

Cord Geometry, Mathematics in Context, 3rd edition
correlation to South Carolina Geometry Indicators

Indicators	Cord Geometry Lesson(s)
Standard G-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.	
G-1.1 Demonstrate an understanding of the axiomatic structure of geometry by using undefined terms, definitions, postulates, theorems, and corollaries.	Covered throughout the textbook, especially in Chapters 1 and 2.
G-1.2 Communicate knowledge of geometric relationships by using mathematical terminology appropriately.	Covered throughout the textbook.
G-1.3 Apply basic rules of logic to determine the validity of the converse, inverse, and contrapositive of a conditional statement	2.3
G-1.4 Formulate and test conjectures by using a variety of tools such as concrete models, graphing calculators, spreadsheets, and dynamic geometry software.	Covered throughout the textbook, especially in Math Labs sections at the end of each chapter.
G-1.5 Use inductive reasoning to formulate conjectures.	2.1
G-1.6 Use deductive reasoning to validate conjectures with formal and informal proofs, and give counterexamples to disprove a statement	2.2, 2.4, 2.5, 2.6
G-1.7 Understand the historical development of geometry.	Covered throughout the textbook in Cultural Connections features on pages 37, 115, 147, 420, 543.
G-1.8 Connect geometry with other branches of mathematics.	Covered throughout the textbook, especially in Math Applications sections at the end of each chapter.
G-1.9 Demonstrate an understanding of how geometry applies to in real-world contexts (including architecture, construction, farming, and astronomy).	Covered throughout the textbook, especially in Math Applications sections at the end of each chapter.
G-1.10 Demonstrate an understanding of geometric relationships (including constructions through investigations by using a variety of tools such as straightedge, compass, Patty Paper, dynamic geometry software, and handheld computing devices).	Covered throughout the textbook, especially in Activities within most lessons and in the Math Labs sections at the end of each chapter.

Indicators	Cord Geometry Lesson(s)
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).	2.1, 5.3, 6.2
G-2.2 Apply properties of parallel lines, intersecting lines, and parallel lines cut by a transversal to solve problems.	1.5, 2.7, 2.8
G-2.3 Use the congruence of line segments and angles to solve problems.	1.2, 1.3, 2.7, 2.8
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.	1.2, 1.3, 7.1
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).	1.4
G-2.6 Use scale factors to solve problems involving scale drawings and models.	8.6, 11.7
G-2.7 Use geometric probability to solve problems.	8.7

Indicators	Cord Geometry Lesson(s)
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.	6.1, 8.2
G-3.2 Carry out a procedure to compute the area of a triangle.	8.2
G-3.3 Analyze how changes in dimensions affect the perimeter or area of triangles.	8.6
G-3.4 Apply properties of isosceles and equilateral triangles to solve problems.	3.7
G-3.5 Use interior angles, exterior angles, medians, angle bisectors, altitudes, and perpendicular bisectors to solve problems.	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
G-3.6 Apply the triangle sum theorem to solve problems.	3.1
G-3.7 Apply the triangle inequality theorem to solve problems.	3.3
G-3.8 Apply congruence and similarity relationships among triangles to solve problems.	3.4, 3.5, 3.6, 4.3, 4.4, 4.5
G-3.9 Apply theorems to prove that triangles are either similar or congruent.	3.4, 3.5, 3.6, 4.3, 4.4, 4.5
G-3.10 Use the Pythagorean theorem and its converse to solve problems.	5.2
G-3.11 Use the properties of 45-45-90 and 30-60-90 triangles to solve problems.	5.3
G-3.12 Use trigonometric ratios (including sine, cosine, and tangent) to solve problems involving right triangles.	5.4, 5.5

Indicators	Cord Geometry Lesson(s)
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.	8.1, 8.2, 8.3, 8.4
G-4.2 Carry out a procedure to find the area of quadrilaterals, regular polygons, and composite figures.	8.1, 8.3, 8.4
G-4.3 Apply procedures to compute measures of interior and exterior angles of polygons.	6.1, 6.2
G-4.4 Analyze how changes in dimensions affect the perimeter or area of quadrilaterals and regular polygons.	8.6
G-4.5 Apply the properties and attributes of quadrilaterals and regular polygons and their component parts to solve problems.	8.1, 8.3, 8.4, Chapter 8 Math Applications
G-4.6 Apply congruence and similarity relationships among shapes (including quadrilaterals and polygons) to solve problems.	8.6

Indicators	Cord Geometry Lesson(s)
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.	8.5
G-5.2 Carry out a procedure to compute the area of circles.	8.5
G-5.3 Analyze how a change in the radius affects the circumference or area of a circle.	8.5
G-5.4 Carry out a procedure to compute the length of an arc or the area of a sector of a circle.	9.3
G-5.5 Apply the properties of the component parts of a circle (including radii, diameters, chords, sectors, arcs, and segments) to solve problems.	9.1, 9.2, 9.3, 9.4, 9.5, Chapter 9 Math Applications
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.	9.2, 9.3, 9.4, 9.5, Chapter 9 Math Applications
G-5.7 Apply the properties of central angles, inscribed angles, and arcs of circles to solve problems.	9.2, 9.3, 9.4, 9.5, Chapter 9 Math Applications

Indicators	Cord Geometry Lesson(s)
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.	7.1
G-6.2 Use the midpoint formula to solve problems.	7.1
G-6.3 Apply transformations—translation, reflection, rotation, and dilation—to figures in the coordinate plane by using sketches and coordinates.	11.1,11.2, 11.3, 11.4, 11.5, 11.7
G-6.4 Apply transformations (including translation and dilation) to figures in the coordinate plane by using matrices.	Chapter 11 Math Lab 3
G-6.5 Carry out a procedure to represent the sum of two vectors geometrically by using the parallelogram method.	7.2
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.	7.2
G-6.7 Carry out a procedure to compute the magnitude of the resultant of two perpendicular vectors by using the Pythagorean theorem.	7.2
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.	7.2

Indicators	Cord Geometry Lesson(s)
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).	10.3, 10.5
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).	10.4, 10.6
G-7.3 Analyze how changes in dimensions affect the volume of objects (including cylinders, prisms, and spheres).	10.8
G-7.4 Apply congruence and similarity relationships among geometric objects to solve problems.	10.8
G-7.5 Apply a procedure to draw a top view, front view, and side view of a three-dimensional object.	10.1
G-7.6 Apply a procedure to draw an isometric view of a three-dimensional object.	10.1