



8th Grade Correlation to Mathematics Learning Standards

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
NUMBER SENSE AND OPERATIONS			
8.N.1	Develop and apply the laws of exponents for multiplication and division	MPA-013	Using Powers and Exponents in Expressions
		HA1-810	Simplifying Expressions Using the Multiplication Properties of Exponents
		HA1-818	Simplifying Expressions Using the Division Properties of Exponents
8.N.2	Evaluate expressions with integral exponents	MPA-013	Using Powers and Exponents in Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-815	Simplifying Expressions with Negative and Zero Exponents
8.N.3	Read, write, and identify percents less than 1% and greater than 100%	MPA-082	Converting Fractions, Decimals, and Percents II
8.N.4	Apply percents to: <ul style="list-style-type: none"> • tax • percent increase/decrease • simple interest • sale price • commission • interest rates • gratuities 	MPA-086	Solving Problems Using Percent
		MPA-087	Finding Percent Increase and Decrease
		MPA-088	Solving Real-World Problems Involving Percent
		MPA-126	Solving Real-World Problems Involving Sales Tax
		MPA-127	Solving Real-World Problems Involving Discounts
		MPA-128	Solving Real-World Problems Involving Simple Interest
8.N.5	Estimate a percent of quantity, given an application	MPA-083	Finding Number Given Percent and Total
8.N.6	Justify the reasonableness of answers using estimation	MPA-004	Using Rounding to Estimate
		MPA-005	Estimating Products and Quotients Using Patterns
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-017	Rounding Decimals and Estimating Computations Using Decimals
		MPA-023	Rounding Quotients Involving Decimals
		MPA-033	Estimating Computations with Fractions and Mixed Numbers
		MPA-133	Distinguishing Between Exact and Approximate Answers
ALGEBRA			
8.A.1	Translate verbal sentences into algebraic inequalities	HA1-105	Translating Word Statements into Inequalities
8.A.2	Write verbal expressions that match given mathematical expressions	HA1-095	Translating Word Phrases into Algebraic Expressions
8.A.3	Describe a situation involving relationships that matches a given graph	MPA-142	Solving Problems with linear Functions
8.A.4	Create a graph given a description or an expression for a situation involving a linear or nonlinear relationship	MPA-102	Graphing Equations by Plotting Points
		MPA-109	Solving and Graphing Linear Inequalities on a Number Line
		HA1-380	Graphing Linear Equations

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		HA1-892	Data Analysis Using the Graphing Calculator
8.A.5	Use physical models to perform operations with polynomials	MPA-118	Modeling Integer Arithmetic Using Algebra Tiles
		HA1-220	Identifying and Multiplying Monomials
8.A.6	Multiply and divide monomials	HA1-220	Identifying and Multiplying Monomials
		HA1-225	Dividing Monomials and Simplifying Expressions Having an Exponent of Zero
		HA1-230	Raising a Monomial or Quotient of Monomials to a Power
8.A.7	Add and subtract polynomials (integer coefficients)	HA1-240	Identifying the Degree of Polynomials and Simplifying by Combining Like Terms
		HA1-245	Adding and Subtracting Polynomials
8.A.8	Multiply a binomial by a monomial or a binomial (integer coefficients)	HA1-920	Simplifying Algebraic Expressions Using the Distributive Property
		HA1-255	Multiplying Two Binomials Using the FOIL Method
		HA1-260	Squaring a Binomial and Finding the Product of a Sum and Difference
8.A.9	Divide a polynomial by a monomial (integer coefficients) Note: The degree of the denominator is less than or equal to the degree of the numerator for all variables.	HA1-355	Dividing Polynomials
		HA1-863	Dividing Polynomials Using Long Division
8.A.10	Factor algebraic expressions using the GCF	HA1-270	Factoring the Greatest Common Monomial Factor from a Polynomial
8.A.11	Factor a trinomial in the form $ax^2 + bx + c$; $a=1$ and c having no more than three sets of factors	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
		HA1-290	Factoring $ax^2 + bx + c$
8.A.12	Apply algebra to determine the measure of angles formed by or contained in parallel lines cut by a transversal and by intersecting lines	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.A.13	Solve multi-step inequalities and graph the solution set on a number line	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
8.A.14	Solve linear inequalities by combining like terms, using the distributive property, or moving variables to one side of the inequality (include multiplication or division of inequalities by a negative number)	HA1-195	Solving Inequalities Using More Than One Property
8.A.15	Understand that numerical information can be represented in multiple ways: arithmetically, algebraically, and graphically	Throughout	
8.A.16	Find a set of ordered pairs to satisfy a given linear numerical pattern (expressed algebraically); then plot the ordered pairs and draw the line	HA1-375	Identifying Solutions of Equations in Two Variables
		HA1-380	Graphing Linear Equations
8.A.17	Define and use correct terminology when referring to function (domain and range)	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
		HA1-439	Using Function Notation
8.A.18	Determine if a relation is a function	HA1-437	Identifying Relations as Functions
8.A.19	Interpret multiple representations using equation, table of values, and graph	MPA-102	Graphing Equations by Plotting Points
		MPA-103	Distinguishing Between Relations and Functions
		MPA-135	Determining the Slope of a Line
		MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		MPA-104	Recognizing Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models

