



## 7<sup>th</sup> Grade Correlation to Mathematics Course of Study

	Mathematics Curriculum Framework	Lesson Number	Lesson Title
<b>NUMBER AND OPERATIONS</b>			
7.1	Demonstrate computational fluency with addition, subtraction, and multiplication of integers.	MPA-047	Adding Integers with Like Signs
		MPA-048	Adding Integers with Unlike Signs
		MPA-050	Subtracting Integers with Unlike Signs
		MPA-051	Multiplying Integers with Like and Unlike Signs
	<ul style="list-style-type: none"> <li>Developing algorithms for performing operations on integers. For example, determining a systematic set of steps that can be used to subtract integers.</li> </ul>	MPA-047	Adding Integers with Like Signs
		MPA-048	Adding Integers with Unlike Signs
		MPA-050	Subtracting Integers with Unlike Signs
		MPA-051	Multiplying Integers with Like and Unlike Signs
		MPA-052	Dividing Integers with Like and Unlike Signs
		MPA-053	Adding, Subtracting, Multiplying, and Dividing Integers
		MPA-117	Modeling Integer Arithmetic Using Cups and Counters
	<ul style="list-style-type: none"> <li>Using inverse properties of addition and of multiplication</li> </ul>	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
		MPA-054	Solving One-Step Equations with Integers Using all Four Operations
7.2	Use order of operations to evaluate numerical expressions.	HA1-003	Order of Operations
		MPA-008	Order of Operations
	<ul style="list-style-type: none"> <li>Computing absolute values</li> </ul>	MPA-044	Finding Opposite and Absolute Values of Integers
	<ul style="list-style-type: none"> <li>Finding square roots of perfect squares through 225</li> </ul>	MPA-064	Finding Square Roots of Perfect Squares
	<ul style="list-style-type: none"> <li>Evaluating powers</li> </ul>	MPA-013	Using Powers and Exponents in Expressions
	<ul style="list-style-type: none"> <li>Applying properties of operations to compute with integers, fractions, and decimals</li> </ul>	HA1-003	Order of Operations
		MPA-018	Adding and Subtracting Decimals
		MPA-019	Multiplying Decimals
		MPA-020	Multiplying Decimals by Powers of Ten
		MPA-022	Dividing Decimals
		MPA-034	Adding and Subtracting Fractions
		MPA-035	Adding and Subtracting Mixed Numbers with Unlike Denominators
		MPA-036	Multiplying Fractions and Mixed Numbers and Simplifying
		MPA-037	Dividing Fractions and Mixed Numbers and Simplifying
		MPA-047	Adding Integers with Like Signs
		MPA-048	Adding Integers with Unlike Signs
		MPA-050	Subtracting Integers with Unlike Signs
		MPA-051	Multiplying Integers with Like and Unlike Signs

