**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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**

|  |  |
| --- | --- |
| 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 SEQUENCEExtension Late 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:** |