



Alignment Document
State of North Carolina and Aventa Learning Algebra I

Algebra I

Goals	Standards	Unit Name	Course Topic Description
1 The learner will perform operations with numbers and expressions to solve problems.	1.01 Write equivalent forms of algebraic expressions to solve problems.		
	1.01.a Apply the laws of exponents.	Variables and Expressions	Problem Solving using Exponents and Roots
		Variables and Expressions	Fractional Exponents
	1.01.b Operate with polynomials.	Polynomials	Multiplying Using FOIL
		Polynomials	Multiplying Polynomials by a Monomial
		Polynomials	Addition and Subtraction of Polynomials
		Polynomials	Special Products
		Variables and Expressions	Multiplying Monomials
	1.01.c Factor polynomials.	Polynomials	Factoring Simple Trinomials
		Polynomials	Factoring with the GCF
Polynomials		Difference of Two Squares	
Polynomials		Factoring Other Trinomials	
Polynomials		Factoring Perfect Square Trinomials	
1.02 Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.	Equations	Formulas as Equations	
	Equations	Distance Formula	

	1.03 Model and solve problems using direct variation.	Functions and Linear Equations	Direct Variation
2 The learner will describe geometric figures in the coordinate plane algebraically.	2.01 Find the lengths and midpoints of segments to solve problems.		
	2.02 Use the parallelism or perpendicularity of lines and segments to solve problems.	Functions and Linear Equations	Parallel Lines
3 The learner will collect, organize, and interpret data with matrices and linear models to solve problems.	3.01 Use matrices to display and interpret data.	Functions and Linear Equations	Perpendicular Lines
		Solving Systems	Analyzing Statistical Data
	3.02 Operate (addition, subtraction, scalar multiplication) with matrices to solve problems.	Solving Systems	Histograms
		Solving Systems	Addition of Matrices
		Solving Systems	The Matrix
	3.03 Create linear models for sets of data to solve problems.	Solving Systems	Scalar Multiplication of Matrices
	3.03.a Interpret constants and coefficients in the context of the data.	Solving Systems	Histograms
Solving Systems		Analyzing Statistical Data	
3.03.b Check the model for goodness-of-fit and use the model, where appropriate, to draw conclusions or make predictions.			
4 The learner will use relations and functions to solve problems.	4.01 Use linear functions or inequalities to model and solve problems; justify results. 4.01.a Solve using tables, graphs, and algebraic properties.	Functions and Linear Equations	Slope-Intercept Form
		Functions and Linear Equations	Writing Linear Equations
		Functions and Linear Equations	Linear Patterns
		Functions and Linear Equations	Graphing an Equation Using Slope and Y-Intercept
		Functions and Linear Equations	Graphing an Equation Using Intercepts

<p>4.03 Use systems of linear equations or inequalities in two variables to model and solve problems. Solve using tables, graphs, and algebraic properties; justify results.</p>	Solving Systems	Review of Graphing Linear Equations
	<p>Equations</p> <p>Inequalities</p> <p>Solving Systems</p> <p>Solving Systems</p> <p>Solving Systems</p> <p>Solving Systems</p> <p>Solving Systems</p> <p>Solving Systems</p>	<p>Rate Problems</p> <p>Solving Inequalities Using Multiplication and Division</p> <p>Systems of equations</p> <p>Graphing Systems of Inequalities</p> <p>Problem Solving</p> <p>Solving with Substitution</p> <p>Problem Solving with Systems</p> <p>Solving with Elimination</p>
<p>4.04 Graph and evaluate exponential functions to solve problems.</p>	<p>Functions and Linear Equations</p> <p>Functions and Linear Equations</p> <p>Solving Systems</p>	<p>Graphing an Equation Using Intercepts</p> <p>Graphing an Equation Using Points</p> <p>Review of Graphing Linear Equations</p>