**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
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| 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.
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| 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
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| 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.
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| 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.
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| LEARNING SEQUENCEExtension Early 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.