### Sub Strand – Three Dimensional Space 2

<table>
<thead>
<tr>
<th>Stage 2</th>
<th>Teaching and Learning Activities</th>
<th>Notes/ Future Directions/Evaluation</th>
</tr>
</thead>
</table>
| **A student:** | uses appropriate terminology to describe, and symbols to represent, mathematical ideas MA2-1WM  
checks the accuracy of a statement and explains the reasoning used MA2-3WM  
makes, compares, sketches and names three-dimensional objects, including prisms, pyramids, cylinders, cones and spheres, and describes their features MA2-14MG | Language  
Students should be able to communicate using the following language: object, two-dimensional shape (2D shape), three-dimensional object (3D object), cone, cube, cylinder, prism, pyramid, sphere, top view, front view, side view, isometric grid paper, isometric drawing, depth.  
Refer also to language in Three-Dimensional Space 1. |

### Ignition Activities

**Blindfold**  
Students handle and discuss geometric models or everyday examples of 3D objects. They count the faces, edges and corners and describe the shape of the faces. Students could use a feely bag instead of being blindfolded. When the object is visible – discuss whether the descriptions were correct.

**What Shape Am I?**  
A child describes an object to the class, eg I have 4 triangular faces and 4 corners. The class takes turns to guess. The child who guesses correctly then chooses another object.

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### Explicit Mathematical Teaching

Investigate and represent three-dimensional objects using drawings
- identify prisms (including cubes), pyramids, cylinders, cones and spheres in the environment and from drawings, photographs and descriptions
- investigate types of three-dimensional objects used in commercial packaging and give reasons for some being more commonly used (Communicating, Reasoning)
Whole Class Teaching Activities

Real Life 3D Prisms
Children look for 3D objects in the ‘real’ world. Students are to draw these objects from different viewpoints ie top, front and side.

Guess The Prism
Students are to draw a prism and show a partner who is to describe the prism ie faces, corners and edges.

Cross Sections
Students are to draw a series of cross sections of given prisms and pyramids.

3D Object Words
Have models of random 3D objects. Students are then to sketch these from different viewpoints ie top, side and front views.

Guided Group/Independent Activities

Students are to examine a range of commercial packaging and give reasons for some being more commonly used. Students could design their own package and justify the reasons for their choices.

Isometric paper
Students draw different views of an object on isometric grid paper. Students then swap drawings and interpret their partners drawing to make a model of the 3D object. Students use connecting cubes.

Planned Assessment

Pre Assessment
Children are put into groups and sort 3D shapes into categories. ie, pyramids, prisms. Children to discuss and identify features of shapes.

Present a variety of objects. Children select three objects and write all they know about them. Teacher to construct a marking rubric and distribute to students to look at prior to assessment. ie three to four days.

Possible Assessment Task

Classification
Students sort models, everyday objects into prisms, pyramids and those that are neither.

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**Points of View**
Ask students to sit at a table in pairs facing each other with a variety of objects arranged between them. Each student takes a turn at describing what they can see from their position. They can sketch what they see and write about it. The students still in pairs then move a little way around the table and repeat this activity. Continue until they are in the other person's position.