

California Content Standards for Geometry

Correlated to *Glencoe MathMatters 1-3*

The geometry skills and concepts developed in this discipline are useful to all students. Aside from learning these skills and concepts, students will develop their ability to construct formal, logical arguments and proofs in geometric settings and problems.

Standard Number	Content Standard	MathMatters 1 Lesson(s)	MathMatters 2 Lesson(s)	MathMatters 3 Lesson(s)
1.0	Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	4-1, 11-2, 11-3, 11-5	12-5, 12-6, 12-7	3-5
2.0	Students write geometric proofs, including proofs by contradiction.	Not covered	12-7	3-7, 4-5
3.0	Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	11-3, 11-5	12-3, 12-4, 12-6	3-7
4.0	Students prove basic theorems involving congruence and similarity.	Not covered	5-4, 5-5, 11-1	4-2, 4-3, 7-2, 7-4
5.0	Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	Not covered	5-4, 5-5, 11-1	4-5, 7-2, 7-4
6.0	Students know and are able to use the triangle inequality theorem.	Not covered	Not covered	4-6
7.0	Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.	8-1	5-3, 5-6, 5-8, 5-7	4-8, 4-9, 7-6, 10-4, 10-6
8.0	Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	2-3, 2-4, 2-5, 2-7, 2-9, 4-7, 4-8, 4-9	10-2, 10-3, 10-7, 10-8, 10-9	5-2, 5-4, 5-6, 5-7
9.0	Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.	4-7, 4-8, 4-9	10-2, 10-3, 10-7, 10-8, 10-9	5-6, 5-7
10.0	Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	2-4, 2-5, 2-9	Not covered	5-2, 5-4
11.0	Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	Not covered	Not covered	Not covered

Standard Number	Content Standard	MathMatters 1 Lesson(s)	MathMatters 2 Lesson(s)	MathMatters 3 Lesson(s)
12.0	Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	4-2	5-4, 5-6, 5-7	4-1, 4-8, 4-9
13.0	Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	8-1	5-2, 5-4, 5-7	3-2, 3-3, 4-1, 4-7, 4-9, 4-9
14.0	Students prove the Pythagorean theorem.	7-7	11-3	10-2
15.0	Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	7-7	11-3	10-2, 14-2
16.0	Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.	8-2	Not covered	3-4, 10-7
17.0	Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	7-7	6-1	12-6, 13-1, 13-2, 13-4
18.0	Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.	Not covered	11-4, 11-5, 11-6, 11-8	14-1, 14-2, 14-3, 14-4
19.0	Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.	Not covered	11-4, 11-5, 11-6, 11-8	14-1, 14-2
20.0	Students know and are able to use angle and side relationships in problems with special right triangles, such as 30°, 60°, and 90° triangles and 45°, 45°, and 90° triangles.	Not covered	11-7	10-3
21.0	Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.	Not covered	3-8	10-4, 10-6
22.0	Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.	8-5, 8-6, 8-7	7-1, 7-2, 7-3, 7-4, 7-6	8-1, 8-2, 8-4, 8-7