



Alignment Document  
State of Maryland and Aventa Learning

**Math 7**

Strand	Common Curriculum Goal	Standard	Lesson Name	
1.0 Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.	1.A.1 Identify, describe, extend, and create linear patterns and functions	1.A.1.a Complete a function table with a given two-operation rule	Lesson 35: Functions, Graphs, and Linear Equations	
		1.A.1.b Identify and extend a geometric sequence	Lesson 34: Patterns	
		1.A.1.c Describe how a change in one variable in a linear function affects the other variable in a table of values		
	1.B.1 Write and evaluate expressions	1.B.1.a Write an algebraic expression to represent unknown quantities		Lesson 32: Number concept
			1.B.1.b Evaluate algebraic expressions	Lesson 33: Properties of Numbers and Variable Expressions
		1.B.1.c Evaluate numeric expressions using the order of operations	Lesson 3: Order of Operations	
		1.B.1.d Simplify algebraic expressions represented as physical models by combining like terms		
		1.B.2 Identify, write, solve, and apply equations and inequalities	1.B.2.a Write equations and inequalities to represent relationships	Lesson 35: Functions, Graphs, and Linear Equations Lesson 36: Inequalities
			1.B.2.b Determine the unknown in a linear equation	Lesson 33: Properties of Numbers and Variable Expressions



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		1.B.2.c Solve for the unknown in an inequality	Lesson 36: Inequalities
		1.B.2.d Identify or graph solutions of inequalities on a number line	Lesson 36: Inequalities
		1.B.2.e Apply given formulas to a problem solving situation	Lesson 23: Triangles Lesson 25: Perimeter and Area Lesson 26: Circles      Lesson 27: Volumes and Surface Areas
	1.C.1 Locate points on a number line and in a coordinate plane	1.C.1.a Represent rational numbers on a number line	Lesson 1: Integers
		1.C.1.b Graph ordered pairs in a coordinate plane	Lesson 35: Functions, Graphs, and Linear Equations
		1.C.1.c Graph linear equations with one operation in a coordinate plane	Lesson 35: Functions, Graphs, and Linear Equations
	1.C.2 Analyze linear relationships	1.C.2.a Identify and describe the change represented in a table of values	Lesson 35: Functions, Graphs, and Linear Equations
		1.C.2.b Describe the rate of change of a linear relationship by a table of values and a graph	



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2.0 Students will apply the properties of one-, two-, or three-dimensional geometric figures to describe, reason, or solve problems about shape, size, position, or motion of objects.	2.A.1 Analyze the properties of plane geometric figures	2.A.1.a Identify and describe angles formed by intersecting lines, line segments, and rays	Lesson 22: Lines and Angles	
		2.A.1.b Identify angles formed when two parallel lines are cut by a transversal	Lesson 22: Lines and Angles	
		2.A.1.c Identify the parts of right triangles	Lesson 23: Triangles	
	2.A.2 Analyze geometric relationships	2.A.2.a Determine a missing angle measurement using the sum of the interior angles of polygons.	Lesson 24: Quadrilaterals and Other Polygons	
		2.A.2.b Determine the measurements of angles formed by intersecting lines, line segments, and rays.	Lesson 22: Lines and Angles	
		2.A.2.c Describe the relationship between the legs and hypotenuse of right triangles	Lesson 23: Triangles	
	2.C.1 Represent plane geometric figures		2.C.1.a Construct geometric figures using a variety of construction tools	Lesson 22: Lines and Angles Lesson 26: Circles
			2.C.1.b Construct geometric figures using a variety of construction tools.	Lesson 22: Lines and Angles Lesson 26: Circles



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		2.C.1.c Construct geometric figures using a variety of construction tools	Lesson 22: Lines and Angles Lesson 26: Circles
	2.D.1 Apply the properties of congruent polygons	2.D.1.a Determine the congruent parts of polygons	Lesson 24: Quadrilaterals and Other Polygons
		2.D.1.b Identify and describe similar polygons and their corresponding parts	Lesson 24: Quadrilaterals and Other Polygons
	2.E.1 Analyze a transformation on a coordinate plane	2.E.1.a Identify, describe, and plot the results of one transformation on a coordinate plane	Lesson 28: Transformations
		2.E.1.b Identify and describe transformations that result in rotational and reflectional symmetry	Lesson 28: Transformations
3.0 Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools, or technology for determining measurements.	3.C.1 Estimate and apply measurement formulas	3.C.1.a Estimate and determine the area of quadrilaterals	Lesson 25: Perimeter and area
		3.C.1.b Determine the surface area of geometric solids	Lesson 27: Volumes and Surface Areas
		3.C.1.c Estimate pi using physical models	
		3.C.1.d Estimate and determine the volume of a triangular prism	Lesson 27: Volumes and Surface Areas
	3.C.2 Analyze measurement relationships	3.C.2.a Determine a missing dimension for a figure using a scale.	Lesson 31: Ratio and Proportions



