

Draw, construct, and describe geometrical figures, and describe the relationships between them (7.G.1-3)	
Standard 7.G.1: Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Use a scale or scale factor to find a measurement. • Find actual lengths and areas from a scale drawing, using a scale factor. • Create multiple scale drawings from the original model or drawing, using different scales. 	
Related Standards: Current Course	Related Standards: Future Courses
7.RP.1 unit rates; 7.RP.2 proportional reasoning	8.EE.6 , 8.G.3 , 8.G.4 , SII.G.SRT.1 (7.G.1 lays foundation for dilations in 8.G and SII.G.SRT)

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Find areas of geometric figures. (6.G.1) • Recognize and represent proportional relationships (7.RP.2)
Academic Vocabulary
Scale, scale factor, scale drawing, enlarge, reduce
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322

Draw, construct, and describe geometrical figures, and describe the relationships between them (7.G.1-3)	
Standard 7.G.2: Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Draw precise geometric figures based on given conditions. • Discover the conditions necessary for a set of angles (sum of 180°) or sides to make a triangle (Triangle Inequality Theorem) by exploring different combinations of sides and angles. • Explore conditions that determine unique triangles, multiple triangles, or no triangles (Foundational for future coursework involving Triangle Congruence Theorem). 	
Related Standards: Current Course	Related Standards: Future Courses
7.EE.4 solving equations/inequalities; 7.G.5 facts about angles	8.G.1 , 8.G.2 , 8.G.5 , 8.G.6 , SI.G.CO.8 , SI.G.CO.12 , SI.G.CO.13 , SII.G.SRT.3 , SII.G.CO.10 , SII.G.CO.11

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Drawing precise angles using a protractor and ruler (4.MD.6)
Academic Vocabulary
Angle (\angle), angle measure ($m \angle$), acute, obtuse, right, degrees ($^\circ$), polygon, vertex, line segment (side AB of $\triangle ABC$).
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322

Draw, construct, and describe geometrical figures, and describe the relationships between them (7.G.1-3)	
Standard 7.G.3: Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Describe the different ways to slice a 3D figure (i.e. vertical slice, horizontal slice, and angled slice). • Describe the different 2D cross-sections that will result depending on how you slice the 3D figure. 	
Related Standards: Current Course	Related Standards: Future Courses
	SII.GMD.3 , SIII.G.MG.1 , SIII.G.GMD.4

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Understand attributes of various polygons (1.G.2, 2.G.1, 3.G.1, 5.G.1, 5.G.2)
Academic Vocabulary
Cube, Right rectangular prism, Right rectangular pyramid, Cross-sections, Two-dimensional figure (2D), Three-dimensional figure (3D), Plane sections
Resources:
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume (7.G.4-6)	
Standard 7.G.4: Know the formulas for the area and circumference of a circle, and solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Use the formulas for area and circumference of a circle to solve problems. • Know the relationship between diameter, circumference, and pi. • Show and explain how the circumference and area of a circle are related. 	
Related Standards: Current Course	Related Standards: Future Courses
	8.G.9 , SII.G.C (7.G.4 lays foundation for Circles in SII.G.C), SIII.G.MG.1

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Understand area and perimeter (3.MD.5 and 3.MD.8) • Attributes of a circle (half circle, quarter circle) (2.G.3)
Academic Vocabulary (This is students first experience with the following academic vocabulary)
Circumference, Radius, Diameter, Center, Area, Pi (π)
Resources:
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322

Solve real-life and mathematical problems involving angle measurement, area, surface area, and volume (7.G.4-6)	
Standard 7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write, and use them to solve simple equations for an unknown angle in a figure.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Define and understand properties of supplementary, complementary, vertical and adjacent angles. • Use properties of supplementary, complementary, vertical and adjacent angles to solve for unknown angles in a figure. • Write and solve equations based on a diagram of intersecting lines with some known angle measures. 	
Related Standards: Current Course	Related Standards: Future Courses
7.EE.1 , 7.EE.2 , 7.EE.3 , 7.EE.4a	8.G.1b , 8.G.2 , 8.G.5 , 8.G.7 , 8.G.8 , SII.G.CO.9

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Solve multi-step equations (7.EE.4a) • Properties of angle addition (4.MD.7) • Attributes of angles (4.MD.5)
Academic Vocabulary
Supplementary, complementary, vertical angles, adjacent angles, Intersecting lines
Resources:
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322

Solve real-life and mathematical problems involving angle measurement, area, surface area, and volume (7.G.4-6)	
Standard 7.G.6: Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Decompose two-dimensional composite shapes into triangles, quadrilaterals, and polygons to find the area. Decompose three-dimensional composite shapes into cubes, and right prisms to find volume. Decompose three-dimensional composite shapes whose faces are triangles, quadrilaterals, and polygons, to find the surface area. Find volumes of cubes, right prisms, and composite polyhedra including those found in real-world contexts. 	
Related Standards: Current Course	Related Standards: Future Courses
7.G.1 Solve problems involving scale drawings; 7.G.5 angle properties	8.G.9 , SII.G.GMD.1 , SII.G.GMD.3 , SIII.G.MG.1

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> Find area of rectangles (4.MD.3), special quadrilaterals, triangles, and polygons (6.G.1) Find the volume of rectangular prisms (5.MD.5) Find surface area using nets (6.G.4) Find volume of rectangular prism (6.G.2)
Academic Vocabulary
Area, surface area, volume, slant height, base, altitude, height
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5170#71322