



## 8th Grade Correlation to Mathematics Content Standards

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
<b>NUMBER AND OPERATIONS</b>			
8.N.1.1	Sort numbers by their properties (e.g., prime, composite, square, square root).	HA1-020	Classifying Numbers into Subsets of Real Numbers
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-265	Writing a Number in Prime Factorization & Finding the Greatest Common Factor
		HA1-480	Finding the Square Roots of Rational Numbers
8.N.1.2	Demonstrate the magnitude of rational numbers (e.g., trillions to millions).	MPA-001	Identify, Compare, and Order Whole Numbers through Billions
8.N.2.1	Use real number properties (e.g., commutative, associative, distributive) to perform various computational procedures.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
8.N.2.2	Perform arithmetic operations and their inverses (e.g., addition/subtraction, multiplication/division, square roots of perfect squares, cube roots of perfect cubes) on real numbers.	HA1-035	Adding Real Numbers on a Number Line
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-480	Finding the Square Roots of Rational Numbers
		HA1-492	Simplifying Square and Cube Roots
8.N.2.3	Find roots of real numbers using calculators.	MPA-065	Estimating Square Roots
8.N.3.1	Formulate algebraic expressions that include real numbers to describe and solve real-world problems.	MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-041	Writing Simple Algebraic Expressions from Phrases
8.N.3.2	Use a variety of computational methods to estimate quantities involving real numbers.	MPA-004	Use Rounding to Estimate
		MPA-005	Estimate Products and Quotients Using Patterns
		MPA-017	Round Decimals and Estimate Computations Using Decimals
		MPA-033	Estimate Computations With Fractions and Mixed Numbers
8.N.3.3	Differentiate between rational and irrational numbers.	MPA-124	Classifying Numbers in the Real Number System
8.N.3.4	Use real number properties to perform various computational procedures and explain how they were used.	HA1-076	Basic Distributive Property
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
8.N.3.5	Perform and explain computations with rational numbers, pi, and first-degree algebraic expressions in one variable in a variety of situations.	HA1-003	Order of Operations
		HA1-035	Adding Real Numbers Using a Number Line
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers

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		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
		HA1-060	Evaluating Numerical Expressions Using the Order of Operations
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-070	Evaluating Formulas for Given Values of the Variables
		HA1-075	Simplifying Algebraic Expressions by Combining Like Terms
		HA1-079	Using a Concrete Model to Simplify Algebraic Expressions
		HA1-080	Simplifying and Evaluating Algebraic Expressions Containing Grouping Symbols
		HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-090	Simplifying Expressions Using the Property of -1
		HA1-115	Using the Addition and Subtraction Properties for Equations
		HA1-120	Using the Multiplication and Division Properties for Equations
		HA1-124	Using a Concrete Model to Solve One- and Two-Step Equations
		HA1-125	Solving Equations Using More Than One Property
		HA1-140	Solving Equations by Combining Like Terms
		HA1-144	Using a Concrete Model to Solve Equations with Variables on Both Sides
8.N.3.6	Select and use appropriate forms of rational numbers to solve real-world problems including those involving proportional relationships.	MPA-080	Solving Proportions
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps
8.N.3.7	Approximate, mentally and with calculators, the value of irrational numbers as they arise from problem situations.	MPA-124	Classifying Numbers in the Real Number System
8.N.3.8	Express numbers in scientific notation (including negative exponents) in appropriate problem situations using a calculator.	HA1-235	Applying Scientific Notation
8.N.3.9	Estimate answers and use formulas to solve application problems involving surface area and volume.	HA1-070	Evaluating Formulas for Given Values of the Variables
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
<b>ALGEBRA</b>			
8.A.1.1	Move between numerical, tabular, and graphical representations of linear relationships.	MPA-140	Examining Linear Equations in Slope-Intercept Form
		HA1-402	Translating Among Multiple Representations of Functions
8.A.1.2	Use variables to generalize patterns and information presented in tables, charts, and graphs: · graph linear functions noting that the vertical change per unit of horizontal change (the slope of the graph) is always the same · plot the values of quantities whose ratios are always the same, fit a line to the plot, and understand that the slope of the line equals the quantities	MPA-135	Determining the Slope of a Line
		MPA-140	Examining Linear Equations in Slope-Intercept Form
8.A.2.1	Demonstrate the difference between an equation and an expression.	HA1-005	Evaluating Algebraic Expressions
		HA1-104	Translating Word Statements into Equations
8.A.2.2	Solve two-step linear equations and inequalities in one variable with rational solutions.	MPA-100	Solving Two-Step Equations with Positive Coefficients (Future release)
		MPA-165	Solving Two-Step Equations with Negative Coefficients (Future release)
		MPA-101	Solving Two-Step Equations by Combining Like Terms (Future release)
		MPA-170	Solving Two-Step Equations Using the Distributive Property (Future release)
		MPA-175	Solving Equations with Variables on Both Sides (Future release)
		MPA-109	Solving and Graphing Linear Inequalities on a Number Line
8.A.2.3	Evaluate formulas using substitution.	MPA-077	Solving Problems Using a Formula

