiples, divisibility or remainders, prime numbers, and composite numbers.	MPA-024	Using Divisibility Rules
		MPA-025	Identifying Prime and Composite Numbers
		MPA-026	Using Prime Factorization
		MPA-027	Finding the Greatest Common Factor
		MPA-030	Finding Least Common Multiple of Two or More Numbers
PO 2.	Describe the effect of multiplying and dividing a rational number by		
	· a number less than zero,	MPA-051	Multiplying Integers with Like and Unlike Signs
		MPA-052	Dividing Integers with Like and Unlike Signs
	· a number between zero and one,	MPA-122	Modeling Multiplication and Division of Decimals
		MPA-123	Modeling Multiplication and Division of Fractions
		MPA-033	Estimating Computations with Fractions and Mixed Numbers
	· one, and	MPA-002	Adding, Subtracting, Multiplying, and Dividing Whole Numbers
	· a number greater than one.	MPA-005	Estimating Products and Quotients Using Patterns
PO 3.	Solve problems involving percent increase, percent decrease, and simple interest rates.	MPA-087	Finding Percent Increase and Decrease
		MM1-610	Finding Simple Interest
		MPA-128	Solving Real-World Problems Involving Simple and Compound Interest
PO 4.	Convert standard notation to scientific notation and vice versa (include positive and negative exponents).	MPA-021	Converting Between Standard and Scientific Notation
PO 5.	Simplify numerical expressions using the order of operations that include grouping symbols, square roots, cube roots, absolute values, and positive exponents.	MPA-008	Order of Operations
		MPA-064	Finding Square Roots
		MPA-013	Using Powers and Exponents in Expressions
		MPA-014	Evaluating Expressions for Given Variables

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		HA1-030	Using Opposites and Absolute Values
Concept 3	Estimation		
PO 1.	Make estimates appropriate to a given situation.	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
		MPA-133	Distinguishing Between Exact and Approximate Answers
PO 2.	Estimate the location of rational and common irrational numbers on a number line.	MPA-064	Finding Square Roots
		MPA-065	Estimating Square Roots
STRAND 2	DATA ANALYSIS, PROBABILITY AND DISCRETE MATHEMATICS		
Concept 1	Data Analysis (Statistics)		
PO 1.	Solve problems by selecting, constructing, interpreting, and calculating with displays of data, including box and whisker plots and scatterplots.	MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
		MPA-129	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-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-099	Recognizing Misleading Statistics and Graphs
		MPA-840	Interpreting Data
PO 2.	Make inferences by comparing the same summary statistic for two or more data sets.	MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-099	Recognizing Misleading Statistics and Graphs
		MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
PO 3.	Describe how summary statistics relate to the shape of the distribution.	HA1-885	Histograms and the Normal Distribution
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
PO 4.	Determine whether information is represented effectively and appropriately given a graph or a set of data by identifying sources of bias and compare and contrast the effectiveness of different representations of data.	MPA-099	Recognizing Misleading Statistics and Graphs
		MPA-840	Interpreting Data
PO 5.	Evaluate the design of an experiment.	MM1-385	Collecting Data
		MPA-840	Interpreting Data
		MPA-099	Recognizing Misleading Statistics and Graphs
Concept 2	Probability		
PO 1.	Determine theoretical and experimental conditional probabilities in compound probability experiments.	MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
		MPA-113	Finding the Probability of Compound Events Through Experimentation
PO 2.	Interpret probabilities within a given context and compare the outcome of an experiment to predictions made prior to performing the experiment.	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
PO 3.	Use all possible outcomes (sample space) to determine the probability of dependent and independent events.	MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
Concept 3	Systemic Listing and Counting		
PO 1.	Represent, analyze, and solve counting problems with or without ordering and repetitions.	MPA-089	Using Tree Diagrams
		MPA-091	Finding the Number of Combinations of a Set of Objects

