**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 4 | STRAND: MEASUREMENT AND GEOMETRY | **SUB-STRAND: LENGTH 1** | **WORKING MATHEMATICALLY:** **MA2.1WM, WA2.2WM** |
| 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)*** Describe how and length or distance was measured
* Record lengths using the abbreviation for millimetres (mm), eg 5cm and 3mm or 53mm
* Estimate lengths to the nearest millimetre and check by measuring.
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Measure and compare the lengths, widths and perimeters of tables and desks and illustrate the need for a unit of measurement that is more accurate than the centimetre.
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| WARM UP / DRILL | * On the board or floor, draw a line that is 2m long and label the points 0m, 1m and 2m. Write 180cm above the line and ask students place a mark or object where they estimate this measurement to be. Ask: *What is another way to write this length*? Explain that this can be written in a number of ways; 1.8m, 1800mm, 1m 80cm.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Using a variety of pencils, arrange in order from shortest to longest. Estimate the length of each to the nearest centimetre. Now using a ruler, measure and record. |
| 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 | Rulers, tape measures and trundle wheels. String and other objects to represent informal units of measurement.Sporting equipment for Olympic field events. |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Use a variety of rulers to demonstrate how a metre can be divided into centimetres or millimetres, or a combination of both. Longer lengths may require all three units of measurement.* In small groups, estimate then measure the dimensions of the classroom in metres and centimetres.
* Measuring the dimensions of windows and doors or furniture can illustrate the need for consistency and accuracy.
* Explain and demonstrate real life practical applications for this knowledge and these skills.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Use metre rulers to measure lengths of objects or dimensions of furniture, doors, windows, etc. Record lengths using “between 1 and 2 metres” or “about 1 and a half metres” or in metres and centimetres.
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| LEARNING SEQUENCES2 | * Students can measure lengths of various objects in metres and centimetres.
* Students can measure lengths using combinations of metres, centimetres and millimetres.
* Students can draw lines using m, cm and mm and check for accuracy.
* Investigation- Organise an informal class Olympic games event with athletic events requiring measurement of length such as shot put, discus, long jump, high jump and javelin. Use a variety of objects to replace the real objects that are thrown such as a tennis ball, Frisbee, foam rocket. Students’ results can be tabled and compared.
* Assessment- Students can measure the lengths of various objects and record using centimetres and millimetres, and then convert measurements to decimals. “We can write 9cm and 8mm as 9.8cm, or 98mm.
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| LEARNING SEQUENCEExtension Late S2 or Early S3 | * Students can measure the lengths of various objects and record using centimetres and millimetres, and then convert measurements to decimals. “We can write 3cm and 4mm as 3.4cm, or 34mm.
* Students’ Olympic measurements can be converted in a variety of ways using the above units of measurement.
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| **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.