



TEACHER PAGE

Lesson: Surface Area of Spheres

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Arizona Math Strand 4 Geometry and Measurement

Grade: 9-12

New Articulated 4MH4-03 Calculate the surface area of three-dimension geometric figures; **4MH1-03** Make a net to represent a three-dimensional object; **4MH1-04** Make a three-dimensional model from a net.

Old Arizona Math Standard 4 Geometry Proficiency 2

Grade: 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 surface area of spheres
- demonstrate understanding of the correct use of a formula for a specific figure
- demonstrate understanding of the vocabulary: surface area, radius, diameter, Pi, square of a number.

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 (See teacher note). 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:

Give students the opportunity to think about the surface area of a sphere in a practical setting. For example, have them consider the amount of surface material required to make a basketball or the amount of plastic material required to make a ping-pong ball.

Follow-up:

Find more mathematics teaching resources at: <http://www.evtpc.org/tutor>
Investigate Soccer Balls in DIG DEEPER. Investigate golf balls in SO WHAT.
Investigate and compare whiffle balls and golf balls in TALK ABOUT IT.

Teacher Note:

The program for this lesson does not have a calculator built in. Be sure that students have a scientific calculator available to them at all times.

Assessment:

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