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PO 2.	Solve counting problems and represent counting principles algebraically including factorial notation.	MPA-089	Using Tree Diagrams
		MPA-091	Finding the Number of Combinations of a Set of Objects
Concept 4	Vertex-Edge Graphs		
PO 1.	Use directed graphs to solve problems.	Content under review	
STRAND 3 PATTERNS, ALGEBRA AND FUNCTIONS			
Concept 1	Patterns		
PO 1.	Recognize, describe, create, and analyze numerical and geometric sequences using tables, graphs, words, or symbols; make conjectures about these sequences.	HA1-447	Identifying Number Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
Concept 2	Functions and Relationships		
PO 1.	Sketch and interpret a graph that models a given context; describe a context that is modeled by a given graph.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		HA1-402	Translating Among Multiple Representations of Functions
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
PO 2.	Determine if a relationship represented by a graph or table is a function.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
PO 3.	Write the rule for a simple function using algebraic notation.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		HA1-402	Translating Among Multiple Representations of Functions
PO 4.	Identify functions as linear or nonlinear and contrast distinguishing properties of functions using equations, graphs, or tables.	MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		HA1-402	Translating Among Multiple Representations of Functions
PO 5.	Demonstrate that proportional relationships are linear using equations, graphs, or tables.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
Concept 3	Algebraic Representations		
PO 1.	Write or identify algebraic expressions, equations, or inequalities that represent a situation.	HA1-104	Translating Word Statements into Equations
		HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-105	Translating Word Statements into Inequalities
		HA1-180	Graphing Equations and Inequalities on the Number Line
PO 2.	Evaluate an expression containing variables by substituting rational numbers for the variables.	MPA-014	Evaluating Expressions for Given Variables
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-070	Evaluating Formulas for Given Values of the Variables
PO 3.	Analyze situations, simplify, and solve problems involving linear equations and inequalities using the properties of the real number system.	HA1-104	Translating Word Statements into Equations
		MPA-100	Solving Two-Step Equations with Positive Coefficients
		MPA-165	Solving Two-Step Equations with Negative Coefficients
		MPA-101	Solving Two-Step Equations by Combining Like Terms
		MPA-170	Solving Equations Using the Distributive Property
		MPA-175	Solving Equations with Variables on Both Sides
		MPA-109	Solving and Graphing Linear Inequalities on a Number Line
		MPA-125	Formulating a Possible Problem Situation Given an Equation
		HA1-124	Using a Concrete Model to Solve One- and Two-Step Equations

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		HA1-144	Using a Concrete Model to Solve Equations with Variables on Both Sides
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-105	Translating Word Statements into Inequalities
		HA1-180	Graphing Equations and Inequalities on the Number Line
PO 4.	Translate between different representations of linear equations using symbols, graphs, tables, or written descriptions.	HA1-104	Translating Word Statements into Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		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
		HA1-362	Solving Work Problems
		HA1-165	Using Equations to Solve Percent Problems
		HA1-170	Solving Percent of Change Problems
		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
		HA1-180	Graphing Equations and Inequalities on the Number Line
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		HA1-402	Translating Among Multiple Representations of Functions
PO 5.	Graph an inequality on a number line.	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
		HA1-180	Graphing Equations and Inequalities on the Number Line
Concept 4	Analysis of Change		
PO 1.	Interpret the relationship between a linear equation and its graph, identifying and computing slope and intercepts.	MPA-135	Determining the Slope of a Line
		MPA-140	Examining Linear Equations in Slope-Intercept Form
PO 2.	Solve problems involving simple rates.	MPA-155	Comparing and Converting Rates
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-077	Solving Problems Using a Formula
		HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
STRAND 4	GEOMETRY AND MEASUREMENT		
Concept 1	Geometric Properties		
PO 1.	Identify the attributes of circles: radius, diameter, chords, tangents, secants, inscribed angles, central angles, intercepted arcs, circumference, and area.	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
PO 2.	Predict results of combining, subdividing, and changing shapes of plane figures and solids.	MPA-068	Finding the Area of Irregular Figures
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
PO 3.	Use proportional reasoning to determine congruence and similarity of triangles.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
PO 4.	Use the Pythagorean Theorem to solve problems.	MPA-066	Solving Problems Using the Pythagorean Theorem
Concept 2	Transformation of Shape		
PO 1.	Model the result of rotations in multiples of 45 degrees of a 2-dimensional figure about the origin.	MPA-180	Examining Line and Rotational Symmetry
PO 2.	Describe the transformations that create a given tessellation.	MPA-060	Determining Which Figures Tessellate
PO 3.	Identify lines of symmetry in plane figures or classify types of symmetries of 2-dimensional figures.	MPA-180	Examining Line and Rotational Symmetry
Concept 3	Coordinate Geometry		
PO 1.	Make and test a conjecture about how to find the midpoint between any two points in the coordinate plane.	HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane

