New Arizona Math Strand 4 Geometry and Measurement Grades 9-12
Articulated 4MH4-02 Calculate the volume of three-dimensional geometric figures.
Old Arizona Math Standard 4 Geometry Proficiency 2 Grades 9-12
4MP2-PO1 Calculate surface areas and volumes of three-dimensional geometric figures, given the required formulas

Learning objectives: the student will be able to:
• demonstrate understanding of using general formulas to calculate volume of a sphere
• demonstrate understanding of the correct use of a formula for a specific figure
• demonstrate understanding of the vocabulary: volume, surface area, radius, diameter, Pi, square a number, cubic units

Overview:
This is a step-by-step process lesson focusing on working with the formula for determine surface area of spheres. The lesson moves deliberately through several figures and provides needed to time to determine the calculations. The student cannot move forward in the lesson without determining the correct answers. This lesson is available with English and Spanish narrations and scripts.

Classroom Management:
This can be used in large group lessons, small group, or individual assignments. Each student will move through the lesson at differing speeds.

Engaging Students:
Relate the volume of a sphere to the volume of the geodesic sphere at Epcot Center in Disney World.

Follow-up:
Be sure to take advantage of the following opportunities. Find more mathematics teaching resources at http://www.evtpc.org/tutor. DIG DEEPER explores Cavalieri’s Principle. In SO WHAT discover the connection between ball bearings and slugs. TALK ABOUT IT students have to name the object that has the least surface area holding two separate volumes.

Assessment:
Multiple-choice questions must be correctly answered in order to finish the lesson.