



Alignment Document
State of Maryland
And
Aventa Learning Pre-Algebra

Pre-Algebra
2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
1	The student will demonstrate the ability to investigate, interpret, and communicate solutions to mathematical and real-world problems using patterns, functions, and algebra.		
1.1	The student will analyze a wide variety of patterns and functional relationships using the language of mathematics and appropriate technology.		
1.1.1	The student will recognize, describe, and/or extend patterns and functional relationships that are expressed numerically, algebraically, and/or geometrically.		
1.1.2	The student will represent patterns and/or functional relationships in a table, as a graph, and/or by mathematical expression.	Equations	Linear Equations
1.1.3	The student will apply addition, subtraction, multiplication, and/or division of algebraic expressions to mathematical and real-world problems.	Equations	Linear Equations
1.1.4	The student will describe the graph of a non-linear function and discuss its appearance in terms of the basic concepts of maxima and minima, zeros (roots), rate of change, domain and range, and continuity.		



1.2	The student will model and interpret real-world situations using the language of mathematics and appropriate technology.		
1.2.1	The student will determine the equation for a line, solve linear equations, and/or describe the solutions using numbers, symbols, and/or graphs.	Equations	Linear Equations
1.2.2	The student will solve linear inequalities and describe the solutions using numbers, symbols, and/or graphs.		
1.2.3	The student will solve and describe using numbers, symbols, and/or graphs if and where two straight lines intersect.	Probability and Data Analysis	Data Analysis Projects
1.2.4	The student will describe how the graphical model of a non-linear function represents a given problem and will estimate the solution.		
1.2.5	The student will apply formulas and/or use matrices (arrays of numbers) to solve real-world problems.	Factoring and Geometric Formulas	Geometric Formulas
2	The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.		
2.1	The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.		
2.1.1	The student will analyze the properties of geometric figures.	Factoring and Geometric Formulas	Geometric Formulas
2.1.2	The student will identify and/or verify properties of geometric figures using the coordinate plane and concepts from algebra.	Factoring and Geometric Formulas	Geometric Formulas
2.1.3	The student will use transformations to move figures, create designs, and/or demonstrate geometric properties.		
2.1.4	The student will construct and/or draw and/or validate properties of geometric figures using appropriate tools and technology.	Factoring and Geometric Formulas	Geometric Formulas

2.2	The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.		
2.2.1	The student will identify and/or verify congruent and similar figures and/or apply equality or proportionality of their corresponding parts.		
2.2.2	The student will solve problems using two-dimensional figures and/or right-triangle trigonometry.	Factoring and Geometric Formulas	Geometric Formulas
2.2.3	The student will use inductive or deductive reasoning.	Probability and Data Analysis	Data Analysis Projects
2.3	The student will apply concepts of measurement using tools and technology when appropriate.		
2.3.1	The student will use algebraic and/or geometric properties to measure indirectly.		
2.3.2	The student will use techniques of measurement and will estimate, calculate, and/or compare perimeter, circumference, area, volume, and/or surface area of two- and three-dimensional figures and their parts.	Factoring and Geometric Formulas	Geometric Formulas
3	The student will demonstrate the ability to apply probability and statistical methods for representing and interpreting data and communicating results, using technology when needed.		
3.1	The student will collect, organize, analyze, and present data.		
3.1.1	The student will design and/or conduct an investigation that uses statistical methods to analyze data and communicate results.	Probability and Data Analysis	Data Analysis Projects
3.1.2	The student will use the measures of central tendency and/or variability to make informed conclusions.	Probability and Data Analysis	Probability, Data Analysis Projects
3.1.3	The student will calculate theoretical probability or use simulations or statistical inferences from data to estimate the probability of an event.	Probability and Data Analysis	Data Analysis Projects



3.2	The student will apply the basic concepts of statistics and probability to predict possible outcomes of real-world situations.		
3.2.1	The student will make informed decisions and predictions based upon the results of simulations and data from research.	Probability and Data Analysis	Data Analysis Projects
3.2.2	The student will interpret data and/or make predictions by finding and using a line of best fit and by using a given curve of best fit.		
3.2.3	The student will communicate the use and misuse of statistics.		