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8.A.2.4	Demonstrate understanding of the relationships between ratios, proportions, and percents and solve for a missing term in a proportion.	MM1-360	Expressing Percent as a Ratio
		MPA-078	Expressing Ratios as Fractions and Determining Equivalency
		MPA-079	Unit rates
		MPA-080	Solving Proportions
8.A.2.5	Graph solution sets of linear equations in two variables on the coordinate plane.	HA1-100	Finding Solution Sets of Open Sentences from Given Replacement Sets
		HA1-375	Identifying Solutions of Equations in Two Variables
		HA1-380	Graphing Linear Equations
8.A.2.6	Formulate and solve problems involving simple linear relationships, find percents of a given number, variable situations, and unknown quantities.	MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-118	Modeling Integer Arithmetic Using Algebra Tiles
		MPA-083	Finding Number Given Percent and Total
		MPA-084	Finding Percent Given Number and Total
		MPA-085	Finding Total Given Number and Percent
		MPA-086	Solving Problems Using Percent
		MPA-087	Finding Percent Increase and Decrease
		MPA-126	Solving Real-World Problems Involving Sales Tax
		MPA-127	Solving Real-World Problems Involving Discounts, Markup, and Commission
		MPA-128	Solving Real-World Problems Involving Simple and Compound Interest
		MM1-635	Calculating Distance, Rate, or Time by Solving Equations
		MM1-640	Solving Algebraic Word Problems
8.A.2.7	Use symbols, variables, expressions, inequalities, equations, and simple systems of equations to represent problem situations that involve variables or unknown quantities.	HA1-104	Translating Word Statements into Equations
		HA1-105	Translating Word Statements into Inequalities
		MPA-041	Writing Simple Algebraic Expressions from Phrases
		MPA-014	Evaluating Expressions for Given Variables
		Throughout	
8.A.3.1	Generate different representations to model a specific numerical relationship given one representation of data (e.g., a table, a graph, an equation, a verbal description).	MPA-125	Formulating a Possible Problem Situation Given an Equation
		MPA-118	Modeling Integer Arithmetic Using Algebra Tiles
		HA1-402	Translating Among Multiple Representations of Functions
8.A.4.1	Use graphs, tables, and algebraic representations to make predictions and solve problems that involve change.	MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-270	Generating Algebraic Expressions from Patterns of Models
8.A.4.2	Estimate, find, and justify solutions to problems that involve change using tables, graphs, and algebraic expressions.	MPA-142	Solving Problems With Linear Functions and Direct Variation
		MPA-150	Identifying and Graphing Linear and Nonlinear Functions
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-270	Generating Algebraic Expressions from Patterns of Models
8.A.4.3	Use appropriate problem-solving strategies (e.g., drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table or graph, working a simpler problem, writing an algebraic expression or working backward) to solve problems that involve change.	MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-003	Using Four-Step Plan for Problem Solving

