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Correlation of *Moving with Math® Exit Exam* to Ohio's Model Competency Based Program

		Student Book	Skill Builders
	NUMBER AND NUMERACY		
1.	**Represent and use real numbers in a variety of equivalent forms.**		
G6-3-8	Understand and describe in words how fractions and decimals expand the whole number system to the system of non-negative rational numbers.	13, 23	
G6-3-9	Be able to find a number between any two rational numbers.		
G7-3-4	Develop the concept of integers using concrete models, including number lines, and in the context of real-world situations.	30, 31	27
G7-3-5	Compare, order, and determine the equivalence of whole numbers, fractions, decimals, percents, and integers.	14, 19, 41-46	59-66
G7-3-8	Explore the concept of pi by comparing the measure of the diameter and circumference of circles.	101	
G7-3-11	Explore powers and scientific notation as alternate ways of writing numbers and in the context of calculators.	7-12	23-25, 75
G7-7-4	Use fractions, decimals, and percent equivalents interchangeably in making estimates.	16	
G8-3-1	Understand, represent, and use numbers written in a variety of equivalent forms in real-world and mathematical problem--solving situations.	44-52	66-74
G8-3-4	Understanding the real number system and describe it in words.		
G8-3-5	Construct segments to represent irrational numbers such as the square roots of 2, 3, 5, etc.		

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G8-3-6	Locate certain irrational numbers on the number line and find an irrational numbers between any two give numbers.	6	
G8-3-7	Understand and describe in words how the negative numbers expand the non-negative rationals to the rational number system.		
HS-3-1	Compare, order, and determine equivalence of real numbers.	6, 14, 19, 41-46	86
HS-3-3	Compare and contrast the real number system, the rational number system, and the whole number system.		
2.	**Estimate and compute with real numbers.**		
G6-3-1	Compute with whole numbers, fractions, and decimals.	15-22, 24-29, 32-39, 46, 57-65	30-39, 44, 46-53, 67-74
G7-3-2	Solve problems and make applications involving percents.	45-52	67, 71-74
G7-7-2	Adjust fractional number and decimal estimates in all operations.		
G7-7-3	Estimate with percents, using 1%, 10%, and 50%, and multiples of these numbers.		67, 68, 69
G7-7-4	Use fractions, decimals, and percent equivalents interchangeably in making estimates.	46	
G7-7-5	Estimate the square root of a given number to the nearest whole number or range of whole numbers.	6	86
G8-3-2	Develop an understanding of operations with integers using the number line and other models of integers.	31-39 146-149	54-58
G8-3-8	Give a meaningful explanation for the impossibility of division by zero.		
G8-3-10	Solve problems and make applications involving percentages.	47-50	67, 71-74
G8-7-4	Use estimation to determine reasonableness of results in all problem solving.	57-60	91, 92
G8-7-7	Use estimation to determine reasonableness of problem solutions.	57-60	91, 92
HS 3-2	Estimate answers, compute, and solve problems involving real numbers.	57-60	91, 92

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HS 7-2	Use estimating to determine reasonableness of problem situations in a wide variety of applications.	57-60	91, 92
HS 7-4	Use mental computation when computer and calculator are inappropriate.		49
3.	**Apply rates, ratios, proportions, and percents**		
G6-3-2	Explore concepts of percent, ratio, and proportions in the context of real-world situations.	47-50, 79, 81	103-105
G6-3-4	Investigate relations between ratios, proportions, and percents.	80	101
G7-3-1	Represent percent by proportions and algebraic equations and solve for missing terms.	47	70, 71
G7-3-2	Solve problems and make applications involving percents.	47-50	70-74
G7-3-3	Solve and use proportions.	197	102-105
G7-5-8	Relate ratio and proportion concepts to variation situations, direct and inverse.	196	101
G8-4-1	Calculate missing measurements of similar figures.		104, 105
G9-4-3	Describe and apply the properties of similar and congruent figures.	91-93, 95	104, 105
HS-6-9	Establish ratios with and without common units.	80, 121	101, 103
	ALGEBRA AND FUNCTIONS		
4.	**Write, interpret, simplify, evaluate, and/or use algebraic expressions and formulas.**		
G6-5-	Use the distributive property in arithmetic computations.	174, 175	169
G7-5-1	Use parentheses accurately to group numbers for applying operations.	177	154
G7-5-2	Apply formulas to problem situations.	96-118	107-120, 136
G7-5-3	Describe problem situations involving ratios, proportions, and percents with algebraic expressions.	192, 197	68, 70, 102-105
G7-5-5	Evaluate algebraic expressions (simple substitutions).	153, 157, 159-166	152, 163-165, 169

