



TEACHER PAGE

Lesson: Surface Area of Cones

Teacher-Author: Judy Reihard
ASSET Animator: Ziyad Saeed

Arizona Math Standard 4 Geometry Proficiency 2 **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 cones
- demonstrate understanding of the correct use of a formula for a specific figure
- demonstrate understanding of the vocabulary: base, lateral area, surface area, radius, diameter, Pi, slant height and altitude of cone, square of a number.
- demonstrate understanding of the Pythagorean Theorem

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 narration and script.

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 cone in a practical setting. Use circle sectors of many different sizes to give students experience in building many different shaped and sized cones and to help them understand what the lateral area of a cone really is.

Follow-up:

Each of So What, Dig Deeper, and Talk About afford opportunities for follow-up and extensions. Take advantage of these opportunities. Find more mathematics teaching resources at: <http://www.evtpc.org/tutor>

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