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		MPA-007	Solving Problems Using Logical Reasoning Skills
		MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
		MM1-195	Identifying the Mathematical Question Given in a Word Problem
		MM1-355	Solving Multiple-Step Problems
8.A.4.4	Solve multi-step problems that involve changes in rate, average speed, distance, and time.	MM1-635	Calculating Distance, Rate, or Time by Solving Equations
8.A.4.5	Analyze problems that involve change by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing, and observing patterns.	MPA-104	Recognizing Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
		MM1-425	Classifying Information from a Mathematical Story
8.A.4.6	Generalize a pattern of change using algebra and show the relationship among the equation, graph, and table of values.	MPA-270	Generating Algebraic Expressions from Patterns of Models
8.A.4.7	Recognize the same general pattern of change presented in different representations.	MPA-104	Recognizing Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
<b>GEOMETRY</b>			
8.G.1.1	Recognize, classify, and discuss properties of all geometric figures including point, line, and plane.	MM1-455	Identifying Basic Terms Used in Geometry
		MM1-460	Measuring and Classifying Angles
		MM1-465	Naming and Classifying Polygons by Characteristics
8.G.1.2	Identify arc, chord, and semicircle and explain their attributes.	HA1-890	Using Models to Derive Formulas for Two-Dimension Figures
8.G.1.3	Use the Pythagorean theorem and its converse to find the missing side of a right triangle and the lengths of the other line segments.	MPA-066	Solving Problems Using the Pythagorean Theorem
8.G.2.1	Represent, formulate, and solve distance and geometry problems using the language and symbols of algebra and the coordinate plane and space (e.g., ordered triplets).	HA1-520	Finding the Distance Between Two Points on a Cartesian Plane
8.G.3.1	Describe the symmetry of three-dimensional figures.	MPA-072	Identifying 3-D Figures
		MPA-180	Examining Line and Rotational Symmetry
8.G.3.2	Describe and perform single and multiple transformations that include rotation, reflection, translation, and dilation (i.e., shrink or magnify) to two-dimensional figures.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
8.G.4.1	Understand angle relationships formed by parallel lines cut by a transversal.	MPA-105	Determine the Measure of Angles Made by Parallel Lines and a Transversal
8.G.4.2	Recognize and apply properties of corresponding parts of similar and congruent triangles and quadrilaterals.	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		MM1-470	Using Ratios to Identify Similar Figures
		MM1-475	Using Proportions to Solve for Unknown Lengths of Sides of Similar Figures
8.G.4.3	Represent and solve problems relating to size, shape, area, and volume using geometric models.	MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-071	Finding the Area of a Circle
		MPA-068	Finding the Area of Irregular Figures
		MPA-072	Identifying 3-D Figures
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures

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8.G.4.4	Develop and use formulas for area, perimeter, circumference, and volume.	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		MPA-055	Finding the Perimeter of a Figure
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
		MPA-068	Finding the Area of Irregular Figures
		MPA-072	Identifying 3-D Figures
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
8.G.4.5	Construct two-dimensional patterns for three-dimensional models (e.g., cylinders, prisms, cones).	HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
		MPA-106	Identify a Solid Figure From a Net
<b>MEASUREMENT</b>			
8.M.1.1	Understand the concept of volume and use the appropriate units in common measuring systems (e.g., cubic centimeter, cubic inch, cubic yard) to compute the volume of rectangular solids.	MPA-072	Identifying 3-D Figures
		MPA-106	Identifying a Solid Figure From a Net
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-075	Finding the Volume of Rectangular Prisms
		MPA-076	Finding the Volume of Cylinders
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
8.M.1.2	Use changes in measurement units (e.g., square inches, cubic feet) to perform conversions from one-, two-, and three-dimensional shapes.	MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
8.M.2.1	Use ratios and proportions to measure hard-to-measure objects.	MM1-475	Using Proportions to Solve for Unknown Lengths of Sides of Similar Figures
8.M.2.2	Use estimation to solve problems.	MM1-475	Using Proportions to Solve for Unknown Lengths of Sides of Similar Figures
8.M.2.3	Use proportional relationships in similar shapes to find missing measurements.	MM1-475	Using Proportions to Solve for Unknown Lengths of Sides of Similar Figures
8.M.2.4	Apply strategies to determine the surface area and volume of prisms, pyramids, and 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
8.M.2.5	Perform conversions with multiple terms between metric and U.S. standard measurement systems.	MPA-063	Converting Units Between Metric and Customary System
8.M.2.6	Estimate volume in cubic units.	MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
8.M.2.7	Solve simple problems involving rates and derived measurements for such properties as velocity and density.	MPA-155	Comparing and Converting Rates
		HA1-135	Evaluating Formulas
<b>DATA ANALYSIS AND PROBABILITY</b>			
8.D.1.1	Represent two numerical variables on a plot, describe how the data points are distributed, and identify relationships that exist between the two variables.	MPA-132	Interpreting and Creating Scatterplots
8.D.1.2	Generate, organize, and interpret real numbers in a variety of situations.	MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
		MPA-094	Interpreting and Constructing Line Plots

