Grade 7 Math

Unit #7 - Angles, Surface Area, Volume Prisms

Unit Description

In this unit, students investigate whether sets of angle and side length measurements determine unique triangles or multiple triangles, or fail to determine triangles. Students also study and apply angle relationships, learning to understand and use the terms “complementary,” “supplementary,” “vertical angles,” and “unique” (MP6). The work gives them practice working with rational numbers and equations for angle relationships. Students analyze and describe cross-sections of prisms, pyramids, and polyhedra. They understand and use the formula for the volume of a right rectangular prism, and solve problems involving area, surface area, and volume (MP1, MP4). Students should have access to their geometry toolkits so that they have an opportunity to select and use appropriate tools strategically (MP5).

Note: It is not expected that students memorize which conditions result in a unique triangle, are impossible to create a triangle, or multiple possible triangles. Understanding that, for example, SSS information results in zero or exactly one triangle will be explored in high school geometry. At this level, students should attempt to draw triangles with the given information and notice that there is only one way to do it (or that it is impossible to do).

Unit Essential Questions

1) How do you find unknown angle measurements in angle diagrams?
2) How do you calculate the volume and surface area of prisms?
3) How do you apply volume and surface area?

Main Content Standards Covered in Unit

7.G.A Draw, construct, and describe geometrical figures and describe the relationships between them.

7.G.B Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

7.G.A.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.

7.G.B.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.

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Books, Articles or Other Resources
Family Letter Parent Resources (Imagine Learning Resources)(Maybe Khan Academy?)

Unit Assessments (80% of overall unit letter grade)	
Assessment Name	*Assessment Type*
Quiz	Formative
Test	Summative
Food Truck Project	Project
Skill Quiz	Formative

Unit PRIDE Score (20% of overall unit letter grade)
PRIDE will be assessed through: ● Homework ● Classwork ● PRIDE Reflections ● Class Participation ● DeltaMath