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		MPA-052	Dividing Integers with Like and Unlike Signs
		MPA-053	Adding, Subtracting, Multiplying, and Dividing Integers
		MPA-119	Dividing Decimals (an Introduction)
7.3	Solve problems requiring the use of operations on rational numbers.	MPA-122	Modeling Multiplication and Division of Decimals
		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-038	Solving One-Step Equations with Fractions Using Addition and Subtraction
		MPA-039	Solving One-Step Equations with Fractions Using Multiplication and Division
		MPA-040	Solving One-Step Equations with Decimals Using All Four Operations
	<ul style="list-style-type: none"> <li>Describing the method used</li> <li>Determining the reasonableness of results</li> <li>Using percents to solve problems, including problems involving discounts, taxes, commissions, and simple interest</li> </ul>	Throughout	
		MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation
		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-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
<b>ALGEBRA</b>			
7.4	Express a pattern shown in a table, graph, or chart as an algebraic equation.	HA1-448	Finding the $n$ th Term of a Pattern
	<ul style="list-style-type: none"> <li>Recognizing the relationships between numerical patterns in tables and their respective graphs in the coordinate plane.</li> </ul>	HA1-447	Identifying Number Patterns
	<ul style="list-style-type: none"> <li>Determining if a constant rate of change exists in a pattern</li> </ul>	MPA-104	Recognizing Patterns
		MPA-104	Recognizing Patterns
		MPA-270	Generating Algebraic Expressions from Patterns of Models
7.5	Translate verbal phrases into algebraic expressions and algebraic expressions into verbal phrases.	MPA-041	Writing Simple Algebraic Expressions from Phrases
	<ul style="list-style-type: none"> <li>Exhibiting understanding of a variable as an unknown quantity</li> </ul>	HA1-005	Evaluating Algebraic Expressions
7.6	Solve one- and two-step equations.	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
		MPA-038	Solving One-Step Equations with Fractions Using Addition and Subtraction
		MPA-039	Solving One-Step Equations with Fractions Using Multiplication and Division
		MPA-040	Solving One-Step Equations with Decimals Using All Four Operations
		MPA-042	Solving Problems Using an Equation
		MPA-054	Solving One-Step Equations with Integers Using all Four Operations
		MPA-100	Solving Two-Step Equations
		MPA-101	Solving Equations by Combining Like Terms
	<ul style="list-style-type: none"> <li>Solving inequalities in one variable</li> </ul>	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
	<ul style="list-style-type: none"> <li>Graphing solution sets of inequalities on a number line</li> </ul>	MPA-109	Solving and Graphing Linear Inequalities on a Number Line
	<ul style="list-style-type: none"> <li>Recognizing properties of equality</li> </ul>	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
<b>GEOMETRY</b>			
7.7	Determine the transformation(s), including translations, reflections, or rotations, used to alter the position of a polygon on the coordinate	MM1-500	Using Translations, Rotations and Reflections to Transform Shapes

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	plane.		
	<ul style="list-style-type: none"> <li>Determining the type of symmetry (rotational or line) found in a reflection or rotation</li> </ul>	MPA-108 MPA-180	Graphing Translations and Reflections on the Coordinate Plane Examining Line and Rotational Symmetry (Future release)
	<ul style="list-style-type: none"> <li>Graphing transformations of quadrilaterals on the Cartesian plane by plotting the vertices</li> </ul>	MPA-108 MM1-500	Graphing Translations and Reflections on the Coordinate Plane Using Translations, Rotations and Reflections to Transform Shapes
	<ul style="list-style-type: none"> <li>Graphing figures which are similar to other figures using dilations</li> </ul>	MPA-108 MPA-120	Graphing Translations and Reflections on the Coordinate Plane Applying Dilations in the Coordinate Plane
7.8	Recognize geometric relationships among two-dimensional and three-dimensional objects.	MPA-058	Identifying Polygons
		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
	<ul style="list-style-type: none"> <li>Drawing geometric figures when given specified components, including base and height</li> </ul>	MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions
	<ul style="list-style-type: none"> <li>Investigating properties and relationships among congruent figures</li> </ul>	MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids
		MPA-121	Identifying Similar and Congruent Polygons Using Proportions
	<ul style="list-style-type: none"> <li>Identifying geometric ideas in settings outside the mathematics classroom. For example, recognizing Escher drawings as examples of tessellations, the geodesic dome as an example of triangulation, and architecture as an example of constructing three-dimensional shapes; identifying landscape design as an example of area.</li> </ul>	MPA-060	Determining Which Figures Tessellate
		Throughout	
	<ul style="list-style-type: none"> <li>Using networks to represent and solve problems. For example, find the number of paths from point A to point B in a diagram.</li> </ul>	MPA-089	Using Tree Diagrams (Problem Sets of the Day)
<b>MEASUREMENT</b>			
7.9	Solve problems involving circumference and area of circles.	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
	<ul style="list-style-type: none"> <li>Estimating circumference, diameter and area of circles</li> </ul>	MPA-070	Finding the Circumference of a Circle
	<ul style="list-style-type: none"> <li>Determining appropriate units of measure to describe circumference, diameter, and area</li> </ul>	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
	<ul style="list-style-type: none"> <li>Measuring circumference and diameter using customary and metric units</li> </ul>	MPA-070	Finding the Circumference of a Circle
	<ul style="list-style-type: none"> <li>Using circumference and diameter to approximate the value of <math>\pi</math></li> </ul>	MPA-070	Finding the Circumference of a Circle
	<ul style="list-style-type: none"> <li>Identifying <math>\pi</math> as an irrational number</li> </ul>	MPA-124	Classifying Numbers in the Real Number System
	<ul style="list-style-type: none"> <li>Developing formulas for determining circumference and area</li> </ul>	MPA-070	Finding the Circumference of a Circle
		MPA-071	Finding the Area of a Circle
7.10	Find the perimeter of polygons and the area of triangles and trapezoids.	MPA-055	Finding the Perimeter of a Figure
		MPA-160	Plotting Polygons and Finding the Area
		MPA-069	Finding the Area of Triangles and Trapezoids
	<ul style="list-style-type: none"> <li>Developing formulas for determining perimeter and area of triangles and trapezoids</li> </ul>	MPA-055	Finding the Perimeter of a Figure
		MPA-069	Finding the Area of Triangles and Trapezoids
		MPA-160	Plotting Polygons and Finding the Area
7.11	Solve problems involving ratios or rates, using proportional reasoning.	MPA-080	Solving Proportions

