



## TEACHER PAGE

**Lesson: Surface Area of Prisms Teacher-Author: Judy Reihard  
ASSET Animator: (Tim) Sumongol Viriyaampaivong**

**New Arizona Math Strand 4 Geometry and Measurement Grades 8-12**  
**Articulated 4M84-03** Calculate the surface area of rectangular prisms or cylinders;  
**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 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 surface areas of figures
- demonstrate understanding of the correct use of a formula for a specific figure
- demonstrate understanding of the vocabulary: faces, bases, lateral faces, rectangular prisms, triangular prisms, hexagonal prisms, trapezoidal prisms, apothem

### **Overview:**

This is a step-by-step process lesson focusing on working with the formula for determine surface area of prisms. 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. There are English, Navajo and Spanish narrations and scripts. Also, find Spanish/English math dictionary: [www.math2.org/spanish/eng-spa.htm](http://www.math2.org/spanish/eng-spa.htm)

### **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:**

Conduct small group discussions on the importance of surface area to sports equipment. Student groups should develop a general statement about that importance and cite examples to illustrate their statements.

### **Follow-up:**

In sports, such as kayaking -- where speed is important, designers are conscious of the surface area of that equipment. The surface area of a three-dimensional object is the sum of the areas of its outer surfaces. If pieces of sports equipment have less surface area, they will have less friction with anything they contact. The reduced friction allows it to travel faster. In what other sports would this be a factor? The DIG DEEPER section furnishes a different dimension of surface area of figures with "cross sections." Teaching resources at: <http://www.evtpc.org/tutor>

### **Assessment:**

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

