



Alignment Document

State of Alabama And Aventa Learning Pre-Algebra

Pre-Algebra 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
0	Number and Operations		
1	Use various strategies and operations to solve problems involving real numbers.		
1.1	Using alternative representations of rational numbers	Fractions	Fraction Basics
1.2	Applying GCF, LCM, and prime and composite numbers, including justification for the reasonableness of results, when working with rational numbers	Basics	Factors
1.3	Applying proportional reasoning	Fractions	Multiplying and Dividing
1.4	Using vocabulary associated with sets, including union and intersection		
1.5	Determining whether a number is rational or irrational		
1.6	Demonstrating computational fluency with operations on rational numbers	Basics	Integer Math
		Basics	Absolute Value
		Basics	Exponents
		Fractions	Multiplying and Dividing
		Fractions	Adding and Subtracting
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
2	Simplify expressions containing natural number exponents by applying one or more of the laws of exponents.		
2.1	Writing numbers using scientific notation		

3	Use order of operations to evaluate and simplify algebraic expressions.		
3.1	Applying the substitution principle	Polynomials	Evaluating Polynomials
3.2	Applying the properties of operations on rational numbers to evaluate and simplify algebraic expressions	Polynomials	Evaluating Polynomials
0	Algebra		
4	Graph linear relations by plotting points or by using the slope and y-intercept.		
4.1	Determining slopes and y-intercepts of lines	Equations	Linear Equations
4.2	Calculating the slope of a linear relation given as a table or graph	Equations	Linear Equations
4.3	Exhibiting conceptual understanding of various uses of variables		
5	Solve problems involving linear functions.		
5.1	Identifying functions from information in tables, sets of ordered pairs, equations, graphs, and mappings		
5.2	Determining the rule that defines a function		
5.3	Classifying variables in a function as independent or dependent		
5.4	Classifying relations as linear or nonlinear by examining tables, graphs, or simple equations	Equations	Linear Equations
5.5	Solve multistep linear equations, including equations requiring the use of the distributive property.	Equations	Solving Simple Equations
		Equations	Linear Equations
0	Geometry		
7	Solve problems using the Pythagorean Theorem.		
7.1	Applying the Triangle Inequality Theorem		
7.2	Verifying the Pythagorean Theorem	Factoring and Geometric Formulas	Geometric Formulas
7.3	Applying the Pythagorean Theorem to determine if a triangle is a right triangle	Factoring and Geometric Formulas	Geometric Formulas
7.4	Applying the Pythagorean Theorem to find the missing length of a side of a right triangle	Factoring and Geometric Formulas	Geometric Formulas
7.5	Calculating distances on the coordinate plane using the Pythagorean Theorem	Factoring and Geometric Formulas	Geometric Formulas

8	Compare quadrilaterals, triangles, and solids, using their properties and characteristics.		
8.1	Developing mathematical arguments about the relationships among types of quadrilaterals and triangles		
8.2	Identifying angle bisectors, perpendicular bisectors, congruent angles, and congruent figures		
8.3	Constructing congruent and similar polygons, congruent angles, congruent segments, and parallel and perpendicular lines		
0	Measurement		
9	Determine the measures of special angle pairs, including adjacent, vertical, supplementary, and complementary angles, and angles formed by parallel lines cut by a transversal.		
10	Find the perimeter and area of regular and irregular plane figures.	Factoring and Geometric Formulas	Geometric Formulas
11	Determine the surface area and volume of rectangular prisms, cylinders, and pyramids.		
11.1	Estimating surface area and volume of solid figures		
11.2	Determining the appropriate units of measure to describe surface area and volume		
11.3	Developing formulas for determining surface area and volume of rectangular prisms, cylinders, and pyramids		
12	Determine the lengths of missing sides and measures of angles in similar and congruent figures.		
12.1	Applying proportional reasoning		
12.2	Using dilations on the coordinate plane to determine measures of similar figures		
12.3	Finding the ratios of the perimeters and areas of similar triangles, trapezoids, and parallelograms	Factoring and Geometric Formulas	Geometric Formulas
0	Data Analysis and Probability		
13	Interpret data from populations, using given and collected data.		



13.1	Representing the data with the most appropriate graph, including box-and-whisker plot, circle graph, and scatterplot		
13.2	Making predictions by estimating the line of best fit from a scatterplot		
13.3	Comparing data sets involving two populations		
13.4	Determining the measure of center that is the most appropriate for a given situation	Probability and Data Analysis	Probability
14	Determine the theoretical probability of an event.		
14.1	Calculating the probability of complementary events and mutually exclusive events	Probability and Data Analysis	Probability
14.2	Comparing experimental and theoretical probability		
14.3	Computing the probability of two independent events and two dependent events		
14.4	Determining the probability of an event through simulation	Probability and Data Analysis	Data Analysis Projects