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		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
8.D.1.3	Organize, analyze, and display appropriate quantitative and qualitative data to address specific questions including:		
	· frequency distributions	MPA-129	Choosing Appropriate Scales and Intervals for Data
		HA1-545	Making a Frequency Distribution Table
	· plots	MPA-132	Interpreting and Creating Scatterplots
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
	· histograms	MPA-131	Interpreting and Creating Histograms
	· bar, line, and pie graphs	MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
	· diagram and pictorial displays	MM1-435	Using Pictographs, Bar Graphs and Line Graphs to Solve Problems
	· charts and tables	MPA-129	Choosing Appropriate Scales and Intervals for Data
8.D.1.4	Select the appropriate measure of central tendency to describe a set of data for a particular problem situation.	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
8.D.1.5	Simulate an event selecting and using different models.	HA1-560	Determining probability of an event and compl. event from a random experiment
8.D.1.6	Develop an appropriate strategy using a variety of data from surveys, samplings, estimations, and inferences to address a specific problem.	MM1-385	Data collection
8.D.2.1	Use changes in scales, intervals, or categories to help support a particular interpretation of data.	MPA-129	Choosing Appropriate Scales and Intervals for Data
8.D.2.2	Generate, organize, and interpret real number and other data in a variety of situations.	HA1-545	Making a Frequency Distribution Table
8.D.2.3	Analyze data to make decisions and to develop convincing arguments from data displayed in a variety of formats that include:		
	· plots	MPA-132	Interpreting and Creating Scatterplots
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-097	Constructing Box-and-Whisker Plots
	· distributions	MPA-129	Choosing Appropriate Scales and Intervals for Data
		HA1-545	Making a Frequency Distribution Table
	· graphs	MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
	· scatter plots	MPA-132	Interpreting and Creating Scatterplots
	· diagrams	MM1-435	Using Pictographs, Bar Graphs and Line Graphs to Solve Problems
	· pictorial displays	MM1-435	Using Pictographs, Bar Graphs and Line Graphs to Solve Problems
	· charts and tables	HA1-545	Making a Frequency Distribution Table
	· Venn diagrams	HA1-886	Unions and Intersections of Sets Using Venn Diagrams
8.D.2.4	Interpret and analyze data from graphical representations and draw simple conclusions (e.g., line of best fit).	MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
8.D.2.5	Evaluate and defend the reasonableness of conclusions drawn from data analysis.	MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
8.D.2.6	Use appropriate central tendency and spread as a means for effective decision-making in analyzing data and outliers.	HA1-541	Finding the mean, median and mode from data and frequency distribution tables
8.D.2.7	Identify simple graphic misrepresentations and distortions of sets of data (e.g., unequal interval sizes, omission of parts of axis range, scaling).	MPA-099	Recognize misleading statistics and graphs

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8.D.2.8	Use appropriate technology to display data as lists, tables, matrices, graphs, and plots and to analyze the relationships of variables in the data displayed.	HA1-892	Data analysis using the graphing calculator
8.D.3.1	Describe how changes in scale, intervals, or categories influence arguments for a particular interpretation of the data.	MPA-099	Recognizing Misleading Statistics and Graphs
8.D.3.2	Describe how reader bias, measurement errors, and display distortion can affect the interpretation of data, predictions, and inferences based on data.	MPA-099	Recognizing Misleading Statistics and Graphs
8.D.3.3	Conduct simple experiments and/or simulations, record results in charts, tables, or graphs, and use the results to draw conclusions and make predictions.	HA1-877	Drawing inferences and making predictions from tables and graphs
	Compare expected results with experimental results and information used in predictions and inferences.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
8.D.4.1	Calculate the odds of a desired outcome in a simple experiment.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
8.D.4.2	Design and use an appropriate simulation to estimate the probability of a real-world event (e.g., disk toss, cube toss).	MPA-090	Finding the Probability of Simple Real-Life Events
8.D.4.3	Explain the relationship between probability and odds and calculate the odds of a desired outcome in a simple experiment.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
8.D.4.4	Use theoretical or experimental probability to make predictions about real-world events.	MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
8.D.4.5	Use probability to generate convincing arguments, draw conclusions, and make decisions in a variety of situations.	MPA-113	Finding the Probability of Compound Events Through Experimentation
8.D.4.6	Understand that the probability of two unrelated events occurring is the sum of the two individual possibilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.	MPA-113	Finding the Probability of Compound Events Through Experimentation

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the New Mexico Grade 8 Mathematics Standards document adopted by the New Mexico State Board of Education in June 2002 and reformatted in January 2008.