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PO 2.	Use the Pythagorean Theorem to find the distance between two points in the coordinate plane.	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
Concept 4	Measurement		
PO 1.	Solve problems involving conversions within the same measurement system.	MPA-062	Converting Units in Customary System
		MPA-061	Converting Metric Units of Length, Capacity, and Mass
PO 2.	Solve geometric problems using ratios and proportions.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
PO 3.	Calculate the surface area and volume of rectangular prisms, right triangular prisms, and cylinders.	MPA-073	Finding the Surface Area of Rectangular Prisms
		MPA-074	Finding the Surface Area of Cylinders
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
STRAND 5	STRUCTURE AND LOGIC		
Concept 1	Algorithms and Algorithmic Thinking		
PO 1.	Create an algorithm to solve problems involving indirect measurements, using proportional reasoning, dimensional analysis, and the concepts of density and rate.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		MPA-155	Comparing and Converting Rates
		MPA-077	Solving Problems Using a Formula
		HA1-160	Writing an Equation to Solve Distance, Rate, and Time Problems
Concept 2	Logic, Reasoning, Problem Solving, and Proof		
PO 1.	Analyze a problem situation to determine the question(s) to be answered.	Throughout	This standard is demonstrated throughout. For examples please see:
		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
		HA1-362	Solving Work Problems
PO 2.	Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-021	Converting Between Standard and Scientific Notation
		MPA-155	Comparing and Converting Rates
		MPA-066	Solving Problems Using the Pythagorean Theorem
PO 3.	Identify relevant, missing, and extraneous information related to the solution to a problem.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-087	Finding Percent Increase and Decrease
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		MPA-133	Distinguishing Between Exact and Approximate Answers
PO 4.	Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-003	Using Four-Step Plan for Problem Solving
		HA1-150	Writing an Equation to Solve Word Problems
		HA1-155	Writing an Equation to Solve Consecutive Integer Problems
PO 5.	Apply a previously used problem-solving strategy in a new context.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-127	Solving Real-World Problems Involving Discounts, Markups, and Commission
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		MPA-124	Classifying Numbers in the Real Number System
PO 6.	Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-155	Comparing and Converting Rates

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		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
		MPA-124	Classifying Numbers in the Real Number System
		MPA-113	Finding the Probability of Compound Events Through Experimentation
PO 7.	Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
		MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-132	Interpreting and Creating Scatterplots
PO 8.	Describe when to use proportional reasoning to solve a problem.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
PO 9.	Make and test conjectures based on information collected from explorations and experiments.	HA1-545	Making a Frequency Distribution Table
		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
		HA1-965	Determining the Best-Fitting Line
		HA1-885	Histograms and the Normal Distribution
PO 10.	Solve logic problems involving multiple variables, conditional statements, conjectures, and negation using words, charts, and pictures.	MPA-007	Solving Problems Using Logical Reasoning Skills
		HA1-449	Applying Inductive and Deductive Reasoning
PO 11.	Identify simple valid arguments using if... then statements.	MPA-007	Solving Problems Using Logical Reasoning Skills
		HA1-449	Applying Inductive and Deductive Reasoning
PO 12.	Make, validate, and justify conclusions and generalizations about linear relationships.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
PO 13.	Verify the Pythagorean Theorem using a valid argument.	MPA-066	Solving Problems Using the Pythagorean Theorem
		HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Arizona Mathematics Standards Articulated by Grade Level document adopted by the Arizona State Board of Education and published in 2008.