**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 6 | STRAND: Measurement & Geometry | **SUB-STRAND**: **Length 2**  | **WORKING MATHEMATICALLY:** MA2-1WM, MA2-2WM & MA2-3WM |
| OUTCOMES: MA2.9MG | **Measures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres, and measures, compares and records temperatures.** |
| **CONTENT:**  | **Use scaled instruments to measure and compare lengths (ACMMG084)**Use the term ‘perimeter’ to describe the total distance around a two-dimensional shapeEstimate and measure the perimeters of two-dimensional shapesDescribe when a perimeter measurement might be use in everyday situations, eg determining the length of fencing required to enclose a playground (Communicating) |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Measuring perimeter of non-polygons.
* Have children measure their partner’s waist with a ruler. Does this work? Discuss difficulties and how to measure circular objects ie string, ribbon, measuring tape. Children measure a variety of round objects, ie, drink bottles, rubbish bins, etc.
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| WARM UP / DRILL | * Students estimate and then measure to the nearest centimetre, the perimeters of small items such as book covers, art paper, leaves. Students record the results and discuss.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | A farmer is creating a new enclosure for his goat. It will be a square shape with sides of 4m. What is the length of fence he will need to make the enclosure? |
| 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 | Variety of circular objects such as bins, drink bottles, globes, balls etc, measuring tapes, rulers, string, ribbon etc Geoboards and bands,  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * Guided and Whole Class Activities will include the following:
* Class discussion on using the term ‘perimeter’ to describe the total distance around a shape, revise Greek meaning "peri" and "meter" meaning measuring round the outside.
* Discuss the existence of equivalent sides of some shapes. Point out to children the most efficient way of measuring ie, opposites sides of a rectangle.
* Maths Language
* Perimeter, measure, describe, two dimensional, dimensions, investigate, shapes, different, compare.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Measure and record in centimetres or millimetres - Bottle measures

Students examine a plastic drink bottle and predict which length will be the greater – the height or the measurement around the bottle (circumference), by estimating the two lengths in centimetres. Paper streamers may be used to record the lengths. |
| LEARNING SEQUENCES2 | Investigating Perimeters * Students use geoboards to investigate perimeters of shapes.

They use shapes that have square corners. Students construct shapes that have perimeters of 4 units, 6 units, 8 units, etc. They record the shapes on dot or square paper. Students try to make different shapes that have the same perimeters. Students are asked if it is possible to make shapes which have a perimeter of 3 units, 5 units, 7 units, etc. They use the geoboard to make a shape which has: \*the smallest perimeter \* the largest perimeter. * Perimeter of 20 centimetres

Students are asked to investigate how many different four sided shapes they can construct with a perimeter of 20 cm. Students record and share findings. Possible questions include: \* how did you determine the dimensions of one shape? \* how did you find another shape? \* do you have all possible shapes that have a perimeter of 20 cm? How do you know?* Make an envelope

Students design a greeting card approximately 12 cm by 18 cm. Students make a simple envelope for the card, ensuring there is enough space around the card so that it will fit into the envelope. Students draw diagrams of how to cut and fold the envelope and label with the correct measurements. * Room for elbows

Students design a dinner table which will seat four students along each side, with enough space to eat comfortably. Students draw a diagram of the table with listed reasons for the dimensions.(p33 Teaching Measurement Stage2/3)* Assessment- Perimeter Match

In pairs, students are given a length (eg 16 cm) and are required to construct a two-dimensional shape on a card with this perimeter. The teacher collects, shuffles and re-allocates cards to each pair. Students estimate and then measure the perimeter of their allocated shape. They then find their partner and compare and contrast their shapes.  |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Design a container

Choose an object and discuss features that could be measured. Students write a design brief for a container or an object that is to be manufactured. Students must ensure that the brief contains all necessary measurements.  |
| **EVALUATION & REFLECTION** | Student Engagement: Achievement of Outcomes:Resources: Follow Up: |