



TEACHER PAGE

Lesson: Circles to Spheres

Teacher-Author: Gene Steer

ASSET Animator: Swaminathan Venkataramani

New Arizona Math Strand 4 Geometry and Measurement Grade 3

Articulated 4M31-02 Name concrete objects and pictures of three-dimensional solids (cones, spheres and cubes; **4M31-03** Describe relationships between 2-D and 3-D objects squares/cubes, circles/spheres, triangles/cones).

Old Arizona Math Standard 4 Geometry Foundations 1 Grades 1-3

4MF1-PO5 Compare attributes of three-dimensional figures.

Materials:

Math manipulatives, individual slates or white boards with appropriate writing tools, wall chart to place circles and spheres on for demonstration.

Learning Objectives: The students will be able to:

- Identify a circle as a two-dimensional shape and a sphere as a three-dimensional figure.
- describe a three-dimensional figure by its attributes
- view drawings of various three-dimensional shapes and compare the attributes among them
- explain the relationship of 2-D circles and 3-D spheres.

Overview and Content:

This lesson enables students to compare and identify how two-dimensional shapes become three-dimensional figures. Students learn that circles are two-dimensional shapes and spheres are three-dimensional figures. Students go to 2 websites that explore the solar system. This lesson has English, Navajo and Spanish narrations and scripts.

Engage students:

Students use manipulatives to compare a ball (sphere) with a flat circle. Display a solar system model and provide opportunity for questions and discovery.

Follow-up, extensions:

Students follow the lesson suggestion in the TALK ABOUT IT1 section on the lower right side of the screen. Students work with a partner to determine how to draw their favorite planet so that it looks three-dimensional and not a flat circle.

Note the use of shadows in the lesson and determine the reason they appear on the screen. Draw squares, rectangles and triangles. Use those shapes to make related three-dimensional figures as modeled in the lesson. Compare the attributes of circles and spheres to other geometric shapes and figures.

Assessment:

Students compare an assortment of shapes and figures to correctly identify those that are two-dimensional and those that are three-dimensional (TRY and SHOW.)

