

3-D Shapes

Your child will be learning about 3-D shapes over the coming days. This will be done by means of games and activities using concrete materials. Your child needs to know the language of 3-D and 2-D shapes – shape, solid, cube, cuboid, cylinder, sphere, cone, square, rectangle, triangle, circle, faces, edges, corners, flat, curved, round, roll, slide, stack.

Note for parents

There is considerable international debate concerning corners, edges and faces of 3-D shapes.

Corners: A corner is formed where two straight edges meet. This would mean that a cone does not have any corners. However, the word 'corner' is usually used when describing 2-D shapes. 'Vertex' is the more accurate term for describing a corner on a 3-D shape. The word 'vertex'/'vertices' will be used from Third Class onwards.

A cone has one vertex. With this in mind, for the purpose of this book, we set out that a cone does have one corner or vertex.

Faces and edges: Many people believe that faces and edges can only be flat, which would mean that a sphere has no face. In this book, we take it that a face/edge can be flat or curved meaning that a sphere has one curved face.

3-D shapes around us

Collect or point out to your child some shapes around your home or when you are out shopping that come in the shape of a cube, cuboid, sphere, cylinder or cone. There is no need to buy any of the products. Some of the packets may be for sweets or other unhealthy goods, so this might be a good time to emphasise the value of healthy eating to your child.



Cube: die/dice, Oxo cube, ice cubes, boxes, etc. A cube has six flat faces of equal size and eight corners.



Cuboid: cereal packets, shoe boxes, pencil cases, books. A cuboid has six flat faces with the opposite faces of equal size. It has eight corners.



Sphere: footballs, tennis balls, basketballs, marbles, some lights/lamps, Moon, Sun and other planets. A sphere is round in shape. It has only one flat face and no corners.



Cylinder: tin of beans/peas/soup, Pringles/Smarties boxes, packets of mints, fire extinguishers. A cylinder has one round face and two, flat, circular ends.



Cone: ice-cream cones, traffic cones, clown's hat, funnel, Christmas tree, party hats, wrapped flowers, some salt and pepper shakers. A cone is like a funnel with a circular top. It has two faces. The bottom face is circular. It has only one edge. It has one sharp corner at the top.

Name the shape

Place the five shapes (cube, cuboid, cylinder, sphere and cone) on a table. Begin by reminding your child that 3-D shapes are solid. Unlike 2-D shapes, they can be held. Your child has learned about four of these shapes in previous classes but the cone is new to them. Ask your child questions, such as:

- Can you name any of these shapes?
- Describe the shape (faces/edges/corners).
- Name another object that has this shape.

Everyday shapes

Show your child familiar objects (or pictures of objects) that are shaped like cubes, cuboids, cylinders, spheres and cones. Ask him/her to sort the items by shape. Place each object against a sheet of paper. Trace around the object. When the object is removed, your child will clearly see the 2-D outline associated with the 3-D shape.

Activity 1: Will it roll?

Take a number of different objects that are to hand and ask your child if each object can/cannot roll, for example, take a ball, cup, book, tin of peas, cone shape, shoe box, cereal box, cylindrical packets. Ask some open-ended questions (questions that require more than a yes/no answer):

- Why won't the tin of peas roll while upright?
- How might you make the tin of peas roll?

Activity 2: Will it stack?

Take a number of different objects that are to hand and ask your child if each object can/cannot stack, for example, take balls, cups, books, tin of beans, Lego bricks, cubes, yogurt cartons, butter cartons, apples, books, paper, pencils. Place particular emphasis on the tins that will only stack when upright – try to elicit this information from your child.