I CAN Learn®
EDUCATION SYSTEMS

ARIZONA

7th 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.	Recognize and convert between expressions for positive and negative rational numbers, including fractions, decimals, percents, and ratios.	MPA-029	Converting Fractions and Decimals
		MPA-032	Converting Improper Fractions and Mixed Numbers
		MPA-081	Converting Fractions, Decimals, and Percents I
		MPA-082	Converting Fractions, Decimals, and Percents II
		MPA-078	Expressing Ratios as Fractions and Determining Equivalency
PO 2.	Find or use factors, multiples, or prime factorization within a set of 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 3.	Compare and order rational numbers using various models and representations.	MPA-031	Comparing and Ordering Fractions and Decimals
		MM1-602	Comparing and Ordering Rational Numbers
		MPA-045	Comparing and Ordering Integers
PO 4.	Model and solve simple problems involving absolute value.	MPA-044	Finding Opposite and Absolute Values of Integers
Concept 2	Numerical Operations		
PO 1.	Add, subtract, multiply, and divide integers.	MPA-047	Adding Integers with Like Signs
		MPA-048	Adding Integers with Unlike Signs
		MPA-050	Subtracting Integers with Unlike Signs
		MPA-051	Multiplying Integers with Like and Unlike Signs
		MPA-052	Dividing Integers with Like and Unlike Signs
		MPA-053	Adding, Subtracting, Multiplying, and Dividing Integers
		MPA-117	Modeling Algebraic Expressions and Equations Using Cups and Counters
PO 2.	Solve problems with rational numbers and appropriate operations using exact answers or estimates.	MPA-005	Estimating Products and Quotients Using Patterns
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-003	Using Four-Step Plan for Problem Solving
		MPA-133	Distinguishing Between Exact and Approximate Answers
PO 3.	Solve problems involving percentages, ratio and proportion, including tax, discount, tips, and part/whole relationships.	MPA-083	Finding Number Given Percent and Total
		MPA-084	Finding Percent Given Number and Total
		MPA-085	Finding Total Given Number and Percent
		MPA-086	Solving Problems Using Percent
		MPA-087	Finding Percent Increase and Decrease

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		MPA-126	Solving Real-World Problems Involving Sales Tax
		MPA-127	Solving Real-World Problems Involving Discounts, Markups, and Commission
		MPA-128	Solving Real-World Problems Involving Simple and Compound Interest
PO 4.	Represent and interpret numbers using scientific notation (positive exponents only).	MPA-021	Converting Between Standard and Scientific Notation
PO 5.	Simplify numerical expressions using the order of operations and appropriate mathematical properties.	MPA-008	Order of Operations
Concept 3	Estimation		
PO 1.	Estimate and apply benchmarks for rational numbers and common irrational numbers.	MPA-033	Estimating Computations with Fractions and Mixed Numbers
		MPA-023	Rounding Quotients Involving Decimals
		MPA-017	Rounding Decimals and Estimating Computations Using Decimals
PO 2.	Make estimates appropriate to a given situation.	MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-017	Rounding Decimals and Estimating Computations Using Decimals
		MPA-133	Distinguishing Between Exact and Approximate Answers
PO 3.	Estimate square roots of numbers less than 1000 by locating them between two consecutive whole numbers.	MPA-065	Estimating Square Roots
PO 4.	Estimate the measure of an object in one system of units given the measure of that object in another system and the approximate conversion factor.	MPA-130	Developing a Sense of Relative Sizes of Measures
		MPA-133	Distinguishing Between Exact and Approximate Answers
		MPA-062	Converting Units in Customary System
		MPA-061	Converting Metric Units of Length, Capacity, and Mass
		MPA-063	Converting Units Between Metric and Customary System
		MPA-155	Comparing and Converting Rates
		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
STRAND 2	**DATA ANALYSIS, PROBABILITY AND DISCRETE MATHEMATICS**		
Concept 1	Data Analysis (Statistics)		
PO 1.	Solve problems by selecting, constructing, and interpreting displays of data including multi-line graphs 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.	Interpret trends in a data set, estimate values for missing data, and predict values for points beyond the range of the data set.	MPA-132	Interpreting and Creating Scatterplots
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
PO 3.	Identify outliers and determine their effect on mean, median, mode, and range.	MPA-095	Find the Mean, Median, and Mode
		MPA-094	Interpreting and Constructing Line Plots
		MPA-097	Constructing Box-and-Whisker Plots
PO 4.	Distinguish between a simple random and non-random sample.	MM1-385	Collecting Data
Concept 2	Probability		
PO 1.	Determine conditional probabilities (experimental) in compound probability experiments.	MPA-113	Finding the Probability of Compound Events Through Experimentation
PO 2.	Experiment with two different events to determine whether the two events are dependent or independent of each other.	MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)

