**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 7 | STRAND:Measurement and Geometry | **SUB-STRAND:**  3D Space 2 | **WORKING MATHEMATICALLY:**  MA2-1WM ,&MA2-3WM |
| OUTCOMES: MA2- 1WM | | Uses appropriate terminology to describe and symbols to represent mathematical ideas | | |
| **CONTENT:** | | **Investigate and represent three dimensional objects using drawings**   * Draw 3D objects using a computer drawing tool, attempting to show depth. * Investigate two dimensional representations of 3D objects in the environment e.g. Aboriginal Art. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Draw 3D objects using isometric dot paper.  Choose prisms and pyramids. | | |
| WARM UP / DRILL | | View photographs of everyday objects and Aboriginal art and identify 3D objects and 2D representations of 3D objects. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Suzy drew a box while I watched. I then drew one in a different way. How might I have drawn it?  Children should have the opportunity to see a variety of styles of representing 3D shapes drawn in two dimensions. | | |
| 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 | | Access to computers.  A variety of 3D models.  Photographs , aboriginal paintings. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Open Microsoft word and demonstrate on the Interactive whiteboard how to draw three dimensional shapes.  * Go to *Insert* and draw a 2D shape. * Click on 3D effects. * Use depth and rotation tools to explore 3D shapes. * Useful website: * interactive maths.wikispaces.com * Use IWB to demonstrate 3D drawing on isometric dot paper. * View photographs and Aboriginal pictures to locate 2D representations of 3D shapes. Discuss. * Invite a representative from the Aboriginal community to show appropriate examples of Aboriginal art. Choose local examples where possible. | LEARNING SEQUENCERemediationS1 or Early S2 | * Explore 3D shapes on interactive maths.wikispaces.com * Complete introductory activities on basic 3D prisms |
| LEARNING SEQUENCES2 | * Use Microsoft word drawing tools to create own 3D shape. * Draw a 2D shape. Click on 3D effects. * Explore depth, rotation and colour tools to create 3D shapes. * Children find their own pictures from magazines of 3D Shapes in the environment. Can be a homework task. Can also create their own aboriginal designs incorporating a variety of shapes and use as a bases for discussion. * **Investigation:** Create a variety of 3D shapes using drawing tools, incorporating depth and rotation tools. * **Assessment:** Create a prism, pyramid, cylinder, cone and sphere using drawing tools. |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Create a scene using drawing tools and incorporating as many 3D shapes possible eg. Cityscape * Use 3D effects tool to add depth and colour. Rotate shapes for varying perspectives. |
| **EVALUATION & REFLECTION** | **Student engagement:** **Achievement of Outcomes:**  **Resources:** **Follow up:** |