Geometry

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
	Algebra		
1	Determine the equation of a line parallel or perpendicular to a second line through a given point.	Parallel Lines and Coordinate Plane	Equations of Lines in Coordinate Plane
			Lines and Points in a Plane
	Geometry		
2	Justify theorems related to pairs of angles, including angles formed by parallel and perpendicular lines, vertical angles, adjacent angles, complementary angles, and supplementary angles.	Connections From Algebra	Pairs of Angles
			Right Angles and Perpendicular Lines
		Parallel Lines and Coordinate Plane	Lines and Points in a Plane
			Equations of Lines in Coordinate Plane
3	Verify the relationships among different classes of polygons by using their properties.		
3.1	Determining the missing lengths of sides or measures of angles in similar polygons	Quadrilaterals and Polygons	Polygons
		Similarity	Similar Figures
			Similar Quadrilaterals
4	Determine the measure of interior and exterior angles associated with polygons.		
4.1	Verifying the formulas for the measures of interior and exterior angles of polygons inductively and deductively	Special Triangles and Special Relationships in Triangles	Exterior Angle Inequality
		Polygons	Interior angles
5	Solve real-life and mathematical problems using properties and theorems related to circles, quadrilaterals, and other geometric shapes.	Quadrilaterals and Polygons	Square and Rectangle
			Parallelogram
			Rhombus and Trapezoid
			Polygons
5.1	Determining the equation of a circle given its center and radius	Circles	Equations of Circles
6	Apply the Pythagorean Theorem to solve application problems, expressing answers in simplified radical form or as decimal approximations, using Pythagorean triples when applicable.	Right Triangles and Pythagorean Theorem	Pythagorean Theorem
7	Use the ratios of the sides of special right triangles to find lengths of missing sides.	Right Triangles and Pythagorean Theorem	Pythagorean Theorem
7.1	Deriving the ratios of the sides of 30-60-90 and 45-45-90 triangles	Right Triangles and Pythagorean Theorem	30-60-90 Triangles
			45-45-90 Triangles
8	Deduce relationships between two triangles, including proving congruence or similarity of the triangles from given information, using the relationships to solve problems and to establish other relationships.	Similarity	Similar Triangles
		Basic Closed Figures in Geometry	Congruent Triangles and Congruence Tests

Geometry

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
8.1	Determining the geometric mean to find missing lengths in right triangles		
9	Use inductive reasoning to make conjectures and deductive reasoning to justify conclusions.		
9.1	Recognizing the limitations of justifying a conclusion through inductive reasoning	Reasoning and Introduction to Proof	Reasoning and Introduction to Proof
10	Find the missing measures of sides and angles in right triangles by applying the right triangle definitions of sine, cosine, and tangent.		
11	Determine the areas and perimeters of regular polygons, including inscribed or circumscribed polygons, given the coordinates of vertices or other characteristics.	Perimeters and Areas	Perimeters and Areas of Triangles and Polygons (does not include inscribed)
			Perimeters and Areas of Quadrilaterals (does not include inscribed)
12	Apply distance, midpoint, and slope formulas to solve problems and to confirm properties of polygons.	Parallel Lines and Coordinate Plane	Lines and Points in Coordinate Plane
			Equations of Lines in Coordinate Plane
13	Identify the coordinates of the vertices of the image of a given polygon that is translated, rotated, reflected, or dilated.		
14	Classify polyhedrons according to their properties, including the number of faces.		
14.1	Identifying Euclidean solids		
	Measurement		
15	Calculate measures of arcs and sectors of a circle from given information.	Circles	Arcs
16	Calculate surface areas and volumes of solid figures, including spheres, cones, and pyramids.		
16.1	Developing formulas for surface area and volume of spheres, cones, and pyramids		
16.2	Calculating specific missing dimensions of solid figures from surface area or volume		
16.3	Determining the relationship between the surface areas of similar figures and volumes of similar figures		
	Data Analysis and Probability		
17	Analyze sets of data from geometric contexts to determine what, if any, relationships exist.		
17.1	Distinguishing between conclusions drawn when using deductive and statistical reasoning	Reasoning and Introduction to Proof	Deductive Reasoning
17.2	Calculating probabilities arising in geometric contexts		
18	Construct with precision a circle graph to represent data from given tables or classroom experiments.		

Geometry