

UNIT OF STUDY

Title: Unit 10	Subject/Course: Geometry	Length: 10 days
Topic: Area/volume of geometric figures	Grade: 10th	Designer: Boyd
UNIT GOALS AND EXPECTATIONS		
IMPORTANT CONCEPTS/UNDERSTANDINGS: <ul style="list-style-type: none"> • Apply appropriate formulas to find area, volume, and surface area of geometric figures • Use appropriate units including correct exponents • Explore platonic solids as three dimensional figures 	ESSENTIAL QUESTIONS: <ul style="list-style-type: none"> • How do you know which formula to use? • What unit do you use for area, volume, surface area, etc? • What are faces, edges, and vertices of platonic solids? 	
STUDENT LEARNING EXPECTATIONS: <ul style="list-style-type: none"> • M.3.G.2 Apply, using appropriate units, appropriate formulas to solve problems involving geometric figures • M.3.G.3 Relate changes in the measurement of one attribute of an object to changes in other attributes 	<ul style="list-style-type: none"> • R.4.G.4 Identify the attributes of the five platonic solids 	
SPECIFIC DECLARATIVE KNOWLEDGE – What I know <ul style="list-style-type: none"> • Vocabulary: cross section, faces, vertices, edges, platonic solid, pyramid, cylinder, rectangular prism, cone, sphere, pi, circumference, area, lateral area, surface area, volume • Compare measurements when an attribute of an object changes (doubles, triples, halves, etc.) • Use linear, square, and cubic unit representation, and understand when each is used • Identify the polygons that form the faces of the platonic solids 	SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do <ul style="list-style-type: none"> • Use estimations of pi and exact to find circumference and area of circles • State conclusions about changes in measurements when a length changes • Apply appropriate formulas to find area, volume , lateral area, and surface area of geometric figures • Determine the shape formed by the intersection of a plane and a solid • Define faces, vertices, and edges and determine the number of each for the platonic solids 	
UNIT ASSESSMENTS		
(Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)		
<ul style="list-style-type: none"> • TLI Open Response 		
Traditional Assessments: <ul style="list-style-type: none"> • Surface area and volume of geometric figures Quiz • Geometric pattern Quiz • Pythagorean Theorem Quiz • Geometry formula sheet Test • Unit 10 Test • TLI module test • Vocabulary Quiz 	Other Evidence of Learning: <ul style="list-style-type: none"> • Homework • Class work 	

ACTIVITIES AND LEARNING EXPERIENCES	Resources
<ul style="list-style-type: none"> • Introduce vocabulary using 4-step strategy • Use real world sites to apply area, volume, surface area, and lateral area formulas (such as pyramid in Memphis, top of Verizon Arena, the Earth, Epcot Center, etc.) • Investigating Surface Area Activity (using nets) • Use 3-D platonic solids to show the number of faces, edges, and vertices and then show how Euler’s theorem can be used to prove the number of faces, edges, and vertices of each platonic solid 	<ul style="list-style-type: none"> • Mastery Math Notebook • Textbook pg. 727
Career Connections	
Architect, Mineralogist, Manufacturers, Archeologist, Volcanologist, Meteorologist	