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G7-4-8	Use separation of rectangles as an area model for the distributive property.	175	
G8-5-9	Factor mathematical expressions involving a common factor.		
G8-5-11	Solve simple number sentences and use formulas.	96-118, 153, 157, 159-166	152, 163-166, 168
G9-5-8	Factor the difference of two squares.		
5.	**Use linear equations and inequalities.**		
G6-5-6	Solve linear equations using concrete representations.	157, 159, 161, 162, 164	152, 163
G7-2-1	Use an open sentence 9algebraic equation0 to symbolize a problem situation and solve the equation to find a solution to a problem.	153, 161, 162, 164, 165	152, 166, 168
G7-5-4	Solve linear equations with one variable by working backward (relate to inverse operations).	159-166	163-166, 168
G8-5-2	Explain in words the meaning of the expression "solution of an equation."	159	
G8-5-3	Investigate the solutions of pairs of simultaneous equations.	218, 219	174
G8-5-4	Solve linear inequalities in one variable.	167-172	166, 168
G8-5-5	Interpret problem situations described by linear inequalities in words and graphically.	168-172	166
G9-5-4	Describe and use the logic of equivalence in working with equations, inequalities, and functions.	159-165	163-165
G10-5-3	Represent inequalities on the number line and in the coordinate plane.	168-172	166
6.	**Represent a mathematical relationship using a table, graph, symbols, and words, and describe how a change in the value of one variable affects the value of a related variable.**		
G6-1-1	Build simple functions using concrete models and generate a corresponding rule.	159, 161-163	
G6-1-2	Explore the relation between doubling the side of a square and/or other regular figures and the corresponding increase in area.	116	115, 129

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G6-1-3	Explore mathematical expressions of relations observed in other curricular domains.	81, 198-200	103, 104
G6-5-2	Construct tables to describe a problem situation.	61, 198-200	
G6-5-3	Use a variable to describe a generalization from a problem situation.	61, 198-200	
G7-1-1	Describe and represent relationships with tables, graphs, rules, and words.	61, 198-201	157
G7-1-3	Explore and symbolize direct and inverse variation.	196-200	
G7-5-8	Relate ratio and proportion concepts to variation situations, direct and inverse.	197	
G8-1-2	Use invented and conventional symbols to explain a function relation.		
G8-5-1	Use and relate tables, graphs, and equations to solve problem situations involving exponential growth and decay, simple interest, and compound interest.	198-200	
G8-5-8	Describe and solve variation situations, direct and inverse, algebraically and graphically.	196-200	
G9-1-1	Model real-world phenomena with polynomial and exponential functions.		
G9-1-3	Translate among tables, algebraic expressions, and graphs of functions.	199-201, 206-209	
G9-5-1	Describe problem situations by using and relating numerical, symbolic, and graphical representations.	199, 200	
G10-5-1	Describe geometric situations and phenomena using variables, equations, and functions.	199, 200	
G10-5-2	Describe measures of central tendency, mean, median, mode, and variance, algebraically and graphically.		
HS-6-11	Understand and solve rate-change problems.	196	
7.	**Create and analyze graphs of linear and simple non-linear functions.**		
G7-1-5	Generate ordered pairs with and without a calculator to graph linear equations.	206-208	
G7-1-6	Explore absolute value in the context of distance between two points.	53, 54	87

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G7-5-6	Interpret graphs of problem situations describing linear,, quadratic, and exponential relationships.	217-220	160, 174
G7-5-7	Construct graphs describing problem situations and assign and label scales to axes of graphs appropriately.	215	174
G8-5-6	Find the distance between two points in the coordinate plane.		
G8-5-7	Explore and interpret the concepts of slope and intercept as characteristics of linear functions.	208, 210-216	171-173
G9-1-2	Explore the relationship between zeros and intercepts of functions.	208, 213	171, 172
G9-1-4	Use a graphing calculator or computer to generate the graph of a function.		
G9-1-5	Explore the relation between a linear function and its inverse.		
G9-5-2	Use the language and notation of functions in symbolic and graphing settings.	209, 211-217	171-173
G9-5-3	Recognize, relate, and use the equivalent ideas of zeros of a function, roots of an equation, and solution of an equation in terms of graphical and symbolic representations.	218, 219	174
G9-5-5	Develop graphical techniques of solution for problem situations involving functions.	218, 219	174
G9-5-6	Explore and describe characterizing features of functions.	198	
G9-5-9	Determine slope, midpoint, and distance.	211-216	172, 173
	GEOMETRY AND MEASUREMENT		
8.	**Apply angle relationships to situations involving intersecting lines, perpendicular lines, and parallel lines.**		
G6-4-1	Measure angles in geometric figures and explore relationships between angle measure and other characteristics of the figures.	85, 86, 88	123, 124
G8-4-2	Investigate the relationships between angles formed when parallel lines are cut by a transversal, using diagrams and computer graphics.		

