



## LESSON PLAN 1: SOLIDS

**OBJECTIVES:** For all four levels.

1. Describe, model, draw and classify geometric solids.
2. Discuss surfaces, edges and corners.
3. Relate geometric solids to the real world.
4. Use isometric dot paper to reproduce and enlarge plane and solid figures.

**NOTE:** Read the Math History below to the class. Students may research and write a brief report on these events for extra credit. Also, be sure each student has a Math Notebook. This can be a purchased three-prong pocket folder, or have students make one for a math art project. Directions for making a folder from a brown grocery bag can be found in *Math Phonics™—Multiplication*, page 7. Keep flash cards, worksheets, clue words, definitions, math spelling words and wall charts here.

**MATH HISTORY:** Geometry literally means "earth measure." The Egyptians gave us many of the early developments in geometry. They did measure the Earth after the annual flooding of the Nile to find land boundaries destroyed by the floods. Although they had only primitive tools, they built the pyramids with great precision. The Greeks reached some of the same conclusions as the Egyptians, but they were more interested in proving why something worked than in using it in the real world.

**LEVEL 1:** Use for third grade or as needed.

1. Introduce six solids.
2. Discuss flat and curved surfaces.

**CLASSROOM PRESENTATION:** Solids have thickness—plane figures do not. Bring models of the six solids to the classroom. Show flat and curved surfaces.

sphere: tennis ball, etc., one curved surface

hemisphere: orange cut in half, globe (Point out each hemisphere.) one curved, one flat surface

cylinder: soup can or mailing tube, two flat, one curved surface

cone: pointed ice cream cone, one flat, one curved surface

cube: alphabet blocks, dice, sugar cubes, storage cube, Rubik's Cube™, six flat surfaces

rectangular solid: shoe box, cereal box, six flat surfaces

A cube is a rectangular solid with all edges the same length.

**TAKE-HOME:** Two sets of flash cards are on page 12. The first six cards are for this lesson. The others are for Lesson 2. Place in a zip-type bag in the math folder to study at home or school. Have a class aid or volunteer check students verbally. Give points to students who can name all the solids correctly. Worksheet A, page 17.

**WALL CHART:** Enlarge, color and laminate one uncut set of Level 1 flash cards. Use it as a wall chart.

**OPTIONAL:** Math Spelling Test  
Spelling words: sphere, hemisphere, cylinder, cone, cube, rectangular solid