



Alignment Document
State of South Dakota and Aventa Learning Integrated Math

Integrated Math

Goals	Indicators	Standards	Unit Name	Course Topic Description	
9-12.A Algebra	9-12.A.1 Use procedures to transform algebraic expressions.	9-12.A.1.1 Students are able to write equivalent forms of algebraic expressions using properties of the set of real numbers.	Algebraic Sense Number Sense	Overview Real Numbers	
		9-12.A.1.1.a Evaluate algebraic expressions.	Algebraic Sense	Evaluate Algebraic Expression	
		9-12.A.1.1.b Use laws of exponents.	Number Sense	Exponents	
		9-12.A.1.1.c Use conventional order of operations, including grouping and exponents.	Operations	Order of Operations	
	9-12.A.2 Use a variety of algebraic concepts and methods to solve equations and inequalities.	9-12.A.2.1 Students are able to use algebraic properties to transform multi-step, single-variable, first-degree equations.	Algebraic Sense Algebraic Sense	Solving Two-Step Equations Linear Function	
		9-12.A.2.2 Students are able to use algebraic properties to transform multi-step, single-variable, first-degree inequalities and represent solutions using a number line.	Algebraic Sense	Inequalities	
			Algebraic Sense	Evaluate Multi-Step Equations	
			Algebraic Sense	Linear Function	
	9-12.A.3 Interpret and develop mathematical models.		9-12.A.3.1 Students are able to create linear models to represent problem situations.	Algebraic Sense Algebraic Sense	Overview Linear Function
			9-12.A.3.1.a Calculate and interpret slope.	Algebraic Sense	Evaluate Multi Step Equations Graph lines and Inequalities

			Algebraic Sense	Linear Function
		9-12.A.3.2 Students are able to distinguish between linear and nonlinear models.	Algebraic Sense	Linear Function
	9-12.A.4 Describe and use properties and behaviors of relations, functions and inverses.	9-12.A.4.1 Students are able to use graphs, tables, and equations to represent linear functions.	Algebraic Sense	Number Patterns
9-12.G Geometry	9-12.G.1 Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	9-12.G.1.1 Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.	Geometric Figures	Triangles
			Geometric Movement	Polygons
		9-12.G.1.2 Students are able to identify and apply relationships among triangles.	Geometric Figures	Overview
		9-12.G.1.2.a Definitions and postulates	Geometric Figures	Geometric Formulas
			Geometric Figures	Overview
		9-12.G.1.2.b Similarity theorems	Geometric Figures	Geometric Formulas
		9-12.G.1.2.c Congruence theorems	Geometric Figures	Overview
	Geometric Figures		Geometric Formulas	
	9-12.G.2 Use properties of geometric figures to solve problems from a variety of perspectives.	9-12.G.2.1 Students are able to recognize the relationship between a three-dimensional figure and its two-dimensional representation.	Geometric Movement	Overview
			9-12.G.2.1.a Interpret floor plans	Geometric Movement
		9-12.G.2.1.b Follow instructions for assembly of a product, e.g., "some assembly required."	Geometric Movement	Overview
		9-12.G.2.2 Students are able to reflect across vertical or horizontal lines, and translate two-dimensional figures.	Geometric Movement	Overview
		9-12.G.2.2.a Identify lines of symmetry.	Geometric Movement	Symmetry

