

Common Core Standards - Resource Page

The resources below have been created to assist teachers' understanding and to aid instruction of this standard.

Domain	Standard: G.GMD.3 - Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. *(Modeling Standard)
<u>Geometric Measurement and Dimension</u> Explain volume formulas and use them to solve problems	<p><u>Questions to Focus Learning</u></p> <p>How can formulas for the volume of solids be applied to solve problems?</p> <p>Real-world situations can require the computation of volumes of solids.</p> <p><u>Student Friendly Objectives</u></p> <p><i>Knowledge Targets</i></p> <p>I know the formula for the volume of a cone. I know the formula for the volume of a cylinder. I know the formula for the volume of a pyramid. I know the formula for the volume of a sphere.</p> <p><i>Reasoning Targets</i></p> <p>I can apply the formula for the volume of a cone, cylinder, pyramid, and sphere to solve problems.</p> <p><u>Vocabulary</u></p> <p>base (B is the area of the base in a 3-dimensional object; b is the base of a face) diameter height lateral edge radius slant height</p> <p><u>Teacher Tips</u></p> <p>Informal arguments for area and volume formulas can make use of the way in which area and volume scale under similarity transformations: when one figure in the plane results from another by applying a similarity transformation with scale factor k, its area is k^2 times the area of the first. Similarly, volumes of solid figures scale by k^3 under a similarity transformation with scale factor k.</p>

Vertical Progression

- G.MG.1 - Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). *(Modeling Standard)
- G.MG.2 - Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). *(Modeling Standard)
- G.MG.3 - Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). *(Modeling Standard)

The above information and more can be accessed for free on the [Wiki-Teacher](#) website.
Direct link for this standard: [G.GMD.3](#)