

THREE DIMENSIONAL SHAPES

Subject

Mathematics

Prepared By

[Instructor Name]

Grade Level

3

Overview

This lesson plan covers teaching content for;

1. Identifying and labelling 3-Dimensional shapes
2. Identifying the attributes and uses of 3-D shapes in your environment
3. Representing shapes from different perspectives,
4. Distinguishing between open and closed shapes
5. Word problems involving 3-Dimensional shapes

Objectives

Students should be able to;

1. Identify and label three-dimensional shapes
2. Distinguish between open and closed shapes
3. Identify the uses of three-dimensional shapes in your environment.
4. Describing attributes and parts of two- and three-dimensional shapes
5. Investigating and predicting the results of putting together and taking apart two- and three-dimensional shapes
6. Recognizing and representing shapes from different perspectives
7. Recognizing geometric shapes and structures in the environment and specifying their location

Activity Starter/Instruction

1. The teacher will begin by asking students to describe the 2D shapes that have already been learned, being sure to guide students into remembering that these shapes are "flat." (formative assessment)
2. What 2D shapes can you name? (rectangle, square, circle, triangle, etc.)
3. How do you know this shape is 2D? (it's flat)
4. How many sides does a square have? (alternate for all other shapes)
5. How many corners (vertices) does a triangle have? (alternate for all other shapes)
6. As students are responding to the questions above, the teacher can begin filling answers in on a 2D shape anchor chart for easy comparison of the 2D and 3D shapes discussed later in the lesson.
7. The teacher should provide a visual of each 2D shape as the students discuss them as either a real object or drawing on the anchor chart.

Teacher Guide

Day 1/ Lesson 1: 25 Mins

1. What is a three-dimensional shape?
2. In geometry, a three-dimensional shape can be defined as a solid figure or an object or shape that has three dimensions – length, width and height.
3. Unlike two-dimensional shapes, three-dimensional shapes have thickness or depth.
4. The attributes of a three-dimensional figure are, faces, edges and vertices. The three dimensions compose the edges of a 3D geometric shape.
5. A cube, rectangular prism, sphere, cone and cylinder are the basic 3-dimensional shapes we see around us.
6. The teacher will then show the students a model of a cone, cube, cylinder, and sphere and ask students to explain how these shapes are different than the 2D shapes, being sure to guide students if they are unable to realize that these shapes are not flat.

Materials Required

- Blank sheet
- 3-D Shapes (cones, cylinders, cubes, etc.)
- Pencil
- Anchor chart
- Whiteboard
-

Additional Resources

- <https://www.splashmath.com/math-vocabulary/geometric-shapes/dimensional>
- <https://www.cpalms.org/Public/PreviewResourceLesson?resourceID=123456>
- <http://mathathome.org/lessons/shape-of-things/>

Additional Notes

Guided Practice

Day 1/ Lesson 1: 20 Mins

1. Students can practice sorting real world examples of 3D shapes in a center. (This could also be done independently at their own seats)
2. The teacher can have 4 sorting mats labeled with an example of a 3D shape and its name along with multiple real examples (or real world pictures of examples) of 3D shapes for students to sort.
3. Explain to students that they will cut out the shapes on the right side and glue them in the correct box according to what shape they are on the left.
4. The teacher will circulate to help students and make sure the concept is understood.

Assessment Activity

Guided Practice

Day 1/ Lesson 1: 15 Mins

1. 3-dimensional: A shape having three dimensions (length, width and height)
2. Cone: A solid shape with a circular base and a curved surface that tapers to a point (e.g., "A cone is like a party hat.")
3. Sphere: A ball. A three-dimensional solid that is perfectly round (e.g., "A sphere is like a bouncy ball.")
4. Prism: A solid three-dimensional shape with two identical bases (e.g., "A prism is a tall building.")
5. Cylinder: A solid shape with one curved surface and two identical bases (e.g., "A can of pop is a cylinder.")
6. Cube: A solid shape that has six square faces all equal in size, eight vertices and 12 equal edges (e.g., "A cube is like the dice you drop.")

Assessment Activity

1. Ask pupils to make a table of 3-D objects.
2. They must start by writing as many 3-D shapes that they know in the first column.
3. In the second column, they must make a drawing of a real object with that shape.

-
7. Explain to students that we call these shapes 3-dimensional shapes and that they are solid.

8. Ask students the following:

9. Can you name any of these 3D shapes? (cone, cube, cylinder, sphere)

10. Why do you think these shapes are 3D and not 2D? (they are solid)

11. How many sides do you think a cube has? Why? (alternate for all other shapes)

12. How many corners (vertices) do you think a cylinder has? Why? (alternate for all other shapes)

13. The teacher should record student answers on another class anchor chart for 3D shapes.

Assessment Activity

1. Ask the pupils to identify open and closed 3-D shapes.
 2. Discuss how the shapes differ, for example how many faces, vertices and edges each has.
 3. Then ask the pupils to cut open an empty cuboid shaped container and examine the
-

		<p>basic pattern and how the 6 sides are related.</p> <p>4. Sort and compare 3-D shapes and ask your pupils to sort different 3-D shapes into groups, depending on their properties.</p> <p>5. They also compare different 3-D shapes, identifying the similarities and the differences between the shapes.</p>
Summary	Review and Closing	
	<ol style="list-style-type: none"> 1. The focus is on ensuring that the pupils are able to recognize and identify 3-D shapes and to say whether they are closed or open shapes. 2. Students who are struggling with the concept can work with a partner and have them help them identify the properties on both the sheet and the shape they are making. 3. There will be manipulatives of 3D shapes that students can refer to for help and to have a concrete object to examine. 	