**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK:  | STRAND: Measurement & Geometry | **SUB-STRAND:** 2D Space 1 | **WORKING MATHEMATICALLY:** MA1-1WM & MA1-3WM |
| OUTCOMES: MA1-15MG | **Manipulates, sorts, represents, describes and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons.** |
| **CONTENT:**  | **Recognise and classify familiar two-dimensional shapes using obvious features*** Recognise that the name of a shape does not change when the shape changes its orientation in space, e.g. A square turned on its vertex is still a square
* Recognise that shapes with the same name may have sides of equal or different lengths
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | **Pre-Assessment**Draw and label as many 4 sided shapes as you can.  |
| WARM UP / DRILL |  |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  |  |
| 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
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| RESOURCES | Metalanguage signage and environmental print, transparent polygons, overhead projector, various coloured cardboard shapes, maths journals, paper lunch bags and tangram puzzles |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicitly communicate lesson outcomes and work quality.* **Define and reinforce metalanguage** used in the unit e.g. shapes, rectangle, square, circle, triangle, same shape, different, order, size, smallest, largest, count, curved and straight

Introducing OrientationDisplay a variety of transparent polygons using an overhead projector. Ensure that the shapes are in different orientations. Describe one of the shapes, including the number of sides, the length of the sides, the number of angles and a comparison of its angles. Repeat the process by having one or two students select and describe other shapes. Focusing on one of the shapes that have been described, turn it to a different orientation. | LEARNING SEQUENCERemediation ES1 | * **Shape Sort:** Prepare a variety of different circles, triangles, squares and rectangles on coloured card and have students sort them in terms of their features, i.e. size and shape.
* **Shape Hunt:** In manageable groups (3 or 4), students go on a shape hunt in the school grounds. They draw and label each shape they find.
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| LEARNING SEQUENCES1 | * **Magic Bag:** Place a transparent polygon inside a *magic bag*, without the students seeing. Invite a student to feel the polygon inside the bag, describe it and name it. Organise the students into pairs and provide them with a *magic bag* and one of each polygon. Have the students take turns to hide one of the shapes inside the *magic bag* without the other student seeing the shape*. Students feel the hidden shape, describe it to their partner and name it.*
* **Discussion - As a whole class, discuss the activity.**

*Which shapes were difficult to describe?* *Were there any shapes that were similar to each other?* *What happened when the orientation of the shape was changed?* * **Investigation**
* **Assessment**
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| LEARNING SEQUENCEExtension Early S2 | * **Tangrams:** Provide students with the opportunity to play with and use tangram pieces. Students can make images using all the tangram pieces. They then trace around their image. Students then ask a partner to try and make it by identifying the names of the shapes used.
* **4 Piece Tangram Puzzles:** <http://www.mathplayground.com/tangrams.html>
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| **EVALUATION & REFLECTION** | **Student Engagement:****Resources:** | **Achievement of Outcomes:****Follow-Up:** |