AVENTA LEARNING

Alignment Document

State of California
And
Aventa Learning Geometry

Geometry
2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
G	Geometry		
G.1.0	Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	Reasoning and Introduction to Proof	Deductive Reasoning
G.2.0	Students write geometric proofs, including proofs by contradiction.	Reasoning and Introduction to Proof	Two Column Proof With Segments and Angles
		Reasoning and Introduction to Proof	Reasoning and Introduction to Proof
G.3.0	Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	Reasoning and Introduction to Proof	Inductive Reasoning
		Reasoning and Introduction to Proof	Deductive Reasoning
		Reasoning and Introduction to Proof	Two Column Proof
G.4.0	Students prove basic theorems involving congruence and similarity.	Triangles Basic Closed Figures in Geometry	Congruent Triangles and Congruence Tests
		Triangles Basic Closed Figures in Geometry	Special Segments in Triangles
		Similarity	Ratios and Proportions
		Similarity	Similar Triangles

G.5.0	Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	Triangles: Basic Closed Figures in Geometry	Congruent Triangles and Congruence Tests
		Right Triangle and Trigonometry	Review of Pythagorean Theorem
G.6.0	Students know and are able to use the triangle inequality theorem.	Special Triangles and Special Relationships in Triangles	Triangle Inequalities
G.7.0	Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.	Quadrilaterals and Polygons	Parallelograms
		Quadrilaterals and Polygons	Squares and Rectangles
		Quadrilaterals and Polygons	The Rhombus and Trapezoid
		Parallel Lines and Coordinate Plane	Lines and Points in a Plane
		Circles	Arcs and Special segments
G.8.0	Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	Perimeters and Areas	Perimeters and Areas of Triangles and Polygons
		Perimeters and Areas	Perimeters and Areas of Quadrilaterals
		Perimeters and Areas	Circumferences and Areas of Circles
G.9.0	Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.		
G.10.0	Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	Perimeters and Areas	Perimeters and Areas of Quadrilaterals
		Perimeters and Areas	Perimeters and Areas of Triangles and Polygons
G.11.0	Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.		

G.12.0	Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	Triangles: Basic Closed Figures in Geometry	Basic Closed Figures in Geometry
		Quadrilaterals and Polygons	Polygons
		Special Triangles and Special Relationships in Triangles	Isosceles Triangles
		Special Triangles and Special Relationships in Triangles	Equilateral Triangles
G.13.0	Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	Quadrilaterals and Polygons	Polygons
		Reasoning and Introduction to Proof	Reasoning and Introduction to Proof
		Connections From Algebra	Pairs of Angles
G.14.0	Students prove the Pythagorean theorem.		
G.15.0	Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	Right Triangle and Trigonometry	Review of Pythagorean Theorem
		Special Triangles and Special Relationships in Triangles	Right Triangles and Pythagorean Theorem
G.16.0	Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.	Connections From Algebra	Right Angles and Perpendicular Lines
		Parallel Lines and Coordinate Plane	Lines and Points in Coordinate Plane
		Connections From Algebra	Rays and Angles
G.17.0	Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	Parallel Lines and Coordinate Plane	Lines and Points in Coordinate Plane

G.18.0	Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.	Right Triangles and Trigonometry	Special Ratios in a Right Triangle
		Right Triangles and Trigonometry	Laws of Sine and Cosine
G.19.0	Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.		
G.20.0	Students know and are able to use angle and side relationships in problems with special right triangles, such as 30°, 60°, and 90° triangles and 45°, 45°, and 90° triangles.	Special Triangles and Special Relationships in Triangles	Right Triangles and Pythagorean Theorem
G.21.0	Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.	Circles	Arcs and Circular Angles
		Circles	Special Segments in Circles
G.22.0	Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.		