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.1 - Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.
Geometric Measurement and Dimension **Explain volume formulas and use them to solve problems**	Questions to Focus Learning How are the formulas for the circumference and area of a circle derived? How are the formulas for the volume of cylinders, pyramids, and cones derived? Formulas for circumference, area, and volume can be derived by manipulating figures into simpler shapes. Student Friendly Objectives *Knowledge Targets* I know the formula for the circumference of a circle. I know the formula for the area of a circle. I know the formula for the volume of a cylinder. I know the formula for the volume of a pyramid. I know the formula of the volume of a cone. I know Cavalieri's principle. *Reasoning Targets* I can use dissection, Cavalieri's principle, and/or limits to justify an informal argument for the circumference of a circle, the area of a circle, and the volume of a cylinder/pyramid/cone. Vocabulary Cavalieri's Principle dissection limits (informal) oblique

	Teacher Tips 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. Vertical Progression G.GMD.2 - Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures. G.GMD.3 - Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. *(Modeling Standard)

The above information and more can be accessed for free on the Wiki-Teacher website.
Direct link for this standard: G.GMD.1