MATHS

Lesson 23

Prep

Topic: Shape

Identifying familiar three-dimensional objects

Lesson concepts

- **Shapes** — Language (describing, naming, comparing)
- **Shapes** — Sorting (appearance, function)

Today students will:

- name familiar three-dimensional objects
- identify three-dimensional objects in different representations.

Resources

Find and prepare

Glue stick

Two bowls

Familiar three-dimensional shapes, for example: tin, ball, cardboard tube, dice

Cards with the names of common three-dimensional objects (cube, sphere, cylinder, rectangular prism, cone, pyramid)

Modelling materials, for example: playdough or plasticine

Digital camera

Images in magazines, paintings, picture storybooks

Collage and craft materials (optional)

Key terms

cone, corner, cube, cylinder, edge, face, rectangular prism, sphere

For definitions and explanations of terms, please see the Glossary.

Lesson

Introduce the lesson

Note

The following language is important to highlight and develop throughout this lesson:
objects, shapes, same, different, sort, match, models, sides, curved, straight, describe, stack, roll, box, ball, tube

Explain that students will learn about naming the shapes on objects.

Describe objects

Note

This activity develops student awareness of the need to use consistent language when discussing the shape of familiar objects. It is acceptable for students to interchange more common terms such as ball and box provided they are supported with an understanding of the ways shapes are sorted and classified.

Display a collection of three familiar objects, for example: two bowls, one glue stick.

Focus questions

Q: *Which object is different from the others?*
A: For example: The glue stick.

Q: How is it different?
A: For example: It is a different shape/it has a different purpose.

Q: Is there something similar about all three objects?
A: For example: They all have a curved surface.

Say to students

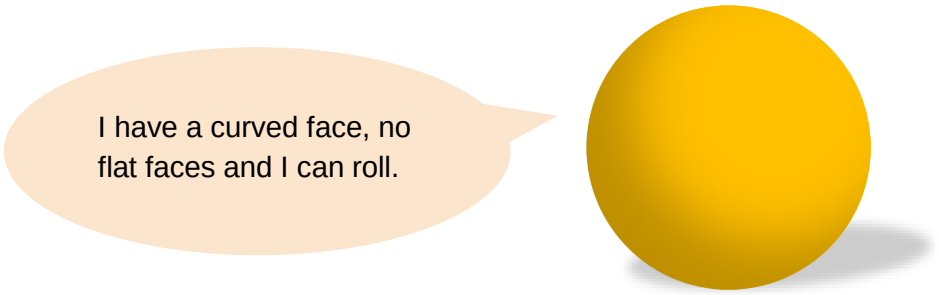
‘It was easy to just say ‘the glue stick’ when we talked about the different object because that is its proper name. The one way these objects are different is that they are different in shape. Objects are often described and identified by their shape.’

What do you call it?

Display a sphere (such as a ball).

Ask students to:

- identify or locate objects from around the room that are a similar shape
- suggest words they would use to describe their shape (such as ‘ball’, ‘round’, ‘curved’).



Say to students

“While these are different objects, they are the same shape. This shape is called a sphere.”

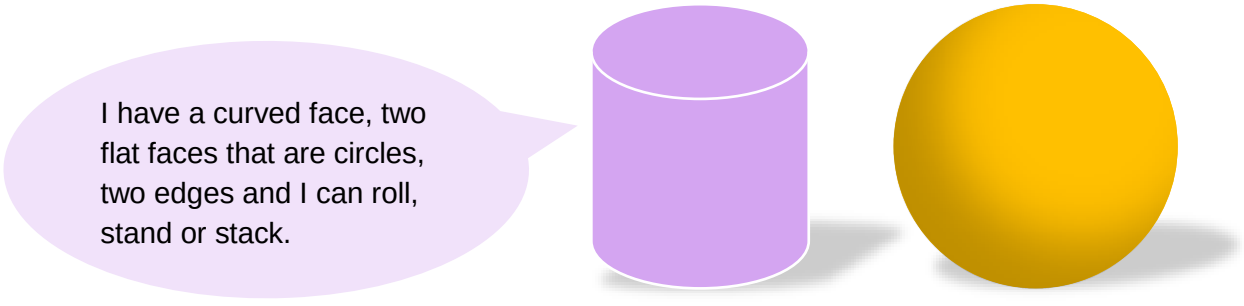
Help students to identify the features of a sphere (i.e. curved surface, no flat faces, can roll).

