



Correlation to 8th Grade Core Content for Assessment

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
Number Properties and Operations			
*MA-08-1.1.1	Students will provide examples of and identify rational numbers and irrational numbers (square roots and π only).	MPA-064	Finding Square Roots of Perfect Squares
		MPA-065	Estimating Square Roots
		MPA-124	Classifying Numbers in the Real Number System
MA-08-1.1.2	Students will describe and provide examples of representations of numbers (rational, square roots, and π) and operations in a variety of equivalent forms using models, diagrams and symbols (e.g., number lines, 10 by 10 grids, rectangular arrays, number sentences) based on real-world and mathematical problems.	MPA-064	Finding Square Roots of Perfect Squares
		MPA-065	Estimating Square Roots
		MPA-124	Classifying Numbers in the Real Number System
		MM1-565	Finding Squares and Square Roots
		MPA-045	Comparing and Ordering Integers
		MPA-044	Finding Opposite and Absolute Values of Integers
		HA1-015	Graphing Real Numbers Using a Number Line
		HA1-025	Comparing and Ordering Real Numbers
*MA-08-1.1.3	Students will convert, compare and order multiple numerical representations (e.g., fractions, decimals, percentages) of rational numbers and irrational numbers (square roots and π only).	MPA-064	Finding Square Roots of Perfect Squares
		MPA-065	Estimating Square Roots
		MPA-124	Classifying Numbers in the Real Number System
		MM1-565	Finding Squares and Square Roots
		MPA-045	Comparing and Ordering Integers
		MPA-044	Finding Opposite and Absolute Values of Integers
		HA1-015	Graphing Real Numbers Using a Number Line
		HA1-025	Comparing and Ordering Real Numbers
*MA-08-1.2.1	Students will estimate to solve real-world and mathematical problems with rational numbers, checking for reasonable and appropriate computational results.	MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		MPA-005	Estimating Products and Quotients Using Patterns
		MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards
		MPA-007	Solving Problems Using Logical Reasoning Skills
		MPA-021	Converting Between Standard and Scientific Notation
*MA-08-1.3.1	Students will add, subtract, multiply and divide rational numbers to solve real-world problems and apply order of operations (including positive whole number exponents) to simplify numerical expressions.	HA1-003	Order of Operations
		HA1-040	The Addition Rule for Real Numbers

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		HA1-045	Subtracting Real Numbers
		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
		HA1-860	Using the Laws of Exponents
		HA1-235	Writing, Multiplying, and Dividing Numbers Written in Scientific Notation
MA-08-1.3.2	Students will explain how operations (additions and subtraction; multiplication and division; squaring and taking the square root of a number) are inversely related.	HA1-030	Using Opposites and Absolute Values
		HA1-040	The Addition Rule for Real Numbers
		HA1-045	Subtracting Real Numbers
		HA1-050	Multiplying Real Numbers
		HA1-055	Dividing Real Numbers
		HA1-062	Adding, Subtracting, Multiplying, and Dividing Real Numbers
		MM1-565	Finding Squares and Square Roots
		HA1-480	Finding the Square Roots of Rational Numbers
*MA-08-1.4.1	Students will apply ratios and proportional reasoning to solve real-world problems (e.g., percents, constant rate of change, unit pricing, percent of increase or decrease).	MPA-078	Expressing Ratios as Fractions and Determining Equivalency
		MPA-079	Unit rates
		MPA-080	Solving Proportions
		MPA-087	Finding Percent Increase and Decrease
*MA-08-1.5.2	Students will identify the use of properties (the commutative properties of addition and multiplication, the associative properties of addition and multiplication, the identity properties for addition and multiplication, inverse properties and the distributive property of multiplication over addition and subtraction) to justify a given step in solving problems.	HA1-085	Simplifying Expressions Using the Properties of Real Numbers
		HA1-076	Basic Distributive Property
Measurement			
*MA-08-2.1.1	Students will measure lengths (to the nearest sixteenth of an inch or the nearest millimeter) and will determine and use in real-world or mathematical problems:		
	• area and perimeter of triangles and quadrilaterals;	MPA-055	Finding the Perimeter of a Figure
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Rectangles and Parallelograms
	• area and circumference of circles;	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
	• area and perimeter of compound figures composed of triangles, quadrilaterals and circles;	MPA-069	Finding the Area of Rectangles and Parallelograms
		HA1-890	Using Models to Derive Formulas for Two-Dimensional Geometric Figures
	• area from circumference or perimeter and	MPA-055	Finding the Perimeter of a Figure
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Rectangles and Parallelograms
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
	• circumference or perimeter from area.	MPA-055	Finding the Perimeter of a Figure
		MPA-067	Finding the Area of Rectangles and Parallelograms
		MPA-069	Finding the Area of Rectangles and Parallelograms
		MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle

