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Arizona Mathematics Standards Correlated to *Moving with Math Extensions Grade 8*

		Student Book	Skill Builders
	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.		48-1
PO.2	Classify real numbers as rational or irrational.		
PO.3	Model the relationship between the subsets of the real number system.		
PO.4	Model and solve problems involving absolute value.		48-2
	Concept 2: Numerical Operations		
PO.1	Solve problems with factors, multiples, divisibility or remainders, prime numbers, and composite numbers.	4, 6	3-1
PO.2	Describe the effect of multiplying and dividing a rational number by		
•	a number less than zero,	73, 74	58-3, 58-4
•	a number between zero and one,	22, 23	
•	one, and		
•	a number greater than one.	24, 73, 74	14-1, 15-1, 16-1, 17-1
PO.3	Solve problems involving percent increase, percent decrease, and simple interest rates.	38	
PO.4	Convert standard notation to scientific notation and vice versa (include positive and negative exponents.)		57-2
PO.5	Simplify numerical expressions using the order of operations that include grouping symbols, square roots, cube roots, absolute values, and positive exponents.		59-1
	Concept 3: Estimation		
PO.1	make estimates appropriate to a given situation.	37	44-1
PO.2	Estimate the location of rational and common irrational numbers on a number line.		
	STRAND 2: DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS		
	Concept 1: Data Analysis (Statistics)		

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PO.1	Solve problems by selecting, constructing, interpreting, and calculating with displays of data, including box and whisker plots and scatterplots.	14, 15, 16	45-3
PO.2	Make inferences by comparing the same summary statistic for two or more data sets.		
PO.3	Describe how summary statistics relate to the shape of the distribution.		
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.		
PO.5	Evaluate the design of an experiment.		
	Concept 2: Probability		
PO.1	Determine theoretical and experimental conditional probabilities in compound probability experiments.	26 (T.G.)	
PO.2	Interpret probabilities within a given context and compare the outcome of an experiment to predictions made prior to performing the experiment.	26	
PO.3	Use all possible outcomes (sample space) to determine the probability of dependent and independent events.		
	Concept 3: Systematic Listing and Counting		
PO.1	Represent, analyze, and solve counting problems with or without ordering and repetitions.		
PO.2	Solve counting problems and represent counting principles algebraically including factorial notation.		
	Concept 4: Vertex-Edge Graphs		
PO.1	Use directed graphs to solve problems.		
	STRAND 3: PATTERNS, ALGEBRA, 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.	8	42-1
	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.		
PO.2	Determine if a relationship represented by a graph or table is a function.		
PO.3	Write the rule for a simple function using algebraic notation.		
PO.4	Identify functions as linear or nonlinear and contrast distinguishing properties of functions using equations, graphs, or tables.		

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PO.5	Demonstrate that proportional relationships are linear using equations, graphs, or tables.		
	Concept 3: Algebraic Representations		
PO.1	Write or identify algebraic expressions, equations, or inequalities that represent a situation.	75, 76	
PO.2	Evaluate an expression containing variables by substituting rational numbers for all variables.		59-2
PO.3	Analyze situations, simplify, and solve problems involving linear equations and inequalities using the properties of the real number system.	78, 79, 80	50-1, 50-2, 50-3
PO.4	Translate between different representations of linear equations using symbols, graphs, tables, or written descriptions.	70 (T.G.)	
PO.5	Graph an inequality on a 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.		
PO.2	Solve problems involving simple rates.		
	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.	42	
PO.2	Predict results of combining, subdividing, and changing shapes of plane figures and solids.		
PO.3	Use proportional reasoning to determine congruence and similarity of triangles.		
PO.4	Use the Pythagorean Theorem to solve problems.	55	54-1
	Concept 2: Transformation of Shapes		
PO.1	Model the result of rotations in multiples of 45 degrees of a 2-dimensional figure about the origin.		
PO.2	Describe the transformations that create a given tessellation.		
PO.3	Identify lines of symmetry in plane figures or classify types of symmetries of 2-dimensional figures.		
	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.		
PO.2	Use the Pythagorean Theorem to find the distance between two points in the coordinate plane.		

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	Concept 4: Measurement		
PO.1	Solve problems involving conversions within the same measurement system.	56, 57	35-1, 37-1, 37-2
PO.2	Solve geometric problems using ratios and proportions.	53	
PO.3	Calculate the surface area and volume of rectangular prisms, right triangular prisms, and cylinders.	65	41-1
	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.		
	Concept 2: Logic, Reasoning, Problem Solving, and Proof		
PO.1	Analyze a problem situation to determine the question(s) to be answered.	9	43-1
PO.2	Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.	10	43-2
PO.3	identify relevant, missing, and extraneous information related to the solution to a problem.	9	43-1
PO.4	Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.	6	43-2
PO.5	Apply a previously used problem-solving strategy in a new context.	23	
PO.6	Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	journal prompts throughout	
PO.7	Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	4, 15	
PO.8	Describe when to use proportional reasoning to solve a problem.	36, 39, 40	26-2, 46-2
PO.9	Make and test conjectures based on information and collected from explorations and experiments.	26	
PO.10	Solve logic problems involving multiple variables, conditional statements, conjectures, and negation using words, charts, and pictures.		
PO.11	Identify simple valid arguments using if… then statements.		
PO.12	Make, validate, and justify conclusions and generalizations about linear relationships.		
PO.13	Verify the Pythagorean. Theorem using a valid argument.	54	