7th Grade Unit 4: Making Relevant Connections with Geometry

Overview:

In the fourth unit of seventh-grade math, students will build on their previous knowledge of drawing geometric figures, with a focus on triangles, using rulers and protractors. They will also write and solve equations related to angle relationships, area, volume, and surface area of basic solid figures. The challenges include understanding geometric figures, solving equations involving them, and recognizing the real-world applications of geometry. Students will further deepen their understanding of area, exploring circles' area and circumference. They will solve real-life problems involving surface area and volume of right prisms. Students will also write and solve equations involving angle measures, study circles, and use proportional reasoning to understand the relationship between diameter and circumference.

Learning Targets:

In Unit 4, students will:

- Measure angles in whole non-standard units
- Measure angles in whole number degrees using a protractor.
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve equations for an unknown angle in a figure.
- Explore and describe the relationship between pi, radius, diameter, circumference, and area of a circle to derive the formulas for the circumference and area of a circle.
- Given the formula for the area and circumference of a circle, solve problems that exist in everyday life.
- Solve realistic problems involving the surface area of right prisms and cylinders.
- Describe the two-dimensional figures (cross-sections) that result from slicing three-dimensional figures.
- Explore volume as a measurable attribute of cylinders and right prisms.

Key Vocabulary: (linked to GA DOE Interactive Glossary)

Adjacent Angles	Area of a Circle	Circumference	Composite figures
Congruent	Cross-Section	Irregular Polygon	Parallel Lines
Pi	Regular Polygon	Right Rectangular Prisms	Supplementary Angles
Surface Area	Vertical Angles		

Supporting Resources:

http://ctlslearn.cobbk12.org/	Circles	Polygons
https://gavirtual.instructure.com/courses/34330		
Angles Area of Polygons	Classify Angles	Surface Area
Pi		