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		HA1-402	Translating Among Multiple Representations of Functions
GEOMETRY			
8.G.0	Construct the following, using a straight edge and compass: <ul style="list-style-type: none"> • segment congruent to a segment • angle congruent to an angle • perpendicular bisector • angle bisector 	HGM-010	Measuring and Drawing Segments
		HGM-015	Measuring and Drawing Rays and Angles
8.G.1	Identify pairs of vertical angles as congruent	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.G.2	Identify pairs of supplementary and complementary angles	MPA-057	Identifying and Applying Supplementary and Complementary Angles
8.G.3	Calculate the missing angle in a supplementary or complementary pair	MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.G.4	Determine angle pair relationships when given two parallel lines cut by a transversal	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.G.5	Calculate the missing angle measurements when given two parallel lines cut by a transversal	MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.G.6	Calculate the missing angle measurements when given two intersecting lines and an angle	MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
8.G.7	Describe and identify transformations in the plane, using proper function notation (rotations, reflections, translations, and dilations)	MPA-180	Examining Line and Rotational Symmetry
		MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		MPA-120	Applying Dilations in the Coordinate Plane
8.G.8	Draw the image of a figure under rotations of 90 and 180 degrees	MPA-180	Examining Line and Rotational Symmetry
8.G.9	Draw the image of a figure under a reflection over a given line	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
8.G.10	Draw the image of a figure under a translation	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
8.G.11	Draw the image of a figure under a dilation	MPA-120	Applying Dilations in the Coordinate Plane
8.G.12	Identify the properties preserved and not preserved under a reflection, rotation, translation, and dilation	MPA-180	Examining Line and Rotational Symmetry
		MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		MPA-120	Applying Dilations in the Coordinate Plane
8.G.13	Determine the slope of a line from a graph and explain the meaning of slope as a constant rate of change	MPA-135	Determining the Slope of a Line
8.G.14	Determine the y-intercept of a line from a graph and be able to explain the y-intercept	MPA-140	Examining Linear Equations in Slope-Intercept Form
8.G.15	Graph a line using a table of values	HA1-380	Graphing Linear Equations
8.G.16	Determine the equation of a line given the slope and the y-intercept	MPA-140	Examining Linear Equations in Slope-Intercept Form
8.G.17	Graph a line from an equation in slope-intercept form	MPA-140	Examining Linear Equations in Slope-Intercept Form
		MPA-142	Solving Problems With Linear Functions and Direct Variation
8.G.18	Solve systems of equations graphically (only linear, integral solutions, format, no vertical/horizontal lines)	HA1-455	Solving Systems of Linear Equations by Graphing
8.G.19	Graph the solution set of an inequality on a number line	HA1-180	Graphing Equations and Inequalities on the Number Line
8.G.20	Distinguish between linear and nonlinear equations $ax^2 + bx + c$; $a=1$ (only graphically)	MPA-150	Identifying and Graphing Linear and Nonlinear Functions
8.G.21	Recognize the characteristics of quadratics in tables, graphs, equations, and situations	HA1-291	Factoring Quadratic Equations Using the Graphing Calculator
		HA1-525	Solving Quadratic Equations Involving Perfect Square Expressions
		HA1-530	Solving Quadratic Equations by Completing the Square
		HA1-535	Developing the Quadratic Formula and Using it to Solve Equations
		HA1-536	Solving Quadratic Equations Using the Graphing Calculator
MEASUREMENT			
8.M.1	Solve equations/proportions to convert to equivalent measurements	MM1-605	Converting Fahrenheit and Celsius

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	within metric and customary measurement systems Note: Also allow Fahrenheit to Celsius and vice versa.		
		MPA-062	Converting Units in Customary System
		MPA-061	Converting Metric Units of Length, Capacity, and Mass

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the New York Mathematics Core Curriculum MST Standard 3 Pre-kindergarten - Grade 12 document adopted by the New York State Board of Regents and revised in March 2005.