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MA-08-2.1.2	Students will estimate measurements in standard units in real-world and mathematical problems.	MM1-515	Defining a Circle
		MPA-068	Finding the Area of Irregular Figures
*MA-08-2.1.3	Students will evaluate the measures of angles by estimation, measurement with a protractor or angle ruler and determine angle measures in mathematical and/or real-world situations (e.g., supplementary, external, vertical).	MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
*MA-08-2.1.4	Students will apply formulas to determine the volume of right rectangular prisms in real-world problems.	MPA-075	Finding the Volume of Rectangular Prisms
		HA1-891	Using Models to Derive Formulas for Three-Dimensional Solids
MA-08-2.1.5	Students will use formulas to find surface area of right rectangular prisms in real-world and mathematical problems.	MPA-106	Identifying a Solid Figure From a Net
		MPA-073	Finding the Surface Area of Rectangular Prisms
*MA-08-2.1.6	Students will apply the Pythagorean theorem to determine the length of a hypotenuse.	MPA-066	Solving Problems Using the Pythagorean Theorem
		HA1-516	Applications of the Pythagorean Theorem
*MA-08-2.2.1	Students will convert units within the same measurement system and use these units to solve real-world problems.	MPA-062	Converting Units in Customary System
		MPA-061	Converting Metric Units of Length, Capacity, and Mass
Geometry			
MA-08-3.1.1	Students will describe and provide examples of, basic geometric elements that include points, segments, rays, lines, angles and planes and will use these elements in real-world and mathematical problems.	MPA-056	Classifying Angles
		MPA-057	Identifying and Applying Supplementary and Complementary Angles
		MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal
		<i>New lesson in development</i>	<i>HGM-010 Measuring and Drawing Segments (Future Release)</i>
		<i>New lesson in development</i>	<i>HGM-015 Measuring and Drawing Rays and Angles (Future Release)</i>
*MA-08-3.1.2	Students will identify and compare properties of two-dimensional figures (circles, triangles acute, right, obtuse, scalene, isosceles, equilateral], quadrilaterals [square, rectangle, rhombus, parallelogram, trapezoid], regular/irregular polygons) and will apply these properties and figures to solve real-world and mathematical problems.	MPA-058	Identifying Polygons
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
		MPA-060	Determining Which Figures Tessellate
*MA-08-3.1.3	Students will compare properties of three-dimensional figures (spheres, cones, cylinders, prisms, pyramids) and will apply these properties and figures to solve real-world and mathematical problems.	MPA-072	Identifying 3-D Figures
		MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
		MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models
		MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
*MA-08-3.1.4	Students will:		
	· provide examples of congruent and similar figures;	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
	· apply congruent and similar figures to solve real-world and mathematical problems and	MM1-470	Using Ratios to Identify Similar Figures
	· apply proportional reasoning to solve problems involving scale drawings and proportional figures.	MM1-475	Using Proportions to Solve for Unknown Lengths of Sides of Similar Figures
		MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps

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MA-08-3.2.1	Students will describe, provide examples of and apply to real-world and mathematical problems rotational symmetry (90°, 180°, 360°).	<i>New lesson in development</i>	<i>MPA-180 Line and Rotational Symmetry (Future release)</i>
*MA-08-3.2.2	Students will transform (translations, reflections and dilations with the center of dilation at the origin) figures in a coordinate plane and determine the new coordinates of the image after the transformation.	MPA-108	Graphing Translations and Reflections on the Coordinate Plane
		MPA-120	Applying Dilations in the Coordinate Plane
MA-08-3.2.3	Students will identify rotations (clockwise or counterclockwise) of figures about the origin in a coordinate plane.	<i>New lesson in development</i>	<i>MPA-180 Line and Rotational Symmetry (Future release)</i>
*MA-08-3.3.1	Students will identify and graph ordered pairs on a coordinate system, correctly identifying the origin, axes and ordered pairs; and will apply graphing in the coordinate system to solve real-world and mathematical problems.	MPA-046	Graphing Points on a Coordinate Plane
Data Analysis and Probability			
*MA-08-4.1.1	Students will analyze and make inferences from data displays (drawings, tables/charts, pictographs, bar graphs, circle graphs, line plots, Venn diagrams, line graphs, stem-and-leaf plots, scatter plots, histograms, box-and-whiskers plots).	MM1-390	Understanding Data in Bar Graphs, Line Graphs, and Stem-and-Leaf Plots
		MM1-400	Interpreting Double Bar Graphs
		MM1-405	Interpreting and Constructing Circle Graphs
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
		MM1-425	Classifying Information from a Mathematical Story (using tables)
		MM1-430	Using Graphs to Solve Story Problems (choose most appropriate data display)
		MM1-435	Using Pictographs, Bar Graphs and Line Graphs to Solve Problems
		MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs
MA-08-4.1.2	Students will explain how different representations of data (e.g., tables, graphs, diagrams, plots) are related.	MM1-430	Using Graphs to Solve Story Problems (choose most appropriate data display)
		MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
		MPA-099	Recognizing Misleading Statistics and Graphs
		MPA-840	Interpreting Data (Future Release)
*MA-08-4.1.4	Students will:		
	• construct data displays (Venn diagrams, tables, line graphs, stem-and-leaf plots, circle graphs, scatter plots);	HA1-886	Unions and Intersections of Sets Using Venn Diagrams
		MPA-094	Interpreting and Constructing Line Plots
		MPA-096	Constructing Stem-and-Leaf Plots
		MPA-131	Interpreting and Creating Histograms
		MPA-132	Interpreting and Creating Scatterplots
	• explain why the type of display is appropriate for the data and	MPA-098	Making Predictions from Graphs and Choosing the Correct Graph
	• explain how misleading representations affect interpretations and conclusions about data (e.g., changing the scale on a graph).	MPA-099	Recognizing Misleading Statistics and Graphs
MA-08-4.1.5	Students will construct box-and-whiskers plots.	MPA-097	Constructing Box-and-Whisker Plots
*MA-08-4.2.1	Students will:		
	• determine the mean, median, mode and range of a set of data;	HA1-540	Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables
	• identify clusters, gaps and outliers and	HA1-541	Analyzing Data Using the Measures of Central Tendency and the Range
	• apply these concepts to compare sets of data.	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
MA-08-4.3.1	Students will explain how data gathering, bias issues and faulty data analysis can affect the results of data collection	MM1-385	Collecting Data
		MPA-840	Interpreting Data (Future Release)
		<i>New lesson in development</i>	<i>HA1-542 Sampling and Bias (Future Release)</i>

