

California High School Geometry Curriculum Mapping

Geometry	Boardworks High School Geometry presentation
1.0 Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	–
2.0 Students write geometric proofs, including proofs by contradiction.	–
3.0 Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.	–
4.0 Students prove basic theorems involving congruence and similarity.	Congruence and similarity
5.0 Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.	Congruence and similarity Similar right triangles
6.0 Students know and are able to use the triangle inequality theorem.	The Triangle Inequality Theorem
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.	Lines Quadrilaterals Parts of a circle Angles Angles in a circle
8.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	Area formulas and calculations Using area formulas Polygons Edges of rectangular prisms Surface area of rectangular prisms Volume of right rectangular prisms Prisms Pyramids Cylinders cones and spheres Using length, area and volume formulas

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.	Area formulas and calculations Using area formulas Surface area of rectangular prisms Volume of right rectangular prisms Prisms Pyramids Cylinders, cones and spheres Using length, area and volume formulas
10.0 Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	Area formulas and calculations The area of a triangle
11.0 Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	Area formulas and calculations Using area formulas Edges of rectangular prisms Surface Area of rectangular prisms Volume of rectangular prisms
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.	Polygons Interior and exterior angles of a polygon Using polygons Triangles
13.0 Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	Interior and exterior angles of a polygon
14.0 Students prove the Pythagorean theorem.	The Pythagorean Theorem
15.0 Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.	Calculating sides of a triangle The Pythagorean Theorem Special right triangles
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.	Constructing bisecting lines and angles Using construction Constructing triangles
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.	The midpoint of a line segment The equation of a straight line The equation of a circle The distance between two points

<p>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, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$.</p>	<p>Right triangles The sine ratio The cosine ratio The tangent ratio Trigonometry summary The law of sines The law of cosines</p>
<p>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.</p>	<p>Applying trigonometry The sine ratio The cosine ratio The tangent ratio</p>
<p>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.</p>	<p>Special right triangles</p>
<p>21.0 Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.</p>	<p>Parts of a circle Angles in a circle The length of an arc Radius and circumference</p>
<p>22.0 Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.</p>	<p>Translation Rotation Combining transformations Reflection symmetry Rotational symmetry Reflection and rotational symmetry</p>