**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 3 | STRAND: MEASUREMENT AND GEOMETRY | **SUB-STRAND: LENGTH 1** | **WORKING MATHEMATICALLY:**  **MA2.1WM, WA2.2WM, WA2.3WM** |
| OUTCOMES: MA2-9MG | | **Measures, records, compares and estimates lengths, distances and perimeters in metres, centimetres and millimetres and measures, compares and records temperatures.** | | |
| **CONTENT:** | | **Measure, order and compare objects using familiar metric units of length (ACMMG061)**   * Recognise the need for a formal unit smaller than the centimetre to measure length. * Recognise that there are 10 mm in 1 cm. * Use the millimetre as a unit to measure lengths to the nearest millimetre. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Discussion and worksheet – Determine the unit of measurement to be used to measure a variety of objects of different lengths, widths, heights or thicknesses. | | |
| WARM UP / DRILL | | * Measure small objects in the class room such as a paperclip, eraser, and width of a coin or pencil to understand the need for a smaller unit of measurement than the centimetre. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | If I have 10 different objects, which ones might I measure in mm, cm,m? | | |
| 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 | | Metalanguage labels and displays.  Rulers, tape measures and trundle wheels. String and other objects to represent informal units of measurement.  Examples if building tools that demonstrate the need for a small unit of measurement such as nails, screws, drill bits, etc. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * Teach and review the mm and how it relates to the cm and metre. * Explain that there are objects that are thinner or shorter than a centimetre that need to be measured for reasons of accuracy * Teach the skill of estimating lengths by first determining which unit of measurement is needed, and then estimate how many of those units the object might be. * Explain and demonstrate real life practical applications for this knowledge and these skills. A hardware store sells many objects which are measured in millimetres: Nails and screws, (L & W), Drill bits (W), timber (L and thickness), as well as fittings for kitchen and bathroom, etc. * The millimetre is used in building because such measurements need to be very accurate. | LEARNING SEQUENCERemediationS1 or Early S2 | * There is a unit of measurement that is smaller than a centimetre. It is used to measure objects that are very short or thin. It is also used to make measurement that need to be very accurate. 1cm is 1/100th of a metre. 1 short block is equal to 1cm. Objects can be measured in shorts and longs. A pencil might be 15 shorts in length, therefore is 15cm in length. Shorts and longs can be lined up along a ruler to relate to formal units of measurement such as the centimetre. |
| LEARNING SEQUENCES2 | * Investigation: Find some objects that you think are (estimate to be) less than 1 cm , then measure them to make sure. Measures objects longer than 1cm and measure them in millimetres as well as centimetres and millimetres using decimal notation. 2cm and 4mm = 2.4cm * Assessment: Worksheet of conversions |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Demonstrate how builders, carpenters, etc. use the millimetre for all length measurements and how this is important for accuracy, e.g. 2m and 10cm = 2010 mm * Investigate how a micrometre is used to measure very small widths and relate this to the millimetre. |
| **EVALUATION & REFLECTION** | Student engagement: Achievement of outcomes:  Resources: Follow up: |

* All assessment tasks should be written in **red** and planning should be based around developing the skills to complete that task.
* Assessment rubrics or marking scale should be considered.