

Unit 4 Geometry

Grade 6 Math

Description:

In this unit, students solve for unknowns in area, surface area, and volume problems. They find the area of triangles and two-dimensional figures and use formulas to find the volume of right rectangular prisms with fractional edge lengths. They use coordinates as they draw lines and polygons in the coordinate plane, and find the distance between points as they solve real-world problems. Students represent figures using nets.

Standards:

Geometry	
Solve real-world and mathematical problems involving area, surface area and volume.	
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l \cdot w \cdot h$ and $V = b \cdot h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Enduring Understandings:

- Tools provide ways of thinking about geometric objects and processes.

Essential Questions:

- What is a real world application of surface area?
- How is a net utilized to represent a 3D figure?

- Geometry offers ways to visualize, to interpret, and to reflect on our physical environment.
- A net is a plane figure that can be folded to make a solid figure.
- Solid figures can be identified and classified by the number of faces, edges, and vertices.
- How is volume affected by a change in one dimension?
- What are the similarities and differences between area and surface area?
- What is the relationship between the areas of rectangles and triangles?
- How is finding the volume of a rectangular prism similar to finding the volume of a pyramid?
- How can you estimate the volume or surface area of a prism or a pyramid?