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G9-4-3	Demonstrate an understanding of angles and parallel and perpendicular lines.	82, 84	131, 132, 134
9.	**Recognize and apply characteristics of congruent and similar figures.**		
G6-4-3	Identify and distinguish among similar, congruent, and symmetric figures.	91-93	104, 148-140
G8-1-4	Explore the effect of multiplying the dimensions of a simple shape or solid by a constant factor and relate to the change in area or volume.		115
G8-4-1	Calculate the missing measurements of similar figures.	116	104, 129
G8-4-4	Graph similar figures, reflections, translations, and rotations on a coordinate plane.	95	
G9-4-3	Describe and apply properties of similar and congruent figures.	91-93	104, 138-140
G10-4-3	Identify congruent and similar figures using transformations with computer programs.		
10.	**Apply visualization, spatial sense, and properties of two-dimensional figures and three-dimensional objects.**		
G6-4-4	Visualize and show the results of a rotation, translation, reflection, or stretching.	92, 95	139
G6-4-5	Explore properties that can be used to characterize or contrast different classes of figures.	111	122
G6-4-6	Recognize, classify, and use characteristics of lines and simple two-dimensional figures.	87-90	124-128
G6-4-7	Explore and verbalize relationships between different kinds of figures.	82, 84, 87-90	124-128, 134
G7-4-1	Explore and verbalize relationships between different kinds of figures.	87-90	124-128
G7-4-2	Explore and describe procedures for changing one figure or shape to another.		
G7-4-3	Develop minimum sets of properties that describe a geometric figure.	90	
G7-4-4	Develop definitions of common geometric figures.	82, 90	125, 126

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G7-4-5	Build the model of a figure given top, side, and front views.		
G7-4-6	Validate fundamental geometric theorems using manipulative materials and informal arguments.	96, 99-106, 110, 116	
G7-4-7	Visualize and describe the results of folding geometric figures.	116	129
G8-4-3	Sketch three-dimensional figures from different perspectives.		
G8-4-6	Extend experiences validating fundamental geometric theorems.	97	111, 117, 120, 136
G9-4-1	Create and interpret drawings of three-dimensional objects.	111	122
G9-4-2	Represent problem situations with geometric models and apply properties of figures.	111, 113	128
G10-4-4	Deduce properties of figures using transformations and using coordinates.	94, 95	136
11.	**Use measurement techniques including scale drawings, formulas, and geometric relationships to find length, perimeter, area, surface area, and volume.**		
G6-4-1	Measure angles in geometric figures and explore relationships between angle measure and other characteristics of the figures.	87, 88	124
G6-6-1	Select and use appropriate units and devices to measure length, area, volume, and weight.	69-73, 117, 118	96
G6-6-2	Explore and use formulas to compute areas and perimeters (circumferences) of common polygons (polygonal regions) and circles (circular regions).	99-108	108-119
G7-6-4	State and apply area formulas for the following regions: circular, rectangular, parallelogram, trapezoidal, and triangular.	103-108	113-119
G7-6-5	Apply volume formulas for the following: prisms, cylinders, and spheres.	111	122
G7-6-6	Determine formulas for surface area.	116	129
G7-6-8	Determine what to measure and measure to calculate perimeters, areas, and volumes.	99-118	108-130

