

# SANTA YNEZ VALLEY CHARTER SCHOOL

## Content Standards

### Geometry

- Demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.
- Write geometric proofs, including proof by contradiction.
- Construct and judge the validity of a logical argument and give counter examples to disprove a statement.
- Know the relationships of lines and segments, such as parallel, skew, intersecting, and perpendicular, and of angles, such as vertical, supplementary, complementary, and linear pairs.
- Know the basic theorems of congruence and similarity.
- Prove that triangles are congruent or similar, and use the concept of corresponding parts of congruent triangles.
- Know and use the triangle inequality theorem.
- Prove and use theorems involving the properties of parallel lines cut by a transversal and the properties of the various quadrilaterals.
- Find and use the measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.
- Prove and solve problems regarding the properties of circles, their chords, secants, tangents, inscribed angles, and the inscribed and circumscribed polygons of circles.
- Know, derive and solve problems involving the perimeter, circumference, area, volume, and surface areas of common geometric figures.
- Compute the perimeters and areas of polygons.
- Compute the volumes and surface areas of solids and know how changes in dimensions affect these measures.
- Know how changes in dimensions affect the perimeter, area, and volume of geometric figures and solids.
- Use coordinate geometry, including the midpoint and distance formulas.
- Know and apply the Pythagorean Theorem to real world situations.
- Compute slopes of lines and know the relationship of the slopes of parallel and perpendicular lines.
- Graph and write the equations of lines, given a point and the slope or given two points.
- Know the basic definitions of right triangle trigonometry and solve for an unknown side or angle in a right triangle.
- Use the law of sines.
- Apply trigonometry to real world situations.
- Know the relationships of sides in the special right triangles (i.e.,  $30^\circ$ - $60^\circ$ - $90^\circ$  and  $45^\circ$ - $45^\circ$ - $90^\circ$ ).

- Draw and build various three-dimensional figures.
- Use lengths and areas to solve various geometric probabilities.
- Perform basic constructions.