I CAN Learn®
EDUCATION SYSTEMS

MINNESOTA

Correlation to Grade 8 Mathematics Standards

	Mathematics Curriculum Framework	I CAN Learn® Lesson #	I CAN Learn® Lesson Title
	NUMBER AND OPERATION		
8.1.1.1	Classify real numbers as rational or irrational. Know that when a square root of a positive integer is not an integer, then it is irrational. Know that the sum of a rational number and an irrational number is irrational, and the product of a non-zero rational number and an irrational number is irrational.	MPA-124	Classifying Numbers in the Real Number System
		MPA-065	Estimating Square Roots
8.1.1.2	Compare real numbers; locate real numbers on a number line. Identify the square root of a positive integer as an integer, or if it is not an integer, locate it as a real number between two consecutive positive integers.	HA1-015	Graphing Real Numbers Using a Number Line
		MPA-124	Classifying Numbers in the Real Number System
		HA1-025	Comparing and Ordering Real Numbers
8.1.1.3	Determine rational approximations for solutions to problems involving real numbers.	MPA-065	Estimating Square Roots
8.1.1.4	Know and apply the properties of positive and negative integer exponents to generate equivalent numerical expressions.	HA1-810	Simplifying Expressions Using the Multiplication Properties of Exponents
		HA1-815	Simplifying Expressions with Negative and Zero Exponents
8.1.1.5	Express approximations of very large and very small numbers using scientific notation; understand how calculators display numbers in scientific notation. Multiply and divide numbers expressed in scientific notation, express the answer in scientific notation, using the correct number of significant digits when physical measurements are involved.	HA1-235	Applying Scientific Notation
		MPA-134	Calculating with Precision, Accuracy, and Significant Digits
	ALGEBRA		
8.2.1.1	Understand that a function is a relationship between an independent variable and a dependent variable in which the value of the independent variable determines the value of the dependent variable. Use functional notation, such as f(x), to represent such relationships.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
		HA1-402	Translating Among Multiple Representations of Functions
		HA1-439	Using Function Notation
8.2.1.2	Use linear functions to represent relationships in which changing the input variable by some amount leads to a change in the output variable that is a constant times that amount.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-437	Identifying Relations as Functions
8.2.1.3	Understand that a function is linear if it can be expressed in the form f(x) = mx + b or if its graph is a straight line.	MPA-140	Examining Linear Equations in Slope-Intercept Form

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		HA1-955	Analyzing Linear Functions
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-960	Real-World Applications of Linear Functions
8.2.1.4	Understand that an arithmetic sequence is a linear function that can be expressed in the form f(x) = mx + b, where x = 0, 1, 2, 3,….	MPA-140	Examining Linear Equations in Slope-Intercept Form
		HA1-955	Analyzing Linear Functions
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-960	Real-World Applications of Linear Functions
		HA1-447	Identifying Number Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
8.2.1.5	Understand that a geometric sequence is a non-linear function that can be expressed in the form f(x) = mx + b, where x = 0, 1, 2, 3,….	MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		HA1-447	Identifying Number Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
8.2.2.1	Represent linear functions with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another.	HA1-402	Translating Among Multiple Representations of Functions
		MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
8.2.2.2	Identify graphical properties of linear functions including slopes and intercepts. Know that the slope equals the rate of change, and that the y-intercept is zero when the function represents a proportional relationship.	MPA-135	Determining the Slope of a Line
		MPA-140	Examining Linear Equations in Slope-Intercept Form
		HA1-955	Analyzing Linear Functions
		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points
		HA1-398	Graphing Linear Equations Using Slope and y-Intercept or Slope and a Point
8.2.2.3	Identify how coefficient changes in the equation f (x) = mx + b affect the graphs of linear functions. Know how to use graphing technology to examine these effects.	HA1-401	How Variations of "m" and "b" Affect the Graph of y = mx + b
		HA1-382	Solving Linear Equations Using the Graphing Calculator
8.2.2.4	Represent arithmetic sequences using equations, tables, graphs and verbal descriptions, and use them to solve problems.	MPA-270	Generating Algebraic Expressions from Patterns of Models
		HA1-447	Identifying Number Patterns
8.2.2.5	Represent geometric sequences using equations, tables, graphs and verbal descriptions, and use them to solve problems.	MPA-270	Generating Algebraic Expressions from Patterns of Models
		HA1-447	Identifying Number Patterns
8.2.3.1	Evaluate algebraic expressions, including expressions containing radicals and absolute values, at specified values of their variables.	HA1-480	Finding the Square Roots of Rational Numbers
		HA1-030	Using Opposites and Absolute Values
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-070	Evaluating Formulas for Given Values of the Variables
8.2.3.2	Justify steps in generating equivalent expressions by identifying the properties used, including the properties of algebra. Properties include the associative, commutative and distributive laws, and the order of operations, including grouping symbols.	HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
		HA1-076	Basic Distributive Property
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
8.2.4.1	Use linear equations to represent situations involving a constant rate of	MPA-142	Solving Problems With Linear Functions and Direct Variation