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*MA-08-4.4.1	Students will apply counting techniques to determine the size of a sample space for a real-world or mathematical situation.	MPA-089	Using Tree Diagrams
		MPA-091	Finding the Number of Combinations of a Set of Objects
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
*MA-08-4.4.2	Students will:		
	· determine theoretical probabilities of events, including compound events (e.g. dependent, independent);	MPA-113	Finding the Probability of Compound Events Through Experimentation
		MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
	· determine probabilities based on the results of an experiment and	HA1-560	Determining Probability of an Event and Complementary Event from a Random Experiment
	· make inferences from probability data.	HA1-885	Histograms and the Normal Distribution
MA-08-4.4.3	Students will tabulate experimental results from simulations and explain how theoretical and experimental probabilities are related.	MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model
MA-08-4.4.4	Students will determine theoretical probabilities and represent them using area models.	<i>Content under Review</i>	
Algebraic Thinking			
MA-08-5.1.1	Students will use variables to describe numerical patterns based on arithmetic sequences in real-world and mathematical problems (e.g., $f(N) = 2N+3$).	HA1-447	Identifying Number Patterns
		HA1-448	Finding the nth Term of a Pattern
		MPA-270	Generating Algebraic Expressions from Patterns of Models (Future Release)
*MA-08-5.1.2	Students will represent, analyze and generalize simple first and second degree functional relationships using tables, graphs, words and algebraic notations and will apply the first degree relationships to solve real-world and mathematical problems.	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
*MA-08-5.1.5	Students will explain how the change in one variable affects the change in another variable (e.g., if rate remains constant, an increase in time results in an increase in distance).	HA1-436	Identifying Relations
		HA1-437	Identifying Relations as Functions
		HA1-438	Finding the Domain and Range of Functions
		HA1-450	Solving Problems Involving Direct Variation
*MA-08-5.2.1	Students will evaluate and simplify algebraic expressions applying the order of operations.	HA1-060	Evaluating Numerical Expressions Using the Order of Operations
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		HA1-076	Basic Distributive Property
MA-08-5.2.2	Students will describe, define and provide examples of variables and expressions with a missing value based on real-world and mathematical problems.	MPA-014	Evaluating Expressions for Given Variables
		MPA-077	Solving Problems Using a Formula
		HA1-005	Evaluating Algebraic Expressions
		HA1-065	Evaluating Expressions Containing Exponents
		MPA-270	Generating Algebraic Expressions from Patterns of Models (Future Release)
		MPA-125	Formulating a Possible Problem Situation Given an Equation
		HA1-104	Translating Word Statements into Equations
*MA-08-5.3.1	Students will model and solve single variable, first-degree real-world and mathematical problems (e.g., $5x+2 = x+22$, $x-4 < -60$).	MPA-009	Solving One-Step Equations Using a Box
		MPA-010	Solving One-Step Equations of Whole Numbers Using Addition and Subtraction
		MPA-011	Solving One-Step Equations of Whole Numbers Using Multiplication and Division
		MPA-012	Solving One-Step Equations of Whole Numbers Using All Operations

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		MPA-042	Solving Problems Using an Equation
		MPA-100	Solving Two-Step Equations
		MPA-101	Solving Equations by Combining Like Terms
		HA1-104	Translating Word Statements into Equations
		HA1-105	Translating Word Statements into Inequalities

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Eighth Grade Core Content for Assessment Version 4.1 for Kentucky Department of Education- Grade 8 document adopted by the Kentucky State Board of Education in August 2006.