Display the name card ‘sphere' beside the collection.

Note

Keep the shape name cards for use in the next lesson.

Display a cylinder (for example: a can of food) beside the sphere. Discuss the similarities and differences between the two shapes.



Focus questions

Q: *How are these two objects alike?*
A: For example: They can both roll. They have a curved surface.

Q: How are they different?
A: For example: The tin has two flat faces and two edges. It can stack and roll.

Ask students to:

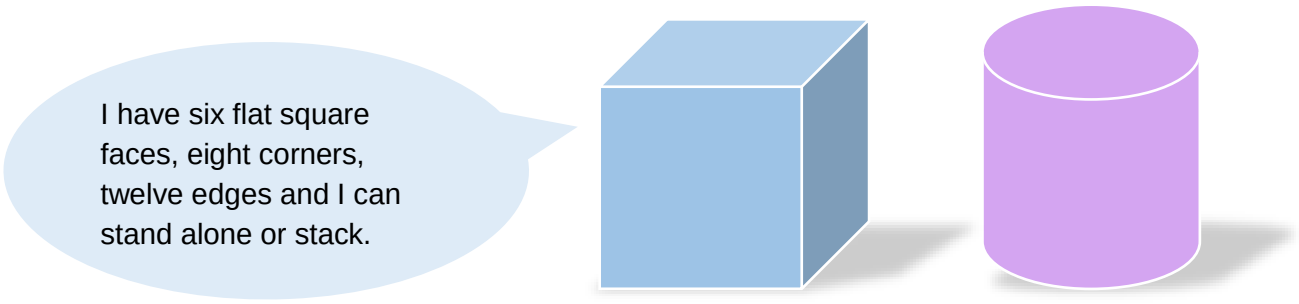
- identify or locate objects from around the room that are a similar shape to the cylinder
- suggest words they would use to describe their shape (for example: can, tin, tube).

Say to students

"While these are different objects, they are the same shape. This shape is called a cylinder."

Help students to identify the features of a cylinder (for example: a curved surface, two flat faces that are circles, two edges, can roll, stand or stack) and why the objects from around the room are also cylinders. Display the name card 'cylinder' beside the collection.

Display a cube (for example: a dice) beside the cylinder.



Discuss the similarities and differences between the two shapes.

Focus questions

Q: *How are these two objects alike?*
A: For example: They have flat faces and can stand or stack.

Q: How are they different?
A: For example: The cube has six flat faces and they are square shaped, it cannot roll, it has eight corners.

Ask students to:

- identify or locate objects that are a similar shape to the cube
- suggest words they would use to describe their shape (for example: dice, box).

Say to students

"While these are different objects, they are the same shape. This shape is called a cube."

Help students to identify the features of a cube (for example: six flat square faces, eight corners, 12 edges and can stand alone or stack) and why the objects from around the room are also cubes.

Display the name card 'cube' beside the collection.

Note

This activity has been presented with spheres, cylinders and cubes. It is also possible to include or substitute rectangular prisms, cones and pyramids if the students are more familiar with objects that are these shapes.

Make a shape

Provide students with modelling material such as plasticine or playdough.

Allow students to create their own three-dimensional object to resemble those identified and discussed in the previous activity.

Ask students to handle/manipulate their objects to view them from all angles.

Focus questions

Q: *Which three-dimensional object have you made?*
A: For example: sphere

Q: How could you describe it?
A: For example: It is curved.

Q: Does it look the same from the top, the bottom and every side? Why?
A: For example: It looks the same from all sides because all sides are curved.

Q: How is the object the same as another students? How is it different?
A: Personal response required.