**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 5 | STRAND:Measurement and Geometry | **SUB-STRAND:**  **3D Space 1** | **WORKING MATHEMATICALLY:**  MA2- 1WM & MA2- 3WM |
| OUTCOMES: | | **Makes, compares, sketches and names three dimensional objects , including prisms, pyramids, cylinders, cones and spheres and describes their features MA2- 14MG** | | |
| **CONTENT:** | | * Identify prisms, pyramids, cylinders, cones and spheres in the environment and from drawings, photographs and descriptions. * Sketch prisms, pyramids, cylinders and cones attempting to show depth. * Compare their own drawings of 3D objects with other drawings and photographs of 3D objects. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Identify 3D shapes of prisms, pyramids, cylinders, cones and spheres. | | |
| WARM UP / DRILL | | **Celebrity heads**- Students have the name of a hidden shape on their heads and they have to guess the shape. They should ask questions of the class or group eg. Do I have 5 faces?  Blindfold game- place 3D objects in a bag. Pull one out blindfolded. Describe the properties of that object. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Serena used three rolling shapes, four boxes and one cone to build something. What did she build and what might her construction look like? | | |
| QUALITY TEACHING ELEMENTS | | **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 |
| RESOURCES | | 3D objects i.e. pyramids, prisms, cylinders, cones and spheres.  Pattern blocks  Isometric dot paper and magazines. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Provide a display of 3D objects.  * Ask children if they can identify the prisms, pyramids, cylinders, cones and spheres. * Classify the objects into their various categories. * Discuss the importance of using the base to identify the type of prism or pyramid. * Identify 3D objects in the school environment. Find examples in pictures in magazines. * Sketch various 3D objects. Demonstrate how this is done, step by step, to show perspective. * Can use sketches as the basis of an art lesson. * Compare own sketches with other drawings and photographs.   <http://www.bbc.co.uk/bitesize/ks2/maths/shape_space/3d_shapes/play/> | LEARNING SEQUENCERemediationS1 or Early S2 | * Model 3D objects out of plasticine. Handle them and describe their properties in every day language. * Introduce terms of base, face, edge, corners. * Look at everyday objects like a ball, toilet roll, tissue box. Discuss properties using newly introduced terms. |
| LEARNING SEQUENCES2 | * Classify 3D objects according to properties * Walk around the school and identify 3D objects in the immediate environment. * Look at magazines and cut out pictures of 3D objects identified. Make a collage of the pictures or a prisms book. * Produce sketches of 3D objects by sketching. * Investigation: Students make prints of the faces and bases of prisms and pyramids. Place on a chart. * Stack attribute or pattern blocks to make a prism. Draw cross sections * **Investigation:**   **Assessment:** Count the faces, edges, and corners of prisms and discuss results. eg. This prism has 6 corners and 5 faces. |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Introduce 3D games, puzzles and problems. * Recognize various objects from various viewpoints and rotations. * Build models with cubes and fit them together to make new models. * Sketch 3D objects using isometric dot paper. |
| **EVALUATION & REFLECTION** | **Student engagement:** **Achievement of Outcomes:**  **Resources:** **Follow up** |