



Alignment Document

State of Connecticut And Aventa Learning Algebra I

Algebra I 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
1	Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools and technologies.		
1.1	Understand and describe patterns and functional relationships.	Functions and Linear Equations	Patterns and Sequences
1.1.a	Describe relationships and make generalizations about patterns and functions.	Functions and Linear Equations	Functions
		Functions and Linear Equations	Linear Patterns
		Functions and Linear Equations	Number Patterns
		Functions and Linear Equations	Line of Fit
1.2	Represent and analyze quantitative relationships in a variety of ways.	Functions and Linear Equations	Linear Equations
1.2.a	Represent and analyze linear and nonlinear functions and relations symbolically and with tables and graphs.	Functions and Linear Equations	Graphs of Inverses
		Functions and Linear Equations	Functions
		Functions and Linear Equations	Relations
		Functions and Linear Equations	Graphing an Equation Using Intercepts
		Functions and Linear Equations	Graphing an Equation Using Points

		Solving Systems	Review of Graphing Linear Equations
1.3	Use operations, properties and algebraic symbols to determine equivalence and solve problems.		Covered throughout the course
1.3.a	Manipulate equations, inequalities and functions to solve problems.	Inequalities	Multi-Step Inequalities
		Inequalities	Solving Inequalities Using Multiplication and Division
		Inequalities	Graphing Inequalities in Two Variables
		Inequalities	Solving Inequalities by Addition and Subtraction
		Inequalities	Inequalities in Two Variables
		Inequalities	Compound Inequalities
		Equations	Mixture Problems
		Equations	Multiplication and Division in Equations
		Equations	Equations with Variables on Each Side
		Equations	Solving Problems
		Equations	Formulas as Equations
		Equations	Solving Multi-Step Equations
		Equations	Addition and Subtraction in Equations
		Polynomials	Solving Equations Using Factoring
		Exponentials	Exponential Equations
		Functions and Linear Equations	Functions
		Quadratics and Radicals	Solving by Using Square Roots
2	Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.		
2.1	Understand that a variety of numerical representations can be used to describe quantitative relationships.	Functions and Linear Equations	Covered throughout the unit



2.1.a	Extend the understanding of number to include integers, rational numbers and real numbers.	Real Numbers	Decimals
		Real Numbers	Fractions
		Real Numbers	Multiplication of Rational Numbers
		Real Numbers	Order of Numbers
		Real Numbers	Adding Fractions with Real Numbers
		Real Numbers	Evaluating Division Expressions
		Real Numbers	Number Sets
		Real Numbers	Subtracting Fractions with Real Numbers
		Real Numbers	Rational Numbers
		Variables and Expressions	Addition of Integers
		Variables and Expressions	Integers
		Variables and Expressions	Multiplying and Dividing Integers
		Variables and Expressions	Subtraction of Integers
		Rational Expressions	Probability Expressed as a Percent
2.1.b	Interpret and represent large sets of numbers with the aid of technologies.	Solving Systems	Analyzing Statistical Data
		Solving Systems	Histograms
		Functions and Linear Equations	Line of Fit
2.2	Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.		Covered throughout the course
2.2.a	Develop strategies for computation and estimation using properties of number systems to solve problems.	Equations	Equations and Problem Solving
		Equations	Solving Problems
		Real Numbers	Estimation with Real Numbers
		Real Numbers	Writing and Justifying Steps Using Properties
		Real Numbers	Properties of Closure and Equality
		Real Numbers	Estimation



		Real Numbers	Using the Properties
		Real Numbers	Problem Solving
		Variables and Expressions	The Distributive Property
		Variables and Expressions	The Associative Property
		Variables and Expressions	The Commutative Property
2.2.b	Solve proportional reasoning problems.	Equations	Ratios and Proportions
3	Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools and technologies.		
3.1	Use properties and characteristics of two- and three-dimensional shapes and geometric theorems to describe relationships, communicate ideas and solve problems.		
3.1.a	Investigate relationships among plane and solid geometric figures using geometric models, constructions and tools.		
3.1.b	Develop and evaluate mathematical arguments using reasoning and proof.	Variables and Expressions	Deductive Reasoning
		Variables and Expressions	Logical Reasoning
		Variables and Expressions	Inductive Reasoning
3.2	Use spatial reasoning, location and geometric relationships to solve problems.		
3.2.a	Verify geometric relationships using algebra, coordinate geometry, and transformations.		
3.3	Develop and apply units, systems, formulas and appropriate tools to estimate and measure.		
3.3.a	Solve a variety of problems involving 1-, 2- and 3-dimensional measurements using geometric relationships and trigonometric ratios.		
4	Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.		



AVENTA LEARNING

4.1	Collect, organize and display data using appropriate statistical and graphical methods	Functions and Linear Equations	Covered throughout the unit
		Rational Expressions	Inverse Variation
		Exponentials	Geometric Sequences
4.1.a	Create the appropriate visual or graphical representation of real data.	Solving Systems	Analyzing Statistical Data
		Solving Systems	Histograms
4.2	Analyze data sets to form hypotheses and make predictions.	Functions and Linear Equations	Covered throughout the unit
		Rational Expressions	Inverse Variation
		Exponentials	Geometric Sequences
4.2.a	Analyze real- world problems using statistical techniques.	Solving Systems	Statistics
4.3	Understand and apply basic concepts of probability.	Rational Exprssions	Probability
4.3.a	Understand and apply the principles of probability in a variety of situations.	Rational Expressions	Counting: An introduction to the Multiplication Principle
		Rational Expressions	Using Data to Make Predictions
		Rational Expressions	More about the Multiplication Principle
		Rational Expressions	The Basics of Probability