New Arizona Math Strand 4 Geometry and Measurement Grades 8, 9-12

Articulated 4MH1-03 Make a net to represent a three-dimensional object; 4MH1-04 Make a three-dimensional model from a net; 4M81-03 Recognize the three-dimensional figure represented by a net.

Old Arizona Math Standard 4 Geometry, Proficiency 1 Grades 9-12

4MP1-PO3 Recognize the three-dimensional figure represented by a two-dimensional drawing.

Learning Objectives: the student will be able to:
- distinguish a sphere form other three-dimensional figures
- identify the attributes of a sphere
- give examples of representations of the net of a sphere

Overview:
Students will see the attributes of a sphere identified and they will be shown representations of the net of a sphere. They will relate the concept of surface area to the concept of net. Students will have the opportunity to answer questions related to the attributes of a sphere. They will be shown practical examples of a sphere. The final frame in the SHOW of this lesson asks students to demonstrate understanding related to the five three-dimensional figures (prism, cylinder, cone, pyramid and sphere) they have studied.

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:
Students can be encouraged to think of the net of a sphere by using the skin (covering) of a baseball. It is also helpful to take the peel off an orange (if possible, all in one piece).

Follow-up:
Throughout the units related to three-dimensional figures (nets, surface area and volume), the teacher should emphasize the importance of maximizing the volume of a figure while minimizing its surface area. Discuss careers related to the packaging of commercial products to help students identify with the application of nets, surface area, and volume. Consider many different uses of the spherical shape.

Assessment:
Students must be able to identify the attributes of a sphere and they must be able to produce a figure that represents the net of a sphere.