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PO 3.	Compare the results of multiple repetitions of the same probability experiment to the theoretical probability.	MPA-113	Finding the Probability of Compound Events Through Experimentation
PO 4.	Compare probabilities to determine fairness in experimental situations.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
Concept 3	Systemic Listing and Counting		
PO 1.	Analyze relationships among the tree diagrams where items repeat and do not repeat; make numerical connections to the multiplication principle of counting.	MPA-089	Using Tree Diagrams
		MPA-091	Finding the Number of Combinations of a Set of Objects
PO 2.	Solve counting problems using Venn diagrams and represent the answer algebraically.	MPA-113	Finding the Probability of Compound Events Through Experimentation
Concept 4	Vertex-Edge Graphs		
PO 1.	Use vertex-edge graphs and algorithmic thinking to represent and find solutions to practical problems related to Euler/Hamilton paths and circuits.	Content under review	PT#30729
STRAND 3	**PATTERNS, ALGEBRA AND FUNCTIONS**		
Concept 1	Patterns		
PO 1.	Recognize, describe, create, and analyze numerical and geometric sequences using tables or graphs; make conjectures about these sequences.	MPA-104	Recognizing Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
Concept 2	Functions and Relationships		
PO 1.	Use a table of values to graph an equation or proportional relationship; describe the graph's characteristics.	MPA-102	Graphing Equations by Plotting Points
		MPA-135	Determining the Slope of a Line
		MPA-140	Examining Linear Equations in Slope-Intercept Form
Concept 3	Algebraic Representations		
PO 1.	Write a single variable algebraic expression or one-step equation given a contextual situation.	MPA-042	Solving Problems Using an Equation
		MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-117	Modeling Algebraic Expressions and Equations Using Cups and Counters
PO 2.	Evaluate an expression containing one or two variables by substituting numbers for the variables.	MPA-014	Evaluating Expressions for Given Variables
PO 3.	Solve multi-step equations using inverse properties with rational numbers.	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
PO 4.	Translate between graphs and tables that represent a linear equation.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-102	Graphing Equations by Plotting Points
		MPA-142	Solving Problems With Linear Functions and Direct Variation
PO 5.	Create and solve two-step equations that can be solved using inverse operations with rational numbers.	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
PO 6.	Create and solve one-step inequalities with whole numbers.	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
		MM1-641	Graphing the Solution to an Algebraic Equation (Journal)
Concept 4	Analysis of Change		
PO 1.	Use graphs and tables to model and analyze change.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation

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STRAND 4	**GEOMETRY AND MEASUREMENT**		
Concept 1	Geometric Properties		
PO 1.	Recognize the relationship between central angles and intercepted arcs; identify arcs and chords of a circle.	MPA-070	Finding the Circumference of a Circle
PO 2.	Analyze and determine relationships between angles created by parallel lines cut by a transversal.	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
PO 3.	Draw and classify 3-dimensional figures with appropriate labels showing specified attributes of parallelism, congruence, perpendicularity, and symmetry.	MPA-072	Identifying 3-D Figures
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-180	Examining Line and Rotational Symmetry
PO 4.	Describe the relationship between the number of sides in a regular polygon and the sum of its interior angles.	MPA-060	Determining Which Figures Tessellate
PO 5.	Identify corresponding parts of congruent figures.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
Concept 2	Transformation of Shape		
PO 1.	Model the result of a double transformation (translations or reflections) of a 2-dimensional figure on a coordinate plane using all four quadrants.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
Concept 4	Measurement		
PO 1.	Solve problems involving the circumference and area of a circle by calculating and estimating.	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
		MPA-068	Finding the Area of Irregular Figures
PO 2.	Identify polygons having the same perimeter or area.	MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
PO 3.	Calculate the area and perimeter of composite 2-dimensional figures.	MPA-055	Finding the Perimeter of a Figure
		MPA-068	Finding the Area of Irregular Figures
		MPA-160	Plotting Polygons and Finding the Area
PO 4.	Determine actual lengths based on scale drawings or maps.	MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
PO 5.	Create a net to calculate the surface area of a given solid.	MPA-106	Identifying a Solid Figure From a Net
		MPA-073	Finding the Surface Area of Rectangular Prisms
		MPA-074	Finding the Surface Area of Cylinders
PO 6.	Identify the appropriate unit of measure to compute the volume of an object and justify reasoning.	MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-077	Solving Problems Using a Formula
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
PO 7.	Measure to the appropriate degree of accuracy and justify reasoning.	MPA-133	Distinguishing Between Exact and Approximate Answers
		MPA-130	Developing a Sense of Relative Sizes of Measures
		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
STRAND 5	**STRUCTURE AND LOGIC**		
Concept 1	Algorithms and Algorithmic Thinking		
PO 1.	Create an algorithm to determine the area of a given composite figure.	MPA-068	Finding the Area of Irregular Figures
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:
		MPA-003	Using Four-Step Plan for Problem Solving
		MPA-042	Solving Problems Using an Equation
		MPA-125	Formulating a Possible Problem Situation Given an Equation

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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-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
		MPA-003	Using Four-Step Plan for Problem Solving
		MPA-042	Solving Problems Using an Equation
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:
		MM1-195	Identifying the Mathematical Question Given in a Word Problem
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
PO 5.	Apply a previously used problem-solving strategy in a new context.	MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
		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-118	Modeling Algebraic Expressions and Equations Using Algebra Tiles
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
PO 6.	Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-124	Classifying Numbers in the Real Number System
		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
		MPA-103	Distinguishing Between Relations and Functions
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-007	Solving Problems Using Logical Reasoning Skills
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		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 8.	Make and test conjectures based on information collected from explorations and experiments.	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
		MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
PO 9.	Solve logic problems using multiple variables and multiple conditional statements using words, pictures, and charts.	MPA-007	Solving Problems Using Logical Reasoning Skills
PO 10.	Demonstrate and explain that the process of solving equations is a deductive proof.	Throughout	This standard is demonstrated throughout. For examples please see:
		MPA-042	Solving Problems Using an Equation
		MPA-054	Solving One-Step Equations with Integers Using all Four Operations
PO 11.	Use manipulatives and other modeling techniques to defend π (pi) as a ratio of circumference to diameter.	MPA-070	Finding the Circumference of a Circle

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.