

Geometry CR

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
G	Geometry		
G.G	Geometry		
G.G.1	Recognize special types of polygons (e.g., isosceles triangles, parallelograms, and rhombuses). Apply properties of sides, diagonals, and angles in special polygons; identify their parts and special segments (e.g., altitudes, midsegments); determine interior angles for regular polygons. Draw and label sets of points such as line segments, rays, and circles. Detect symmetries of geometric figures.	Triangles Quadrilaterals and Polygons Connections from Algebra Circles	Section 1 Section 1 Section 1, 3 Sections 1-3
G.G.2	Write simple proofs of theorems in geometric situations, such as theorems about congruent and similar figures, parallel or perpendicular lines. Distinguish between postulates and theorems. Use inductive and deductive reasoning, as well as proof by contradiction. Given a conditional statement, write its inverse, converse, and contrapositive.		
G.G.3	Apply formulas for a rectangular coordinate system to prove theorems.		
G.G.4	Draw congruent and similar figures using a compass, straightedge, protractor, or computer software. Make conjectures about methods of construction. Justify the conjectures by logical arguments.		
G.G.5	Apply congruence and similarity correspondences (e.g., $\triangle ABC$ is approximately equal to $\triangle XYZ$) and properties of the figures to find missing parts of geometric figures, and provide logical justification.	Right Triangles and Trigonometry	Section 1

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G.G.6	Apply properties of angles, parallel lines, arcs, radii, chords, tangents, and secants to solve problems.	Parallel Lines and Coordinate Plane Connections from Algebra Circles	Section 1 Section 5 Sections 1-3
G.G.7	Solve simple triangle problems using the triangle angle sum property, and/or the Pythagorean theorem.	Triangles: Basic Closed Figures in Geometry Special Triangles and Special Relationships in Triangles	Section 1 Section 3
G.G.8	Use the properties of special triangles (e.g., isosceles, equilateral, 30°-60°-90°, 45°-45°-90°) to solve problems.	Special Triangles and Special Relationships in Triangles	Section 3
G.G.9	Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.	Right Triangles and Trigonometry	Section 1
G.G.10	Apply the triangle inequality and other inequalities associated with triangles (e.g., the longest side is opposite the greatest angle) to prove theorems and solve problems.		
G.G.11	Demonstrate an understanding of the relationship between various representations of a line. Determine a line's slope and x- and y-intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or a geometric description of the line, e.g., by using the "point-slope" or "slope y-intercept" formulas. Explain the significance of a positive, negative, zero, or undefined slope.	Parallel Lines and Coordinate Plane	Section 3

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G.G.12	Using rectangular coordinates, calculate midpoints of segments, slopes of lines and segments, and distances between two points, and apply the results to the solutions of problems.	Parallel Lines and Coordinate Plane	Section 2 Section 3
G.G.13	Find linear equations that represent lines either perpendicular or parallel to a given line and through a point, e.g., by using the "point-slope" form of the equation.	Parallel Lines and Coordinate Plane	Section 3
G.G.14	Demonstrate an understanding of the relationship between geometric and algebraic representations of circles.	Circles	Section 3
G.G.15	Draw the results, and interpret transformations on figures in the coordinate plane, e.g., translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solution of problems.	Perimeter and Area	Section 6
G.G.16	Demonstrate the ability to visualize solid objects and recognize their projections and cross sections.		
G.G.17	Use vertex-edge graphs to model and solve problems.		
G.G.18	Use the notion of vectors to solve problems. Describe addition of vectors and multiplication of a vector by a scalar, both symbolically and pictorially. Use vector methods to obtain geometric results.		

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G.M	Measurement		
G.M.1	Calculate perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.	Perimeter and Area	Sections 1-3
G.M.2	Given the formula, find the lateral area, surface area, and volume of prisms, pyramids, spheres, cylinders, and cones, e.g., find the volume of a sphere with a specified surface area.	Perimeter and Area	Sections 4, 5
G.M.3	Relate changes in the measurement of one attribute of an object to changes in other attributes, e.g., how changing the radius or height of a cylinder affects its surface area or volume.		
G.M.4	Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements.		
G.M.5	Use dimensional analysis for unit conversion and to confirm that expressions and equations make sense.		