



**TEACHER PAGE**  
**Lesson: Circles 1, 2, 3, 4**  
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**New Arizona Math Strand 4 Geometry and Measurement Grades K, 1, 3 Articulated 4MK1-01** Identify two-dimensional shapes by attribute; Circles 1; **4M11-04** Name common two-dimensional shapes, **4M11-05** Draw two-dimensional shapes, Circles 2; **4M31-02** Name concrete objects and pictures of three-dimensional solids, Circles 3; **4MK4-01** Verbally compare objects according to observable and measurable attributes and **4M11-04** Name common two-dimensional shapes, **4M11-05** Draw two-dimensional shapes, Circles 4.

**Old Arizona Math Standard 4 Geometry** **Grades 1-3**  
**4MF1-PO1** Identify two-dimensional shapes by name and attribute; **4MF1-PO2** Draw two-dimensional shapes; **4MF1-PO3** Identify three-dimensional figures by name and/or attribute; **4MF1-PO4** Compare attributes of two-dimensional shapes.

**Learning Objectives: Students will be able to:**

- identify circles as two-dimensional shapes
- draw circles as two-dimensional shapes
- identify a sphere as a three-dimensional figure
- explain the attributes of circles.

**Overview and Content:**

Circles 1 Curved lines defines a circle. Circles 2 2-D relates that circles are two-dimensional shapes. Circles 3 3-D introduces the idea that flat circles become spheres when they have roundness and weight. Many examples are given, some going (and growing) from 2-D to 3-D. Circles 4 No Angles introduces the concept that one attribute of circles compared to other two-dimensional shapes is that it has no angles. These are very good lessons for students to feel successful and encouraged in mathematics and comfortable with computer interactivity as well as fundamentals of shape and dimension.

**Engage Students:**

Why is a circle not a square? A basketball sometimes comes in a box, but it isn't shaped like a box. Should it be? Hands-on exploration: with cut out circles and balls as spheres, students pick 2-D or 3-D categories to place their shapes in as a lead into learning about two-dimensional and three-dimensional shapes.





**Follow-up:**

Circles 1 DIG DEEPER sends students to a site where they count circles and beads. Students play Hokey Pokey in the Circles 2 TALK ABOUT IT! Make chain circles in Circles 3 DIG DEEPER and name games that use spheres in the TALK ABOUT IT! In the Circles 4 DIG DEEPER pilots look at circles and students look at a Frank Lloyd Wright building for circles and spheres.

**Assessment:**

Circles 4; students must know that circles have not straight lines or angles. In Circles 3 students need to be able to select circles and spheres from among other shapes. In circles 2 students will make a large and a small circle selected from among other shapes. In Circles 1 students will need to know the basic shape of a circle.

