



Correlation to 8th Grade Core Content for Assessment

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
Numbers and Operations			
N.ME.08.01	Understand the meaning of a square root of a number and its connection to the square whose area is the number; understand the meaning of a cube root and its connection to the volume of a cube.	MM1-565	Finding Squares and Square Roots
		HA1-492	Simplifying Square and Cube Roots
N.ME.08.02	Understand meanings for zero and negative integer exponents.	HA1-860	Using the Laws of Exponents
		HA1-861	Simplifying Expressions with Negative and Zero Exponents
N.ME.08.03	Understand that in decimal form, rational numbers either terminate or eventually repeat, and that calculators truncate or round repeating decimals; locate rational numbers on the number line; know fraction forms of common repeating decimals.	MPA-029	Converting Fractions and Decimals
N.ME.08.04	Understand that irrational numbers are those that cannot be expressed as the quotient of two integers, and cannot be represented by terminating or repeating decimals; approximate the position of familiar irrational numbers, e.g., $\sqrt{2}$, $\sqrt{3}$, π , on the number	MPA-124	Classifying Numbers in the Real Number System
N.FL.08.05	Estimate and solve problems with square roots and cube roots using calculators.	HA1-492	Simplifying Square and Cube Roots
N.FL.08.06	Find square roots of perfect squares and approximate the square roots of non-perfect squares by locating between consecutive integers, e.g., $\sqrt{130}$ is between 11 and 12.	MPA-064	Finding Square Roots of Perfect Squares
		MPA-065	Estimating Square Roots
N.MR.08.07	Understand percent increase and percent decrease in both sum and product form, e.g., 3% increase of a quantity x is $x + .03x = 1.03x$.	MPA-087	Finding Percent Increase and Decrease
N.MR.08.08	Solve problems involving percent increases and decreases.	MPA-087	Finding Percent Increase and Decrease
N.FL.08.09	Solve problems involving compounded interest or multiple discounts.	MPA-128	Solving Real-World Problems Involving Simple and Compound Interest
N.MR.08.10	Calculate weighted averages such as course grades, consumer price indices, and sports ratings.	MM1-355	Solving Multi-Step Problems
N.FL.08.11	Solve problems involving ratio units, such as miles per hour, dollars per pound, or persons per square mile.	MPA-079	Unit rates
		MM1-635	Calculating Distance, Rate, or Time by Solving Equations
Algebra			
A.RP.08.01	Identify and represent linear functions, quadratic functions, and other simple functions including inversely proportional relationships ($y = k/x$); cubics ($y = ax^3$); roots ($y = \sqrt{x}$); and exponentials ($y = ax$, $a > 0$); using tables, graphs, and equations.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
A.PA.08.02	For basic functions, e.g., simple quadratics, direct and indirect variation, and population growth, describe how changes in one variable affect the others.	HA1-401	How Variations of "m" and "b" Affect the Graph of $y = mx + b$
		HA1-450	Solving Problems Involving Direct Variation

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
		HA1-955	Analyzing Linear Functions
		HA1-437	Identifying Relations as Functions
A.PA.08.03	Recognize basic functions in problem context, e.g., area of a circle, volume of a sphere, and represent them using tables, graphs, and formulas.	HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
A.RP.08.04	Use the vertical line test to determine if a graph represents a function in one variable.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
A.RP.08.05	Relate quadratic functions in factored form and vertex form to their graphs, and vice versa; in particular, note that solutions of a quadratic equation are the x-intercepts of the corresponding quadratic function.	HA1-935	Analyzing Graphs of Quadratic Functions
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
A.RP.08.06	Graph factorable quadratic functions, finding where the graph intersects the x-axis and the coordinates of the vertex; use words "parabola" and "roots"; include functions in vertex form and those with leading coefficient -1 .	HA1-935	Analyzing Graphs of Quadratic Functions
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
A.FO.08.07	Recognize and apply the common formulas: $(a + b)^2 = a^2 + 2ab + b^2$ $(a - b)^2 = a^2 - 2ab + b^2$ $(a + b)(a - b) = a^2 - b^2$; represent geometrically.	MPA-118	Modeling Integer Arithmetic Using Algebra Tiles
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
A.FO.08.08	Factor simple quadratic expressions with integer coefficients, solve simple quadratic equations, by taking square roots, by factoring, verify solutions by evaluation.	HA1-280	Factoring $x^2 + bx + c$ When c is Greater Than Zero
		HA1-285	Factoring $x^2 + bx + c$ When c is Less Than Zero
		HA1-271	Factoring Trinomials and the Differences of Squares Using Algebra Tiles
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
		HA1-305	Solving Polynomial Equations by Factoring
A.FO.08.09	Solve applied problems involving simple quadratic equations.	HA1-305	Solving Polynomial Equations by Factoring
		HA1-310	The Practical Use of Polynomial Equations
A.FO.08.10	Understand that to solve the equation $f(x) = g(x)$ means to find all values of x for which the equation is true, e.g., determine whether a given value, or values from a given set, is a solution of an equation (0 is a solution of $3x^2 + 2 = 4x + 2$, but 1 is	HA1-375	Identifying Solutions of Equations in Two Variables
A.FO.08.11	Solve simultaneous linear equations in two variables by graphing, by substitution, and by linear combination; estimate solutions using graphs; include examples with no solutions and infinitely many solutions.	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
A.FO.08.12	Solve linear inequalities in one and two variables, and graph the solution sets.	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
		HA1-105	Translating Word Statements into Inequalities
		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
		HA1-415	Graphing Linear Inequalities with Two Variables
		HA1-416	Graphing Linear Inequalities with Two Variables Using the Graphing Calculator
A.FO.08.13	Set up and solve applied problems involving simultaneous linear equations and linear inequalities.	HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
		HA1-805	Applying Algebra Concepts

