**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 3 | STRAND: MEASUREMENT AND GEOMETRY | **SUB-STRAND:** **LENGTH 1** | **WORKING MATHEMATICALLY:**  MA1-1WM & MA1-3WM |
| OUTCOMES: MA1-9MG | | **Measures, records, compares and estimates lengths and distances using informal units metres and centimetres.** | | |
| **CONTENT:** | | **Measure and compare the lengths of pairs of objects using uniform informal units.**   * Investigate different informal units of length used in various cultures, including those used in Aboriginal communities. * Compare the lengths of two or more objects using appropriate uniform informal units and check by placing the objects side-by-side and aligning the ends. * Explain why the length of an object remains constant when units are rearranged, e.g., ‘The book was seven paper clips long. When I moved the paper clips around and measured again, the book was still seven paper clips long’. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Estimate, compare and order three or more objects according to their lengths, e.g., a shoe, a book and a stick. Note whether students are placing objects end-to-end and side-by-side and using language such as “the stick is shortest”, “the book is longer than the shoe” etc. | | |
| WARM UP / DRILL | | * Have three students arrange themselves in order from tallest to shortest. Discuss whether the order of height would change if one stood on a chair. Discuss whether or not people can be placed in order of height if they are sitting down. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | * Investigate different informal units of length used in various cultures, including those used in Aboriginal communities.  http://ab-ed.boardofstudies.nsw.edu.au/go/mathematics-and-numeracy/maths-k-6/teaching-and-learning-units/ | | |
| 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 | | Streamers, string, scissors, paper, pencil, braids, cardboard strips, ribbon, skipping rope, wool, chalkboard duster, pop sticks, 1m ruler. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Teach and Review measuring lengths using uniform informal units. Discuss units need to be placed end-to-end without gaps or overlaps, units must be equal in size, identical units should be used to compare lengths, some units are more appropriate for measuring particular objects.  * **Discuss** different cultures in particular Aboriginal students often have developed a sense of measurement based on their and self and their environment. * **Language** measure, class standard, end-to-end, informal units, gap, equal, identical, compare, lengths, units, longer, shorter, longest, shortest, circumference. * Students in pairs cut a piece of string and then move around the classroom to find as many objects as they can that are the same length as, longer than or shorter than the string. Students record their findings by drawing and labelling. | LEARNING SEQUENCERemediationES1 | * **Sort me –** Given a collection of lengths or braid, streamers, cardboard strips or ribbon, students sort them into a long pile and a short pile. Students record their lengths and label as ‘long’ and ‘short’. |
| LEARNING SEQUENCES1 | * **Order the group –** Order from longest to shortest, three or more lengths which students have to straighten out and lay side by side, e.g., a skipping rope, a length of string and a rolled-up streamer. Record and label the lengths as ‘longest’ and ‘shortest’. Report the results using comparative language. * **Investigation- Class standard –** Students discuss units that are more uniform than body measurements. Students select a uniform unit such as a chalkboard duster. In groups of four or five, students are provided with a duster and long strip of paper to make a tape calibrated with the informal unit. Students decide on a name for this unit. * **Assessment-** Students could use their tape to measure various objects and compare results with other groups. |
| LEARNING SEQUENCEExtensionEarly S2 | * **Measure me –** Students in pairs take turns to lie on the floor or ground to be measured. Partners mark the body length at the top of the head and the heels and draw a straight line joining the two points. Students measure their lengths in units. They compare the length of different people and check by direct comparison. * **Measure with one unit –** Students are given one specific unit (e.g., one pops tick, streamer or 1m ruler). Measure and compare objects in the classroom or playground, such as the circumference of the tree. |
| **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.