



TEACHER PAGE

Lesson: Identify Cones **Teacher-Author: Nellie Jo Hendricks**
ASSET Animator: Harue Yoshida

New Arizona Math Strand 4 Geometry and Measurement

Grade 3

Articulated 4M31-O2 Name concrete objects and pictures of three-dimensional solids-- cones, spheres, prisms, cubes; **4M31-03** Describe relationships between two-dimensional and three-dimensional objects.

Old Arizona Math Standard 4: Geometry Foundations 1

Grades 1-3

4MF1PO3, 5 Identify three-dimensional figures by name and/or attribute. Compare attributes of three-dimensional figures.

Materials:

Students should have manipulatives, individual slates or white boards with appropriate writing tools, 20# paper or light tag board, wall chart to place cones for demonstrations.

Learning Objectives: The student will be able to:

- identify cones as a three-dimensional shape
- describe a cone by its attributes of sides and base
- construct cones for various uses demonstrating curved face and a circular base.

Overview:

This lesson enables students to observe, identify and compare cones as three-dimensional figures by name and attribute. This lesson also has English, Navajo and Spanish narrations and scripts. Spanish/English math dictionary available online: www.math2.org/math/spanish/sng-spa.htm

Engage students:

Direct students to tell of a time they attended a birthday party and were given a party hat to wear. Ask them to describe the hats. Ask: "What shape (figure) were the party hats?" Ask students to name other objects with the same shape (figure).

Direct students to tell of a time they went to a swap meet or yard sale and bought a raspada (snow cone). They must describe the shape (figure) of the holder. Ask: "What else have you bought that uses this shape (figure) as a holder?" Inquire: "If you were in the desert and lost your water bottle, describe what you could construct to hold water when you found some."

Content: Students learn that cones are three-dimensional shapes. They are made of a curved face on a circular base. The curved face (or side) meets at a point.

Follow-up, extensions:

After the Internet lesson, direct students to make several cones. Some may be hats, others drinking cups or snow cone holders. Compare the different results noting all have a curved surface and a circular base. If you are able to find an old ice cream cone holder as shown in the DIG DEEPER section of the Internet lesson, display them for the students and use them. Yum. Direct students to make a cone-cup and keep it in their pocket to use for a drink of water. Compare the results of the class members. Keep track of who keeps their cup the longest with careful care. (This may extend to a science lesson on care and maintenance of paper goods.) Look outside on the ranch to find cones, or in the home. Cones in hogans?

Assessment:

After viewing an assortment of figures, students will correctly identify the cone and label its attributes. Students are able to make a functional three-dimensional cone and identify its face and base by the end of this lesson.

