

Mathematics Power Standards Grade 10 Geometry

 Corvallis School District 509j

H.1A Algebra and Numeracy: Demonstrate a deep understanding of real numbers and algebraic symbols by fluently creating, manipulating, computing with, and determining equivalent expressions, both numeric and symbolic.
<ul style="list-style-type: none"> H.1A.3 Express square roots in equivalent radical form and their decimal approximations when appropriate. H.1A.5 Factor quadratic expressions limited to factoring common monomial terms, perfect-square trinomials, differences of squares, and quadratics of the form $x^2 + bx + c$ that factor over the integers.
H.2A Algebra: Use linear equations and functions to represent relationships and solve linear equations, linear inequalities, systems of linear equations, and systems of linear inequalities.
<ul style="list-style-type: none"> H.2A.3 Determine the equation of a line given any of the following information: two points on the line, its slope and one point on the line, or its graph. Also, determine an equation of a new line, parallel or perpendicular to a given line, through a given point.
H.1G Geometry: Apply properties of two-dimensional figures.
<ul style="list-style-type: none"> H.1G.1 Identify, apply, and analyze angle relationships among two or more lines and a transversal to determine if lines are parallel, perpendicular, or neither. H.1G.2 Apply theorems, properties, and definitions to determine, identify, and justify congruency or similarity of triangles and to classify quadrilaterals. H.1G.3 Apply theorems of corresponding parts of congruent and similar figures to determine missing sides and angles of polygons. H.1G.4 Use trigonometric ratios (sine, cosine and tangent) and the Pythagorean Theorem to solve for unknown lengths in right triangles. H.1G.5 Determine the missing dimensions, angles, or area of regular polygons, quadrilaterals, triangles, circles, composite shapes, and shaded regions. H.1G.6 Determine if three given lengths form a triangle. If the given lengths form a triangle, classify it as acute, right, or obtuse. H.1G.7 In problems involving circles, apply theorems and properties of chords, tangents, and angles; and theorems and formulas of arcs and sectors.
H.2G Geometry: Apply properties of three-dimensional solids.
<ul style="list-style-type: none"> H.2G.1 Identify, classify, model, sketch, and label representations of three-dimensional objects from nets and from different perspectives. H.2G.2 Identify and apply formulas for surface area and volume of spheres; right solids, including rectangular prisms and pyramids; cones; and cylinders; and compositions thereof. Solve related context-based problems. H.2G.3 Identify and apply formulas to solve for the missing dimensions of spheres and right solids, including rectangular prisms and pyramids, cones, and cylinders, both numerically and symbolically.
H.3G Geometry: Transform and analyze figures.
<ul style="list-style-type: none"> H.3G.1 Recognize and identify line and rotational symmetry of two-dimensional figures. H.3G.2 Identify and perform single and composite transformations of geometric figures in a plane, including translations, origin-centered dilations, reflections across either axis or $y = \pm x$, and rotations about the origin in multiples of 90°. H.3G.3 Apply a scale factor to determine similar two- and three-dimensional figures, are similar. Compare and compute their respective areas and volumes of similar figures. H.3G.4 Apply slope, distance, and midpoint formulas to solve problems in a coordinate plane.