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	<ul style="list-style-type: none"> <li>Determining the unit rate</li> </ul>	MPA-121	Identifying Similar and Congruent Polygons Using Proportions
	<ul style="list-style-type: none"> <li>Converting rates from one unit to another. For example, determining the number of minutes in three days.</li> </ul>	MPA-079 MPA-061	Unit rates Converting Metric Units of Length, Capacity, and Mass
	<ul style="list-style-type: none"> <li>Converting units of length, weight, or capacity from metric to customary and from customary to metric</li> </ul>	MPA-062 MPA-063	Converting Units in Customary System Converting Units Between Metric and Customary System
<b>DATA ANALYSIS AND PROBABILITY</b>			
7.12	Determine measures of central tendency (mean, median, and mode) and the range using a given set of data or graphs, including histograms, frequency tables, and stem-and-leaf plots	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
		MPA-131	Interpreting and Creating Histograms
		MPA-095	Find the Mean, Median, and Mode
		MPA-096	Constructing Stem-and-Leaf Plots
	<ul style="list-style-type: none"> <li>Creating histograms</li> </ul>	MPA-131	Interpreting and Creating Histograms
7.13	Determine the probability of a compound event.	MPA-113	Finding the Probability of Compound Events Through Experimentation
	<ul style="list-style-type: none"> <li>Representing outcomes as a list, chart, picture, or tree diagram</li> </ul>	MPA-089	Using Tree Diagrams
		MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)
		MPA-113	Finding the Probability of Compound Events Through Experimentation
	<ul style="list-style-type: none"> <li>Determining the number of possible outcomes by using the fundamental counting principle or other techniques</li> </ul>	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)
	<ul style="list-style-type: none"> <li>Modeling the probability of events through simulations with random numbers. For example, determining the probability of a baby being a boy by generating random numbers, using a number cube with odd numbers representing a boy, to simulate the outcomes.</li> </ul>	MPA-113	Finding the Probability of Compound Events Through Experimentation (Problem Sets of the Day)

MM1-Fundamentals of Mathematics

MPA- Pre-Algebra

HA1-Algebra 1

Note: Standards were taken from the Alabama Course of Study for 6<sup>th</sup>-8<sup>th</sup> Grade document adopted by the Alabama State Board of Education in 2003.