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G8-1-3	Explore the right triangle relations sine, cosine, and tangent and their application in measurement. (finding inaccessible distances, etc.)		
G8-4-1	Calculate missing measurements of similar figures.		104
G8-4-8	Explore use of the Pythagorean Theorem.		
G8-4-9	Find surface areas and volumes of rectangular solids.	109, 110, 116-118	120, 121, 129, 130
G8-6-1	Measure and compute perimeter for irregular polygonal regions.	98	107
G8-6-2	Compute area for regular polygonal regions, other composite figures, and lattice (geoboard) figures.	103-108, 112, 113	
G8-6-3	Make appropriate measurements and compute volume of solids such as prisms, cylinders, pyramids, and cones.	109-111	120-122
G9-4-4	Apply the Pythagorean Theorem.	96, 97	136
HS-6-1	Estimate and use measurements.	85-88	95, 96, 100, 123, 124
HS-6-12	Understand and solve right triangle relationships as they relate to measurement - specifically those that deal with the Pythagorean Theorem.	96, 97	136
HS-6-19	Determine area and volume.	103-111	113-122, 128
G10-1-2	Apply trigonometric functions to problem situations involving triangles.		
	DATA ANALYSIS AND PROBABILITY		
12.	**Create, interpret and/or analyze tables, charts, and graphs involving data.**		
G6-8-3	Read, interpret, and use tables, charts, maps and graphs to identify patterns, note trends and draw conclusions.	61, 136	88, 95
G7-8-1	Collect data and create the appropriate type of graph and use the appropriate scale.	132	143, 144, 150
G7-8-2	Create, read, and interpret tables, charts, diagrams, and maps.	136-139	143, 144

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G7-8-3	Identify the ordered pair for a point on a labeled coordinate plane.	94	135
G7-8-6	Make logical inferences from statistical data.	132, 136	143, 144
G7-8-7	Detect misuses of statistical or numerical information.		
G8-8-1	Collect data and create appropriate graphs to illustrate.		143, 144, 150
G8-8-2	Make identifications, comparisons, and predictions, and solve application problems using picture, bar, circle, and line graphs.	136-183	143, 144
G9-8-1	Organize data into tables, charts, and graphs.		143, 144, 150
G10-8-1	Use curve fitting to predict from data.		
HS-6-10	Construct and interpret maps, tables, charts, and graphs as they relate to real-world mathematics.	136-139	143, 144, 150
13.	**Choose and apply measures of central tendency (mean, median, and mode) and variability (range and visual displays of distribution).**		
G6-8-5	Explore changes in the mean and the mode when some data are changed.		
G7-8-4	Calculate and explore relationships between the mean, median, mode, and range of a given set of numbers.	130-134	141-144
G7-8-8	Develop and interpret frequency tables.	136	143-145
G7-8-9	Compute averages.	130, 131	141, 142
G8-8-3	Find the mean, mode, median, and range of a set of data and use them in application problems.	130-134	141-144
G8-8-4	Detect misuses of statistical or numerical information.		
G9-8-2	Understand and apply measures of central tendency, variability, and correlation.	130-134, 142, 143	141-144, 150

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14.	**Represent and interpret the possible outcomes for a mathematical situation and calculate probabilities.**		
G6-8-6	Construct a tree diagram to list alternatives and procedures.	126	146
G6-8-8	Investigate probabilities for possible outcomes of a simple experiment.	120-24	145-147
G6-8-9	Make predictions of outcomes of experiments based on theoretical probabilities and explain the actual outcomes.	124, 125, 127	145, 148
G7-8-5	Explore permutations and combinations and the relationship between them.	129	
G8-8-5	Use elementary notions of probability.	120-124	145, 147
G8-8-6	Explore the role of sampling and colleting data in making a statistical argument.		
G10-8-2	Use experimental or theoretical probability, as appropriate, to represent and solve problems involving uncertainty.	120-125, 127, 128	145, 147, 148
G10-8-3	Use computer simulations and random number generators to estimate probabilities.	120-125	147
	MATHEMATICAL PROCESS		
15.	**Communicate mathematical ideas, reasoning, and solutions through the use of appropriate mathematical terminology, notations, symbols, definitions, models, and other representations.**		
G8-2-1	Select appropriate notation and methods for symbolizing the problem statement and solution process.	150-153	152
HS-6-17	Develop the ability to identify real problems and provide possible solutions to these problems.	57, 58	89-91
16.	**Apply problem-solving strategies and evaluate processes, strategies, calculations, and solutions to verify reasonableness; and use mathematical reasoning to validate and/or generalize approaches, arguments, strategies, and solutions.**		

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G7-2-2	Validate solutions to problems in a variety of ways.	57-59	160-162
G7-2-3	Rephrase a problem as a simpler problem to find a method of solution.	58	
G7-2-5	Identify problems that are similar in structure.	58	89-91
G7-8-6	Make logical inferences from statistical data.	132, 136-141	143, 144
G7-8-7	Detect misuses of statistical or numerical infor	57, 58	89-91
G8-2-3	Validate and generalize problem solutions.		