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	change, including proportional and non-proportional relationships.		
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
8.2.4.2	Solve multi-step equations in one variable. Solve for one variable in a multi-variable equation in terms of the other variables. Justify the steps by identifying the properties of equalities used.	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
8.2.4.3	Express linear equations in slope-intercept, point-slope and standard forms, and convert between these forms. Given sufficient information, find an equation of a line.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form
		HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
		HA1-410	Determining an Equation of a Line Given the Coordinates of Two Points
8.2.4.4	Use linear inequalities to represent relationships in various contexts.	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
8.2.4.5	Solve linear inequalities using properties of inequalities. Graph the solutions on a number line.	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
8.2.4.6	Represent relationships in various contexts with equations and inequalities involving the absolute value of a linear expression. Solve such equations and inequalities and graph the solutions on a number line.	HA1-210	Solving Equations Involving Absolute Value
		HA1-215	Solving Absolute Value Inequalities
8.2.4.7	Represent relationships in various contexts using systems of linear equations. Solve systems of linear equations in two variables symbolically, graphically and numerically.	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
8.2.4.8	Understand that a system of linear equations may have no solution, one solution, or an infinite number of solutions. Relate the number of solutions to pairs of lines that are intersecting, parallel or identical. Check whether a pair of numbers satisfies a system of two linear equations in two unknowns by substituting the numbers into both equations.	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
8.2.4.9	Use the relationship between square roots and squares of a number to solve problems.	MPA-064	Finding Square Roots
	GEOMETRY & MEASUREMENT		
8.3.1.1	Use the Pythagorean Theorem to solve problems involving right triangles.	MPA-066	Solving Problems Using the Pythagorean Theorem
8.3.1.2	Determine the distance between two points on a horizontal or vertical line in a coordinate system. Use the Pythagorean Theorem to find the distance between any two points in a coordinate system.	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
8.3.1.3	Informally justify the Pythagorean Theorem by using measurements, diagrams and computer software.	MPA-066	Solving Problems Using the Pythagorean Theorem
8.3.2.1	Understand and apply the relationships between the slopes of parallel lines and between the slopes of perpendicular lines. Dynamic graphing software may be used to examine these relationships.	HGM-090	Examining Slopes of Parallel and Perpendicular Lines
8.3.2.2	Analyze polygons on a coordinate system by determining the slopes of their	HGM-090	Examining Slopes of Parallel and Perpendicular Lines

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	sides.		
8.3.2.3	Given a line on a coordinate system and the coordinates of a point not on the line, find lines through that point that are parallel and perpendicular to the given line, symbolically and graphically.	HA1-405	Determining an Equation of a Line Given the Slope and Coordinates of One Point
	DATA ANALYSIS & PROBABILITY		
8.4.1.1	Collect, display and interpret data using scatterplots. Use the shape of the scatterplot to informally estimate a line of best fit and determine an equation for the line. Use appropriate titles, labels and units. Know how to use graphing technology to display scatterplots and corresponding lines of best fit.	MPA-132	Interpreting and Creating Scatterplots
		HA1-965	Determining the Best-Fitting Line
8.4.1.2	Use a line of best fit to make statements about approximate rate of change and to make predictions about values not in the original data set.	MPA-132	Interpreting and Creating Scatterplots
		HA1-965	Determining the Best-Fitting Line
8.4.1.3	Assess the reasonableness of predictions using scatterplots by interpreting them in the original context.	MPA-840	Interpreting Data

MM1 - Fundamentals of Mathematics
MPA - Pre-Algebra
HA1-Algebra 1
HGM - Geometry
Note: Standards were taken from the Minnesota Mathematics Standards for Grade 8 document adopted by the Minnesota State Board of Education revised in 2007 and put into rule effective September 22, 2008.