

Correlation of

GEOMETRY:
Mathematics in Context,
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to

California's Academic Content Standards:
Mathematics — Grades Eight Through Twelve — Geometry

CONTENT STANDARD	PAGE REFERENCES
1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	4–11, 51, 64, 68–73, 74, 77, 123–124, 140–147
2.0 Students write geometric proofs, including proofs by contradiction.	89–94, 95–102, 103–109, 110–114, 136, 155–161, 173–178, 188–189, 197, 211–217, 224–230, 421–428
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	74–79, 80–84, 85–88, 115–120, 125–135, 136–137
4.0 Students prove basic theorems involving congruence and similarity.	211–217, 224–230, 316–322
5.0 Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	204–210, 211–217, 218–223, 224–230, 242–250, 251–253, 316–322, 323–330, 335–340, 373–385, 386–387
6.0 Students know and are able to use the triangle inequality theorem.	179–183, 193, 200–201
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.	140–145, 148–154, 155–161, 184–186, 190–199, 200–201
8.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	458–464, 465–470, 471–476, 477–480, 481–486, 487–491, 497–499, 504–513, 514–515
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.	596–604, 605–611, 612–618, 619–624, 626–631, 632–636, 647–649, 650–660, 661–663
10.0 Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	458–464, 465–470, 471–476, 477–480, 487–491, 504–513, 514–515
11.0 Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	487–491, 632–636, 655

CONTENT STANDARD	PAGE REFERENCES
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.	162–170, 186–187, 256–261, 262–267, 268–272, 273–278, 279–284, 285–290, 291–292, 297–305, 306–307
13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	23–25, 26–29, 44–45, 56–63, 64–65, 103–109, 110–114, 275–278
14.0 Students prove the Pythagorean theorem.	341–342
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	341–347, 369–371
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.	36–43, 46–50, 59, 61, 65
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.	390–396, 397–403, 405–412, 413–420, 421–428, 429–437, 444–453, 454–455, 518–524, 557–563, 564–565, 698–704
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, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.	354, 361
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.	354–360, 361–366
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.	348–353, 369–371

CONTENT STANDARD	PAGE REFERENCES
21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.	501–503, 518–524, 525–532, 533–541, 542–549, 550–556, 565–570, 571–577, 578–579
22.0 Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.	666–673, 674–680, 681–687, 688–693, 694–697, 712–715, 721–728, 729–730