



Alignment Document

State of Tennessee And Aventa Learning Geometry

Geometry 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
0	Geometry		
1.0	Students will recognize, order, represent, and graph rational and irrational numbers, including absolute value notation.		
1.1	demonstrate an understanding of the relative size of rational and irrational numbers;		
1.2	choose and use appropriate notations for rational and irrational numbers, including graphic representations;		
1.3	demonstrate an understanding of absolute value.	Language of Geometry	Measuring Segments
2.0	Students will recognize, extend, create, and analyze a variety of geometric, spatial, and numerical patterns; solve real-world problems related to algebra and geometry; and use properties of various geometric figures to analyze and solve problems.		
2.1	recognize, extend, and create geometric, spatial, and numerical patterns;	Reasoning and Introduction to Proof	Inductive Reasoning
2.2	analyze mathematical patterns related to algebra and geometry in real-world problem solving;	Reasoning and Introduction to Proof	Inductive Reasoning

2.3	solve problems connecting geometry with number theory, probability and statistics, and measurement and estimation using algebraic thinking and symbolism;	Reasoning and Introduction to Proof	Inductive Reasoning
		Language of Geometry	Connections from Algebra
2.4	apply coordinate geometry to analyze and solve problems;	Parallel Lines and Coordinate Planes	Lines and Points in Coordinate Plane
		Parallel Lines and Coordinate Planes	Equations of Lines in Coordinate Plane
2.5	apply ratio and proportion to problems involving similar figures.	Similarity	Ratios and Proportions
		Similarity	Similar Figures
		Similarity	Similar Quadrilaterals
3.0	Students will investigate, model, and apply geometric properties and relationships and use indirect reasoning to make conjectures; deductive reasoning to draw conclusions; and both inductive and deductive reasoning to establish the truth of statements.		
3.1	analyze relationships among corresponding parts of similar or congruent geometric figures;	Similarity	Similar Figures
		Similarity	Similar Quadrilaterals
		Triangles: Basic Closed Figures in Geometry	Congruent Triangles and Congruence Tests
3.2	apply geometric properties of solids, polygons, and circles to solve real-world problems;	Quadrilaterals and Polygons	Polygons
3.3	justify conclusions and solve problems using deductive reasoning;	Reasoning and Introduction to Proof	Deductive Reasoning
3.4	use inductive reasoning to make conjectures and solve problems;	Reasoning and Introduction to Proof	Inductive Reasoning
3.5	communicate position using spatial sense with two- and three-dimensional coordinate systems;	Parallel Lines and Coordinate Planes	Lines and Points in Coordinate Plane
		Parallel Lines and Coordinate Planes	Equations of Lines in Coordinate Plane

3.6	demonstrate an understanding of transformations of geometric figures (i.e., translations, rotations, dilations, and reflections);		
3.7	apply right triangle relationships including the Pythagorean Theorem, the distance formula, and trigonometric ratios;	Right Triangle and Trigonometry	Review of Pythagorean Theorem
		Parallel Lines and Coordinate Plane	Lines and Points in Coordinate Plane (Distance and Midpoint Formulas)
		Special Triangles and Special Relationships in Triangles	Right Triangles and Pythagorean Theorem
		Right Triangle and Trigonometry	Special Ratios in a Right Triangle (Trigonometry)
3.8	describe geometric objects and recognize minimal conditions necessary to define the geometric objects;	Triangles: Basic Closed Figures in Geometry	Structure of Triangles
		Language of Geometry	Points, Lines, and Planes
		Language of Geometry	Rays and Angles
		Language of Geometry	Classifying Angles
		Language of Geometry	Pairs of Angles
		Language of Geometry	Right Angles and Perpendicular Lines
		Parallel Lines And Coordinate Plane	Parallel Lines
		Quadrilaterals and Polygons	Square and Rectangle
		Quadrilaterals and Polygons	Parallelogram
		Quadrilaterals and Polygons	Rhombus and Trapezoid
		Quadrilaterals and Polygons	Polygons
		Circles	Arcs and Circular Angles



3.9	apply reflexive, transitive, and symmetric properties when appropriate;	Language of Geometry	Connections from Algebra
		Reasoning and Introduction to Proof	Properties from Algebra and Proof
		Reasoning and Introduction to Proof	Two-Column Proof with Segments and Angles
3.10	demonstrate understanding of geometric properties of congruence, similarity, perpendicularity, and parallelism;	Triangles: Basic Closed Figures in Geometry	Congruent Triangles and Congruence Tests
		Parallel Lines and Coordinate Plane	Lines and Points in a Plane
		Similarity	Similar Quadrilaterals and Polygons
3.11	recognize and articulate relationships among families of geometric figures (e.g., quadrilaterals, prisms);	Perimeters and Areas	Perimeters and Areas of Quadrilaterals
		Quadrilaterals and Polygons	Squares and Rectangles
		Quadrilaterals and Polygons	Parallelograms
		Quadrilaterals and Polygons	The Rhombus and Trapezoid
3.12	use logic and proof to establish the validity of conjectures and theorems.	Reasoning and Introduction to Proof	Reasoning and Introduction to Proof
		Reasoning and Introduction to Proof	If-Then Statements, Converses, and Postulates
		Reasoning and Introduction to Proof	Two Column Proof With Segments and Angles

4.0	Students will apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, and volume; and choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.		
4.1	use concepts of length, area, and volume to estimate and solve real-world problems;	Perimeters and Areas	Perimeters and Areas of Quadrilaterals
4.2	apply measurement concepts and relationships in algebraic and geometric problem-solving situations;	Language of Geometry	Pairs of Angles
		Language of Geometry	Measuring Segments
		Parallel Lines and Coordinate Planes	Lines and Points in Coordinate Plane
		Parallel Lines and Coordinate Planes	Equations of Lines in Coordinate Plane
		Special Triangles and Special Relationships in Triangles	Pythagorean Theorem
		Triangles Basic Closed Figures in Geometry	Structure of Triangles
		Similarity	Similar Triangles
		Similarity	Similar Quadrilaterals and Polygons
		Circles	Arcs and Circular Angles
		Circles	Special Segments in Circles
		Circles	Equations of Circles
		Right Triangles and Trigonometry	Special Ratios in a Right Triangle
		Perimeters and Areas	Perimeters and Areas of Triangles and Polygons
		Perimeters and Areas	Perimeter and Areas of Quadrilaterals
		Perimeters and Areas	Circumference and Areas of Circles



4.3	choose appropriate techniques and tools to measure quantities in order to meet specifications for precision, accuracy, and tolerance.		
5.0	The student will investigate, explore, and apply geometric representations to calculate theoretical probability; and will use data from geometric figures to investigate relationships.		
5.1	apply geometric representations to calculate theoretical probability;		
5.2	use data analysis to investigate geometric relationships.		