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Geometry			
G.GS.08.01	Understand at least one proof of the Pythagorean Theorem; use the Pythagorean Theorem and its converse to solve applied problems including perimeter, area, and volume problems.	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
G.IO.08.02	Find the distance between two points on the coordinate plane using the distance formula; recognize that the distance formula is an application of the Pythagorean Theorem.	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
G.SR.08.03	Understand the definition of a circle; know and use the formulas for circumference and area of a circle to solve problems.	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
G.SR.08.04	Find area and perimeter of complex figures by sub-dividing them into basic shapes (quadrilaterals, triangles, circles).	MPA-068	Finding the Area of Irregular Figures
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
G.SR.08.05	Solve applied problems involving areas of triangles, quadrilaterals, and circles.	MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-071	Finding the Area of a Circle
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
G.SR.08.06	Know the volume formulas for generalized cylinders, generalized cones and pyramids, and spheres and apply them to solve problems.	MPA-076	Finding the Volume of Cylinders
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
G.SR.08.07	Understand the concept of surface area, and find the surface area of prisms, cones, spheres, pyramids, 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
G.SR.08.08	Sketch a variety of two-dimensional representations of three-dimensional solids including orthogonal views (top, front, and side), picture views (projective or isometric), and nets; use such two-dimensional representations to help solve problems.	MPA-106	Identifying a Solid Figure From a Net
		HA1-893	Constructing Solids from Different Perspectives
G.TR.08.09	Understand the definition of a dilation from a point in the plane, and relate it to the definition of similar polygons.	MPA-120	Applying Dilations in the Coordinate Plane
G.TR.08.10	Understand and use reflective and rotational symmetries of two-dimensional shapes and relate them to transformations to solve problems.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
Data and Probability			
D.AN.08.01	Determine which measure of central tendency (mean, median, mode) best represents a data set, e.g., salaries, home prices, for answering certain questions; justify the choice made.	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
D.AN.08.02	Recognize practices of collecting and displaying data that may bias the presentation or analysis.	MM1-385	Collecting Data
		MPA-840	Interpreting Data
D.PR.08.03	Compute relative frequencies from a table of experimental results for a repeated event. Interpret the results using relationship of probability to relative frequency.	HA1-545	Making a Frequency Distribution Table
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
D.PR.08.04	Apply the Basic Counting Principle to find total number of outcomes possible for independent and dependent events, and calculate the probabilities using organized lists or tree diagrams.	MPA-089	Using Tree Diagrams
		MPA-091	Finding the Number of Combinations of a Set of Objects

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		MPA-090	Finding the Probability of Simple Real-Life Events
		HA1-879	Applying Counting Techniques to Permutations and Combinations
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
		MPA-113	Finding the Probability of Compound Events Through Experimentation
D.PR.08.05	Find and/or compare the theoretical probability, the experimental probability, and/or the relative frequency of a given event.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
D.PR.08.06	Understand the difference between independent and dependent events, and recognize common misconceptions involving probability, e.g., Alice rolls a 6 on a die three times in a row; she is just as likely to roll a 6 on the fourth roll as she was on any previous roll.	MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

HGM-Geometry (Future Release)

Note: Standards were taken from the Grade 8 Mathematics Grade Level Content Expectations Version 12.05 for Michigan Department of Education - Kindergarten Through Grade Eight document adopted by the Michigan State Board of Education in March 2006.