		9-12.G.2.2.b Use the coordinate plane.	Geometric Movement	Coordinate Plane
		9-12.G.2.3 Students are able to use proportions to solve problems.	Geometric Figures	Proportion
9-12.M Measurement	9-12.M.1 Apply measurement concepts in practical applications.	9-12.M.1.1 Students are able to choose appropriate unit label, scale, and precision.	Measurement	Metric and Customary Systems
		9-12.M.1.1.a Determine appropriate scales for histograms scatter plots, and other graphs.	Probability 2	Scatter Plots
		9-12.M.1.2 Students are able to use suitable units when describing rate of change.	Operations	Ratio
		9-12.M.1.3 Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.	Measurement	Perimeter
			Measurement	Circumference
			Measurement	Area
9-12.M.1.3.a Use algebraic expressions with geometric formulas.	Geometric Figures	Geometric Formulas		
9-12.N Number Sense	9-12.N.1 Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	9-12.N.1.1 Students are able to identify multiple representations of a real number.	Measurement	Area
		9-12.N.1.1.a Given a real number identify the subset(s) of real numbers to which it belongs.	Measurement	Volume
		9-12.N.1.1.b Represent rational and irrational numbers in different forms.	Measurement	Perimeter
		9-12.N.1.2 Students are able to apply the	Geometric Movement	Geometric Problem Solving
			Number Sense	Real Numbers
		9-12.N.1.1.a Given a real number identify the subset(s) of real numbers to which it belongs.	Number Sense	Integers
		9-12.N.1.1.b Represent rational and irrational numbers in different forms.	Number Sense	Rational Numbers
		9-12.N.1.2 Students are able to apply the	Number Sense	Integers

		concept of place value, magnitude, and relative magnitude of real numbers.	Number Sense	Overview
		9-12.N.1.2.a Scientific notation	Operations	Scientific Notation
		9-12.N.1.2.b Infinitely many solutions	Number Sense	Overview
		9-12.N.1.2.c Completeness of the real numbers (density, i.e., between any two real numbers is another real number)	Number Sense	Integers
	9-12.N.2 Apply number operations with real numbers and other number systems.	9-12.N.2.1 Students are able to add, subtract, multiply, and divide real numbers including integral exponents.	Number Sense Algebraic Sense	Exponents Intro to Algebraic Expressions
	9-12.N.3 Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	9-12.N.3.1 Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.	Number Sense Word Problems	Reasonableness of using estimation Strategies
		9-12.N.3.1.a Use rounding as an estimation strategy.	Number Sense	Single-Step Estimation
		9-12.N.3.1.b Use non-routine estimation strategies.	Number Sense	Single-Step Estimation
		9-12.N.3.2 Students are able to select alternative computational strategies and explain the chosen strategy.	Number Sense Word Problems	Reasonableness of using estimation Strategies
		9-12.N.3.2.a Use properties of numbers that allow operational shortcuts for computational procedures.	Number Sense	Overview
9-12.S Statistics and Probability	9-12.S.1 Use statistical models to gather, analyze, and display data to draw conclusions.	9-12.S.1.1 Students are able to draw conclusions from a set of data.	Probability Intro	Central Tendencies of Data
		9-12.S.1.1.a Determine and use appropriate statistical values.	Probability Intro	Probability
		9-12.S.1.1.b Determine which questions can or cannot be answered from a given data set.	Probability Intro	Examine Data Bias
		9-12.S.1.2 Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode,	Probability Intro	Central Tendencies of Data

		and median.		
		9-12.S.1.3 Represent a set of data in a variety of graphical forms and draw conclusions.	Probability 2	Overview
		9-12.S.1.3.a Make a scatter plot to draw a regression line and make predictions.	Probability 2	Scatter Plots
		9-12.S.1.3.b Make a box-and-whisker plot to model a set of one-variable data.	Probability 2	box-and-whisker plot
		9-12.S.1.3.c Make a histogram from a frequency distribution.	Probability 2	histogram
	9-12.S.2 Apply the concepts of probability to predict events/outcomes and solve problems.	9-12.S.2.1 Students are able to distinguish between experimental and theoretical probability.	Introduction to Probability	Theoretical Probability
			Introduction to Probability	Overview
			Introduction to Probability	Experimental Probability
		9-12.S.2.2 Students are able to predict outcomes of simple events using given theoretical probabilities.	Introduction to Probability	Theoretical Probability
		9-12.S.2.2.a Determine the sample space of an experiment.	Introduction to Probability	Experimental Probability