

South Carolina High School Geometry Curriculum Mapping

Geometry	Boardworks High School Geometry presentation
Standard G-2: The student will demonstrate through the mathematical processes an understanding of the properties of basic geometric figures and the relationships between and among them.	
G-2.1 Infer missing elements of visual or numerical geometric patterns (including triangular and rectangular numbers and the number of diagonals in polygons).	–
G-2.2 Apply properties of parallel lines, intersecting lines, and parallel lines cut by a transversal to solve problems.	Lines
G-2.3 Use the congruence of line segments and angles to solve problems.	Angles Lines Using angles
G-2.4 Use direct measurement to determine the length of a segment, degree of an angle, and distance from a point to a line.	–
G-2.5 Carry out a procedure to create geometric constructions (including the midpoint of a line segment, the angle bisector, the perpendicular bisector of a line segment, the line through a given point that is parallel to a given line, and the line through a given point that is perpendicular to a given line).	Constructing triangles Constructing bisecting lines and angles Using construction
G-2.6 Use scale factors to solve problems involving scale drawings and models.	Dilation The center of dilation
G-2.7 Use geometric probability to solve problems.	–
Standard G-3: The student will demonstrate through the mathematical processes an understanding of the properties and special segments of triangles and the relationships between and among triangles.	
G-3.1 Carry out a procedure to compute the perimeter of a triangle.	–
G-3.2 Carry out a procedure to compute the area of a triangle.	Area formulas and calculations
G-3.3 Analyze how changes in dimensions affect the perimeter or area of triangles.	Area formulas and calculations
G-3.4 Apply properties of isosceles and equilateral triangles to solve problems.	Triangles
G-3.5 Use interior angles, exterior angles, medians, angle bisectors, altitudes, and perpendicular bisectors to solve problems.	Triangles
G-3.6 Apply the triangle sum theorem to solve problems.	Triangles
G-3.7 Apply the triangle inequality theorem to solve problems.	The Triangle Inequality Theorem

G-3.8 Apply congruence and similarity relationships among triangles to solve problems.	Congruency and similarity Similar right triangles
G-3.9 Apply theorems to prove that triangles are either similar or congruent.	Congruency and similarity Similar right triangles
G-3.10 Use the Pythagorean theorem and its converse to solve problems.	The Pythagorean Theorem Identifying right triangles Pythagorean triples Similar right triangles Calculating sides of a triangle Finding the length of diagonals using the Pythagorean Theorem Finding the height of triangles using the Pythagorean Theorem Using the Pythagorean Theorem to solve problems in context Finding the distance between two points using the Pythagorean Theorem Finding the diagonal in a rectangular prism
G-3.11 Use the properties of 45-45-90 and 30-60-90 triangles to solve problems.	Special right triangles
G-3.12 Use trigonometric ratios (including sine, cosine, and tangent) to solve problems involving right triangles.	Right triangles The sine ratio The cosine ratio The tangent ratio Trigonometry summary Applying trigonometry
Standard G-4: The student will demonstrate through the mathematical processes an understanding of the properties of quadrilaterals and other polygons and the relationships between and among them.	
G-4.1 Carry out a procedure to compute the perimeter of quadrilaterals, regular polygons, and composite figures.	–
G-4.2 Carry out a procedure to find the area of quadrilaterals, regular polygons, and composite figures.	Area formulas and calculations Using area formulas
G-4.3 Apply procedures to compute measures of interior and exterior angles of polygons.	Interior and exterior angles of a polygon
G-4.4 Analyze how changes in dimensions affect the perimeter or area of quadrilaterals and regular polygons	Area formulas and calculations

G-4.5 Apply the properties and attributes of quadrilaterals and regular polygons and their component parts to solve problems.	Using area formulas Quadrilaterals
G-4.6 Apply congruence and similarity relationships among shapes (including quadrilaterals and polygons) to solve problems.	Congruency and similarity Using congruency and similarity
Standard G-5: The student will demonstrate through the mathematical processes an understanding of the properties of circles, the lines that intersect them, and the use of their special segments.	
G-5.1 Carry out a procedure to compute the circumference of circles.	Radius and circumference
G-5.2 Carry out a procedure to compute the area of circles.	The area of a circle
G-5.3 Analyze how a change in the radius affects the circumference or area of a circle.	The area of a circle Radius and circumference
G-5.4 Carry out a procedure to compute the length of an arc or the area of a sector of a circle.	The length of an arc The area of a sector
G-5.5 Apply the properties of the component parts of a circle (including radii, diameters, chords, sectors, arcs, and segments) to solve problems.	Parts of a circle The length of an arc The area of a sector
G-5.6 Apply the properties of lines that intersect circles (including two secants, two tangents, and a secant and a tangent) to solve problems.	Parts of a circle
G-5.7 Apply the properties of central angles, inscribed angles, and arcs of circles to solve problems.	Angles in a circle Parts of a circle
Standard G-6: The student will demonstrate through the mathematical processes an understanding of transformations, coordinate geometry, and vectors.	
G-6.1 Use the distance formula to solve problems.	The distance between two points
G-6.2 Use the midpoint formula to solve problems.	The midpoint of a line segment
G-6.3 Apply transformations—translation, reflection, rotation, and dilation—to figures in the coordinate plane by using sketches and coordinates.	Translation Rotation Reflection symmetry Dilation Combining transformations
G-6.4 Apply transformations (including translation and dilation) to figures in the coordinate plane by using matrices.	Translation Combining transformations
G-6.5 Carry out a procedure to represent the sum of two vectors geometrically by using the parallelogram method.	Adding and subtracting vectors Vectors
G-6.6 Carry out a procedure to determine the magnitude and direction of the resultant of two vectors by using a scale drawing and direct measurement.	Adding and subtracting vectors Vectors

G-6.7 Carry out a procedure to compute the magnitude of the resultant of two perpendicular vectors by using the Pythagorean theorem.	The magnitude of a vector
G-6.8 Carry out a procedure to determine the direction of the resultant of two perpendicular vectors by using a scale drawing and direct measurement.	–
Standard G-7: The student will demonstrate through the mathematical processes an understanding of the surface area and volume of three-dimensional objects.	
G-7.1 Carry out a procedure to compute the surface area of three-dimensional objects (including cones, cylinders, pyramids, prisms, spheres, and hemispheres).	Prisms Pyramids Cylinders, cones and spheres Surface area of rectangular prisms Using length, area and volume formulas
G-7.2 Carry out a procedure to compute the volume of three-dimensional objects (including cones, cylinders, pyramids, prisms, spheres, hemispheres, and composite objects).	Prisms Pyramids Cylinders, cones and spheres Using length, area and volume formulas Volume of rectangular prisms
G-7.3 Analyze how changes in dimensions affect the volume of objects (including cylinders, prisms, and spheres).	Prisms Pyramids Cylinders, cones and spheres Using length, area and volume formulas
G-7.4 Apply congruence and similarity relationships among geometric objects to solve problems.	Congruence and similarity Using congruence and similarity Similar right triangles
G-7.5 Apply a procedure to draw a top view, front view, and side view of a three-dimensional object.	Rotational symmetry in 3-D shapes
G-7.6 Apply a procedure to draw an isometric view of a three-dimensional object.	Reflectional symmetry in 3-D shapes Rotational symmetry in 3-D shapes