**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK:  | STRAND: Measurement and Geometry | **SUB-STRAND:** 3D Space 2 | **WORKING MATHEMATICALLY:** MA1-1WM |
| OUTCOMES: MA1-1-4MG | **Sorts, describes, represents and recognises familiar three-dimensional objects, including cones, cubes, cylinders, spheres and prisms** Describes mathematical situations and methods using every day and some mathematical language, actions, material, diagrams and symbols. (WM1) |
| **CONTENT:**  |  **Describe the features of three-dimensional objects.** * 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
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | **Pre-assessment*** Have a set of assorted 3D objects and ask students to sort them according to the shapes of the surfaces.
* Ask students to give reasons why they sorted them the way they did.
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| WARM UP / DRILL | Use Mystery Bag and take shapes out and allow students to name them. Prompts may be needed. http://getsmarts.weebly.com/2d-space2.html (select a game to play.) |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  |  |
|  | **INTELLECTUAL QUALITY** | **QUALITY LEARNING ENVIRONMENT** | **SIGNIFICANCE** |
| * Deep knowledge
* Deep understanding
* Problematic knowledge
* Higher-order thinking
* Metalanguage
* Substantive communication
 | * Explicit quality criteria
* Engagement
* High expectations
* Social support
* Students’ self-regulation
* Student direction
 | * Background knowledge
* Cultural knowledge
* Knowledge integration
* Inclusivity
* Connectedness
* Narrative
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| RESOURCES | Interactive whiteboard activity, assorted 3D objects, mystery bag, paper, scissors, glue, interactive online games and activities on 3D objects. |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicitly communicate lesson outcomes and expectations.Define and reinforce metalanguage used in the unit while teaching. object, shape, size, curved, flat, pointy, round, roll, slide, stack , cone, cube, cylinder, sphere, prism, surface, flat surface, curved surface, face, edge, vertex Brainstorm and revise names of 3D Objectshttp://www.bgfl.org/bgfl/custom/resources\_ftp/client\_ftp/ks2/maths/3d/index.htmExplicitly teach what makes a prism a prism? With a partner find prisms in the real world. http://mhschool.com/math/mathtoolchest/mtc\_online/ | LEARNING SEQUENCERemediationES1  | * **Finding Objects:** Students have a piece of paper marked into four sections. Each section has a picture label, e.g. box shapes, ball shapes, curly shapes, roller shapes. The students find objects in the classroom or playground and draw them in the appropriate space.
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| LEARNING SEQUENCES1 | * **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.
* **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 make a collage using these objects.
* **Possible extension:** lateral faces are parallelograms. If they are all right angled (i.e. rectangle) the prism is a "right prism"; if they are not all right angled, then the prism is an oblique prism.
* **Assessment:** Reflection journal, reflection partner, PMI etc.
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| LEARNING SEQUENCEExtension Early S2 | **Real Life 3D Prisms** * **Children look for 3D objects in the ‘real’ world**. Students are to draw these objects from different viewpoints i.e. top, front and side.
* **Classification:** Students sort models, everyday objects into prisms, pyramids and those that are neither.
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| **EVALUATION & REFLECTION** | **Student Engagement:** **Achievement of Outcomes:****Resources:** **Follow up:** |
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