

Connecticut High School Geometry Curriculum Mapping

Geometry and Measurement Grade 9–12 CORE	Boardworks High School Geometry presentation
3.1 Use properties and characteristics of two- and three-dimensional shapes and geometric theorems to describe relationships, communicate ideas and solve problems.	
a. Investigate relationships among plane and solid geometric figures using geometric models, constructions and tools.	
(1) Use models and constructions to make, test and summarize conjectures involving properties of geometric figures.	Constructing triangles Constructing bisecting lines and angles Using construction
(2) Use geometric properties to solve problems in two and three dimensions.	Area formulas and calculations Angles Angles in a circle Cylinders, cones and spheres Edges of rectangular prisms Interior and exterior angles in a polygon Lines Polygons Prisms Pyramids Quadrilaterals Right triangles Surface area of rectangular prisms The area of a circle The area of a sector The area of a triangle The length of an arc Triangles Using length, area and volume formulas Using area formulas Using congruence and similarity Using angles Using polygons Volume of right rectangular prisms

(3) Determine and compare properties of classes of polygons.	Polygons Interior and exterior angles in a polygon
b. Develop and evaluate mathematical arguments using reasoning and proof.	
(1) Recognize the validity of an argument.	–
(2) Create logical arguments to solve problems and determine geometric relationships.	–
3.2 Use spatial reasoning, location and geometric relationships to solve problems.	
a. Verify geometric relationships using algebra, coordinate geometry and transformations.	
(1) Interpret geometric relationships using algebraic equations and inequalities, and vice versa.	–
(2) Describe how a change in measurement of one or more parts of a polygon or solid may affect its perimeter, area, surface area and volume and make generalizations for similar figures.	Area formulas and calculations Polygons Using length, area and volume formulas
(3) Apply transformations to plane figures to determine congruence, similarity, symmetry and tessellations.	Congruence and similarity Combining transformations Using congruence and similarity Reflection symmetry Rotational symmetry Rotation Translation Reflection and rotational symmetry Tessellation
3.3 Develop and apply units, systems, formulas and appropriate tools to estimate and measure.	
a. Solve a variety of problems involving one-, two- and three-dimensional measurements using geometric relationships and trigonometric ratios.	
(1) Select appropriate units, scales, degree of precision, and strategies to determine length, angle measure, perimeter, circumference and area of plane geometric figures.	Radius and circumference The area of a circle The length of an arc The area of a sector Area formulas and calculations Parts of a circle Angles Interior and exterior angles in a polygon Angles in a circle

<p>(2) Use indirect methods including the Pythagorean Theorem, trigonometric ratios and proportions in similar figures to solve a variety of measurement problems.</p>	<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 Right triangles The sine ratio The cosine ratio The tangent ratio Trigonometry summary Applying 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 degrees</p>
<p>(3) Judge the reasonableness of answers to direct and indirect measurement problems.</p>	<p>–</p>
<p>(4) Use two-dimensional representations and formal and informal methods to solve surface-area and volume problems.</p>	<p>Area formulas and calculations Using area formulas Using length, area and volume formulas</p>