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<th>Outcome</th>
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<td>A student:</td>
<td>› describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols <strong>MA1-1WM</strong></td>
<td><strong>Background information</strong> In Stage 1, students begin to explore three-dimensional objects in greater detail. They continue to describe the objects using their own language and are introduced to some formal language. Developing and retaining mental images of objects is an important skill for these students. Manipulation of a variety of real three-dimensional objects and two-dimensional shapes in the classroom, the playground and outside the school is crucial to the development of appropriate levels of language and representation. A cube is a special prism in which all faces are squares. In Stage 1, students do not need to be made aware of this classification.</td>
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<td>‥ sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms <strong>MA1-14MG</strong></td>
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<tr>
<td>No Pyramids until stage 2</td>
<td><strong>Syllabus Reference:</strong> Hard copy: page : page 110 Digital: page 114</td>
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## Explicit Mathematical Teaching

Describe the features of three-dimensional objects (ACMMG043)

- use the terms 'flat surface', 'curved surface', 'face', 'edge' and 'vertex' appropriately when describing three-dimensional objects
  - describe the number of flat surfaces, curved surfaces, faces, edges and vertices of three-dimensional objects using materials, pictures and actions, eg 'A cylinder has two flat surfaces, one curved surface, no faces, no edges and no vertices', 'This prism has 5 faces, 9 edges and 6 vertices' (Communicating)
- distinguish between objects, which are 'three-dimensional' (3D), and shapes, which are 'two-dimensional' (2D), and describe the differences informally, eg 'This is a twodimensional shape because it is flat'
  - date the terms 'two-dimensional' and 'three-dimensional' to their use in everyday situations, eg a photograph is two-dimensional and a sculpture is three-dimensional (Communicating, Reasoning)
- recognise that flat surfaces of three-dimensional objects are two-dimensional shapes and name the shapes of these surfaces
- sort three-dimensional objects according to particular attributes, eg the shape of the surfaces
  - explain the attribute or multiple attributes used when sorting three-dimensional objects (Communicating, Reasoning)
- represent three-dimensional objects, including landmarks, by making simple models or by drawing or painting
  - choose a variety of materials to represent three-dimensional objects, including digital technologies (Communicating)
  - explain or demonstrate how a simple model was made (Communicating, Reasoning)

### Activities

**Mystery Bag.**

A variety of 3D objects including cones, cubes, cylinders, spheres and prisms are placed in the mystery bag. A student describes the properties of a 3D shape using the...
Describe the features of three-dimensional objects (AC syllabus content page)

- use the terms 'flat surface', 'curved surface', 'face', 'edge' and 'vertex' appropriately when describing three-dimensional objects
- Describe the number of flat surfaces, curved surfaces, faces, edges and vertices of three-dimensional objects using materials, pictures and actions, eg 'A cylinder has two flat surfaces, one curved surface, no faces, no edges and no vertices', 'This prism has 5 faces, 9 edges and 6 vertices'

Whole Class Teaching Activities—some suggested activities

Present a variety of Prisms and Pyramids. Discuss with children why the groups have been formed. - Definitions of Prisms - Ask children to come up with a definition looking at the prisms. *(Teachers definition - A solid comprising two congruent parallel faces and the lateral faces that connect them. Prisms are named according to their two matching parallel faces. Possible extension lateral faces are parallelograms. If they are all right angled (ie rectangle) the prism is a "right prism"; if they are not all right angled, then the prism is an oblique prism.

Real Life 3D Prisms
Children look for 3D objects in the ‘real’ world. Collect pictures from magazines, old photographs, birthday cards etc of 3D objects. In art, children could make a collage using these objects.

Guess The Prism
Put a 3D prism in a container or under a cloth. Allow a child to feel, but not see the object. The child describes the object and the class takes turns in guessing what it is. Repeat the exercise with as many different 3D prism as possible.

Constructing Prisms
Students build and stack attribute blocks, books, or pattern blocks to develop the idea of a prism as an object having a consistent cross-section.
Students can also construct models, plasticine, playdough, clay, polydrons, copied from models provided by the teacher. Sets of prisms can then be built up. Students can informally compare attributes such as height, width, length, and number of faces.