NAME_____

Module 13 **Perimeter, Area, and Volume**
Lesson 5 **Volume: Prisms, Cylinders, and Spheres**

Lesson Notes 13.5

Lesson Objectives

- Model the differences between covering the faces (surface area/nets) and filling the interior (volume).
- Derive and use formulas for the volume of prisms, cylinders, and spheres and justify using geometric models and common materials.
- Use cubic units to find the volume of prisms, cylinders, and spheres.
- Demonstrate understanding of when to use linear units to describe perimeter, square units to describe area or surface units, and cubic units to describe volume, in real-world situations.
- Compare and contrast the differences among linear units, square units, and cubic units.

Subtopic 1 Volume of a Rectangular Prism

1 Find the volume of wood in this toy block that is a cube with a length of three centimeters.

3 cm

2 Find the volume of the lunch box.

7 in.

4 in.

8 in.

Subtopic 2 Volume of Cylinder and Sphere

Volume of a Cylinder

$V =$ _____

Volume of a _____

$V =$ _____

3 Find the volume of a food canister with a diameter of six inches and a height of nine inches.

4 The radius of Earth's first artificial satellite, Sputnik I, was 29 centimeters. Find the volume of Sputnik I by multiplying with a calculator and by rounding the final answer to the nearest integer.