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		3.C.2.b Determine the distance between 2 points using a drawing and a scale	
4.0 Students will collect, organize, display, analyze, or interpret data to make decisions or predictions.	4.A.1 Organize and display data	4.A.1.a Organize and display data using back-to-back stem-and-leaf plots	
		4.A.1.b Organize and display data to make circle graphs	Lesson 26: Circles
	4.B.1 Analyze data	4.B.1.a Recognize and analyze faulty interpretation or representation of data	
		4.B.1.b Determine the best choice of a data display	Lesson 30: Graphs and Data Analysis
		4.B.1.c Analyze misleading data representation	
	4.B.2 Describe a set of data	4.B.2.a Analyze measures of central tendency to determine or apply mean, median, mode	Lesson 19: Mean, Median, Mode, Range
5.0 Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.	5.A.1 Identify a sample space	5.A.1.a Determine the number of outcomes	Lesson 20: Probability



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	5.B.1 Determine the probability of an event comprised of no more than 2 independent events	5.B.1.a Express the probability of an event as a fraction, a decimal, or a percent	Lesson 20: Probability
	5.C.1 Analyze the results of a survey or simulation	5.C.1.a Make predictions and express the probability of the results as a fraction, a decimal with no more than 2 decimal places, or a percent	Lesson 20: Probability
	5.C Experimental Probability	5.C.2 Conduct a probability experiment	
		5.C.3 Compare outcomes of theoretical probability with the results of experimental probability	
		5.C.4 Describe the difference between theoretical and experimental probability	
6.0 Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil, or technology.	6.A.1 Apply knowledge of rational numbers and place value	6.A.1.a Read, write, and represent whole numbers	Lesson 1: Integers
		6.A.1.b Express decimals using expanded form	
		6.A.1.c Determine equivalent forms of rational numbers expressed as fractions, decimal, percents, and ratios	Lesson 10: Conversion Between Fractions and Decimals  Lesson 14: Connect Fractions, Decimals, Percents



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		6.A.1.d Compare, order, and describe rational numbers with or without relational symbols ( $<$ , $>$ , $=$ )	Lesson 9: Place value, Round, Compare, Order Decimals
		6.A.1.e Express whole numbers and decimals in scientific notation	Lesson 2: Exponents, Squares and Square Roots
	6.C.1 Analyze number relations and compute	6.C.1.a Add, subtract, multiply, and divide integers	Lesson 1: Integers
		6.C.1.b Add, subtract, and multiply positive fractions and mixed numbers	Lesson 5: Addition and Subtraction of Fractions Lesson 6: Multiplication and Division of Fractions Lesson 7: Mixed Numbers Lesson 8: Solving Equations with Fractions
		6.C.1.c Divide fractions and mixed numbers	Lesson 6: Multiplication and Division of Fractions Lesson 7: Mixed Numbers Lesson 8: Solving Equations with Fractions
		6.C.1.d Calculate powers of integers and square roots of perfect square whole numbers	Lesson 2: Exponents, Squares and Square Roots
		6.C.1.e Use the laws of exponents to simplify expressions	Lesson 2: Exponents, Squares and Square Roots
		6.C.1.f Identify and use the properties of addition and multiplication to simplify expressions	Lesson 3: Order of Operations Lesson 33: Properties of Numbers and Variable Expressions
		6.C.1.g Determine percent of a number	Lesson 15: Percent of a number



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	6.C.2 Estimation	6.C.2.a Determine approximate sums, differences, products, and quotients	Lesson 8: Solving Equations with Fractions Lesson 11: Addition and Subtraction of Fractions
	6.C.3 Analyze ratios, proportions, or percents	6.C.3.a Determine equivalent ratios	Lesson 31: Ratio and Proportions
		6.C.3.b Determine and use rates, unit rates, and percents as ratios in the context of a problem	
		6.C.3.c Determine rate of increase and decrease, discounts, simple interest, commission, sales tax	Lesson 16: Percent of Change Lesson 17: Simple Interest
		6.C.3.d Determine percent of a number	Lesson 15: Percent of a number
SID 7596	6.C.3 Analyze ratios, proportions, or percents	SID 7596	