

Missouri High School Geometry
 Mathematics Course Level Expectations, 2008

Geometry Performance Standard	Boardworks High School Geometry presentation
Geometric and Spatial Relationships	
1. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships	
use inductive and deductive reasoning to establish the validity of geometric conjectures, prove theorems and critique arguments made by others	<p>The Pythagorean Theorem Identifying right triangles Pythagorean triples Similar right triangles Calculating sides of a triangle Finding the length of diagonals using the Pythagorean Theorem Finding the height of triangles using the Pythagorean Theorem Using the Pythagorean Theorem to solve problems in context Finding the distance between two points using the Pythagorean Theorem Finding the diagonal in a rectangular prism Triangles Right triangles The sine ratio The cosine ratio The tangent ratio Trigonometry summary The area of a triangle The law of sines The law of cosines Applying trigonometry Inverses in trigonometry Opposite and adjacent sides The sine, cosine and tangent of any angle Trig value functions on the unit circle Sin, cos and tan of 30, 45 and 60. Parts of a circle Angles in a circle</p>

2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems	
make conjectures and solve problems involving 2-dimensional objects represented with Cartesian coordinates	<ul style="list-style-type: none"> The distance between two points The midpoint of a line segment Slopes and intercepts The equation of a straight line Using circle properties
3. Apply transformations and use symmetry to analyze mathematical situations	
use and apply constructions and the coordinate plane to represent translations, reflections, rotations and dilations of objects	<ul style="list-style-type: none"> Reflection symmetry Rotational symmetry Reflection and rotational symmetry Reflection symmetry in 3-D shapes Rotational symmetry in 3-D shapes Translation Rotation Combining transformations Dilation The center of dilation
identify types of symmetries of 2- and 3- dimensional figures	<ul style="list-style-type: none"> Reflection symmetry Rotational symmetry Reflection and rotational symmetry Reflection symmetry in 3-D shapes Rotational symmetry in 3-D shapes
4. Use visualization, spatial reasoning and geometric modeling to solve problems	
draw and use vertex-edge graphs or networks to find optimal solutions and draw representations of 3-dimensional geometric objects from different perspectives	-
Measurement	
2. Apply appropriate techniques, tools and formulas to determine measurements	
solve problems of angle measure, including those involving triangles or other polygons and of parallel lines cut by a transversal	<ul style="list-style-type: none"> Lines Angles Using angles Triangles Quadrilaterals Polygons Interior and exterior angles of polygons Using polygons

<p>determine the surface area, and volume of geometric figures, including cones, spheres, and cylinders</p>	<p>Prisms Pyramids Cylinders, cones and spheres Using length, area and volume formulas Surface area of rectangular prisms Volume of right rectangular prisms</p>
<p>use unit analysis to solve problems</p>	<p>–</p>