**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 6 | STRAND: **Measurement and Geometry** | **SUB-STRAND:**  **Length 2** | **WORKING MATHEMATICALLY:**  **MA3-1WM, MA3-3WM** |
| OUTCOMES: MA3-9MG | | **Selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length** | | |
| **CONTENT:** | | * **Connect decimal representations to the metric system (ACMMG135)**Recognise the equivalence of whole-number and decimal representations of measurements of length, eg 165 cm is the same as 1.65 mInterpret decimal notation for lengths and distances, eg 13.5 cm is 13 centimetres and 5 millimetres * Record lengths and distances using decimal notation to three decimal places, eg 2.753 km | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Evan cut 3 lengths of decking measuring 2.5m, 1.65m amd 895mm. What is the total length in metres? | | |
| WARM UP / DRILL | | * Counting forwards and backwards on and off the decade. * Revision of basic length conversions. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Tina is making a frame for a portrait she painted at school. She needs 2 pieces of timber 240mm in length and 2 pieces of timber 180mm in length.1. What is the total length of the frame in millimetres?2. If Tina cut the pieces from a 1 metre length of frame, how much would be left over? | | |
| 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 | | Websites as per below.  Range of worksheets available to practise conversions  <http://www.mathworksheets4kids.com/metric.html> Reading scales and converting between measurements.  <http://www.primaryresources.co.uk/maths/mathsE1.htm> | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| <http://www.youtube.com/watch?v=w7--f3Jf-vo> Revision of how to convert between mm, cm, m and km.  * Completion of basic conversions on the board as a whole class. Example: 165cm = 100cm+65cm= 1m 65cm=1.65m * Language: conversions, equivalence, centimetres, millimetres, metres, kilometres | LEARNING SEQUENCERemediationS2 or Early S3 | * Problem solving question involving converting between mm, cm, m and km. Refer to Maths Plus 5 and 6 for example pages. |
| LEARNING SEQUENCES3 | Investigations   * Height  1. Estimate the height of your teacher in cm. Convert this to mm. Write your estimate in mm, cm and m. Compare your answer with 3 other classmates. 2. Estimate the difference between your height and your teacher’s height. Measure your height. How close to the estimation were you?  * Streamers   Without using a ruler, estimate and cut pieces of paper streamer to these lengths.   1. 30mm 2. 150mm 3. 20cm 4. 62cm 5. 850mm   Use a tape measure to check the length of each streamer. How close were you?   * Assessment- Complete a worksheet with a variety or conversions on it. |
| LEARNING SEQUENCEExtensionEarly S4 | * Complete more problem solving activities using larger numbers and more steps   Jenny is walking from Fishville to Codtown, a distance of 6.75km. She still has 1320m left to walk. How far has she walked already? Give your answer in km. |
| **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.