



Correlation to 8th Grade Curriculum Focal Points

	Mathematics Curriculum Framework	I CAN Learn® Lesson Number	I CAN Learn® Lesson Title	
Algebra: Analyzing and representing linear functions and solving linear equations and systems of linear equations				
<ul style="list-style-type: none"> Students use linear functions, linear equations, and systems of linear equations to represent, analyze, and solve a variety of problems. 		HA1-380	Graphing Linear Equations	
		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	
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time	
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations	
		HA1-955	Analyzing Linear Functions	
		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	
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities	
	<ul style="list-style-type: none"> They recognize a proportion ($y/x = k$, or $y = kx$) as a special case of a linear equation of the form $y = mx + b$, understanding that the constant of proportionality (k) is the slope and the resulting graph is a line through the origin. 		HA1-450	Solving Problems Involving Direct Variation
			HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
			HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-453	Solving Problems Involving Inverse Variation	
<ul style="list-style-type: none"> Students understand that the slope (m) of a line is a constant rate of change, so if the input, or x-coordinate, changes by a specific amount, a, the output, or y-coordinate, changes by the amount ma. 		HA1-385	Finding the Slope of a Line from its Graph or from the Coordinates of Two Points	
		HA1-394	Interchanging Linear Equations Between Standard Form and Slope-Intercept Form	
		HA1-395	Finding the Equation of a Line Parallel or Perpendicular to a Given Line	
		HA1-398	Graphing Linear Equations Using Slope and y -Intercept or Slope and a Point	
<ul style="list-style-type: none"> Students translate among verbal, tabular, graphical, and algebraic representations of functions (recognizing that tabular and graphical representations are usually only partial representations), and they describe how such aspects of a function as slope and y-intercept appear in different representations. 		HA1-402	Translating Among Multiple Representations of Functions	
		HA1-436	Identifying Relations	
		HA1-437	Identifying Relations as Functions	
<ul style="list-style-type: none"> Students solve systems of two linear equations in two variables and relate the systems to pairs of lines that intersect, are parallel, or are the same line, in the plane. 		HA1-455	Solving Systems of Linear Equations by Graphing	
	<ul style="list-style-type: none"> Students use linear equations, systems of linear equations, linear functions, and their understanding of the slope of a line to analyze 		HA1-380	Graphing Linear Equations

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	situations and solve problems.		
		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
		HA1-892	Data Analysis Using the Graphing Calculator
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
		HA1-955	Analyzing Linear Functions
		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
		HA1-870	Solving Problems with Systems of Linear Equations and Inequalities
Geometry and Measurement: Analyzing two- and three-dimensional space and figures by using distance and angle			
	<ul style="list-style-type: none"> Students use fundamental facts about distance and angles to describe and analyze figures and situations in two- and three-dimensional space and to solve problems, including those with multiple steps. 	HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		HA1-893	Constructing Solids from Different Perspectives
	<ul style="list-style-type: none"> They prove that particular configurations of lines give rise to similar triangles because of the congruent angles created when a transversal cuts parallel lines. 	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		HGM-060	Examining Angle Relationships and Parallel Lines
		HGM-070	Identifying Relationships: Parallel Lines and Segments
	<ul style="list-style-type: none"> Students apply this reasoning about similar triangles to solve a variety of problems, including those that ask them to find heights and distances. 	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
	<ul style="list-style-type: none"> They use facts about the angles that are created when a transversal cuts parallel lines to explain why the sum of the measures of the angles in a triangle is 180 degrees, and they apply this fact about triangles to find unknown measures of angles. 	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
	<ul style="list-style-type: none"> Students explain why the Pythagorean theorem is valid by using a variety of methods—for example, by decomposing a square in two different ways. 	HA1-515	Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
	<ul style="list-style-type: none"> They apply the Pythagorean theorem to find distances between points in the Cartesian coordinate plane to measure lengths and analyze polygons and polyhedra. 	HA1-520	Finding the Distance Between Two Points on a Coordinate Plane
		HA1-876	Applying Length, Midpoint and Slope of a Segment on a Cartesian Plane
Data Analysis and Number and Operations and Algebra: Analyzing and summarizing data sets			
	<ul style="list-style-type: none"> Students use descriptive statistics, including mean, median, and range, to summarize and compare data sets, and they organize and display data to pose and answer questions. 	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
		HA1-885	Histograms and the Normal Distribution
		HA1-555	Computing the Range, Variance, and Standard Deviation of a Set of Data
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots

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		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
		MPA-840	Interpreting Data
•	They compare the information provided by the mean and the median and investigate the different effects that changes in data values have on these measures of center.	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
•	They understand that a measure of center alone does not thoroughly describe a data set	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
		HA1-885	Histograms and the Normal Distribution
•	Students select the mean or the median as the appropriate measure of center for a given purpose.	MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
Connections to the Focal Points			
Algebra:	Students encounter some nonlinear functions (such as the inverse proportions that they studied in grade 7 as well as basic quadratic and exponential functions) whose rates of change contrast with the constant rate of change of linear functions.	HA1-453	Solving Problems Involving Inverse Variation
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
	They view arithmetic sequences, including those arising from patterns or problems, as linear functions whose inputs are counting numbers.	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
		MPA-270	Generating Algebraic Expressions from Patterns of Models
	They apply ideas about linear functions to solve problems involving rates such as motion at a constant speed.	HA1-960	Real-World Applications of Linear Functions
		HA1-441	Applications of Functions and Relations Involving Distance, Rate, and Time
		HA1-442	Interpreting Graphs of Functions in Real-Life Situations
Geometry:	Given a line in a coordinate plane, students understand that all “slope triangles”—triangles created by a vertical “rise” line segment (showing the change in y), a horizontal “run” line segment (showing the change in x), and a segment of the line itself—are similar.	HA1-380	Graphing Linear Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		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
		MPA-135	Determining the Slope of a Line (Fall 2009)
	They also understand the relationship of these similar triangles to the constant slope of a line.	HA1-380	Graphing Linear Equations
		HA1-382	Solving Linear Equations Using the Graphing Calculator
		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
		MPA-135	Determining the Slope of a Line (Fall 2009)
Data Analysis:	Building on their work in previous grades to organize and display data to pose and answer questions, students now see numerical data as an aggregate, which they can often summarize with one or several numbers. In addition to the median, students determine the 25th and 75th percentiles (1st and 3rd quartiles) to obtain information about the spread of data.	MM1-385	Collecting Data
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-131	Interpreting and Creating Histograms
		HA1-885	Histograms and the Normal Distribution

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	They may use box-and-whisker plots to convey this information.	MPA-097	Constructing Box-and-Whisker Plots
	Students make scatterplots to display bivariate data, and they informally estimate lines of best fit to make and test conjectures.	MPA-132	Interpreting and Creating Scatterplots
		HA1-965	Determining the Best-Fitting Line
Number and Operations:	Students use exponents and scientific notation to describe very large and very small numbers.	HA1-235	Applying Scientific Notation
	They use square roots when they apply the Pythagorean theorem.	MPA-064	Finding Square Roots of Perfect Squares
		MPA-065	Estimating Square Roots

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

HGM – Geometry Core

Note: The Grade 8 Curriculum Focus Points were taken from Curriculum Focus Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence; National Council of Teachers of Mathematics, 2006.