

## **3D Shapes (K-2)**

**Kindergarten: Standard 4:** Shapes can be described by characteristics and position and created by composing and decomposing

**First Grade: Standard 4:** Shapes can be described by defining attributes and created by composing and decomposing

**Second Grade: Standard 4:** Shapes can be described by their attributes and used to represent part/whole relationships

### **Activity:**

The 3D shape lesson can be adapted for grades Kindergarten, 1<sup>st</sup>, and 2<sup>nd</sup>. All lessons begin with the creation of the shapes. For Kindergarten, the coloring and creation of the shapes should be done the day before as a separate activity. This lesson is designed so that the fellow can solely teach the lesson.

### **Materials:**

- Paper
- Glue or tape
- Scissors
- Crayons

### **Objective:**

The objective of this lesson is to learn about 3D shapes: their names, attributes, and 2D counterparts. Additionally, the 3D shapes created can be used to introduce simple patterns to younger students.

### **Procedure for Building the 3D shapes:**

The following are the procedures for creating the 3D shapes. For younger students, it is recommended that an additional day is set aside beforehand to create the shapes used in the lesson. Students can either cut the templates out or the instructor can cut the templates out beforehand. If students are having difficulties gluing or taping the edges, have an instructor available for assistance. It is additionally recommended that the instructor have pre-constructed shapes available for reference.

1. Print 3D shape templates for desired shapes
2. Cut templates out
3. Color templates
4. Fold along lines
  - a. Attach edges together with glue or tape

### **Optional Video Addition:**

If desired by the instructor, the following video can be played going over what spheres, cylinders, cones and cubes look like along with everyday objects that represent these shapes.

<http://www.youtube.com/watch?v=K9L9l86N-xM>

### **Kindergarten Lesson:**

Have students work in groups of four or five students, putting all of their 3D shapes in the middle of their group. Begin by discussing the concept of sorting with the students and asking for their ideas of different ways to sort items. Tell each group to sort their shapes however they want. Possible sorting ideas could be grouping by shape or grouping by color. After each group is done sorting have them explain how they grouped their shapes and if they can think of another way to group their shapes.

Next, have each student retrieve their shapes and work individually. Instruct students to listen to directions and then arrange their shapes as instructed. During this activity ABAB patterns or other simple patterns or groupings could be introduced.

### **First Grade Lesson:**

Begin by reviewing various 2D shapes and discussing their 3D counterparts. Introduce new 3D shapes that have not been learned previously. Ask students to discuss with a partner the differences between 2D and 3D shapes and have groups share their ideas with the class.

Next, have students individually work with their shapes to come up with a table comparing the similarities and difference between the 2D and 3D shapes. Share examples with the class after giving students time to work on their own.

### **Second Grade Lesson:**

Begin by discussing as a class some of the defining attributes of each 3D shape. Have students try to think of ways to combine the shapes they have into new shapes that have various defining attributes. Let students work in pairs using their 3D shapes to create new shapes with different defining attributes.

Next, let students work individually to create composite shapes from their 3D shapes. Let students share their new shapes with each other and use defining attributes to describe their new shapes.

### **Center Extension:**

Once the shapes have been used in the lessons, centers can be made using the leftover shapes. Some center ideas are:

- Matching shape names or defining attributes or 2D equivalents to the 3D shapes
- Creating patterns with the shapes
- Grouping shapes into prearranged groups and new groups