**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 4 | STRAND: Measurement and Geometry | **SUB-STRAND: Length 1** | **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:** | | **Calculate the perimeters of [rectangles](http://syllabus.bos.nsw.edu.au/glossary/mat/rectangle/?ajax" \t "_blank" \o "Click for more information about 'rectangles') using familiar metric units (ACMMG109)**   * Calculates the perimeter of common two-dimensional shapes, including squares, rectangles, triangles and regular pentagons with more than four sides (i.e. regular polygons other than equilateral triangles and squares. * Explain that the perimeters of two-dimensional shapes can be found by finding the sun of the side lengths. * Explain the relationship between the lengths of the sides and the perimeters for polygons (including equilateral triangles and squares). * Record calculations used to find the perimeters of two-dimensional shapes. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Students define ‘perimeter’ in either words or labelled diagrams. Students complete worksheet calculating perimeters of 2D shapes and drawing shapes with designated perimeters. | | |
| WARM UP / DRILL | | * Practise conversions between mm, cm and m. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | What is the perimeter of a rectangle with sides 66mm and 3 cm? Answer in both mm and cm.  * On 1cm grid paper, draw all the possible combinations that have a perimeter of 20cm. | | |
| 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 | | 1cm grid paper  Trundle wheel  Tape measures  Mapping worksheet | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Explicitly communicate lesson outcomes and expectations for work quality.  * Revise and define metalanguage used in the unit including explicit teaching of the prefix of the term perimeter, sides, height, width, dimensions. * Explicit teaching of ‘perimeter’, teacher uses think aloud strategy to model finding perimeter of a variety of shapes. * Teacher models how shapes can have the same perimeter but different dimensions by using several examples. * Teachers models use of trundle wheel. | LEARNING SEQUENCERemediationS2 or Early S3 | * **Activity:**  Students walk around the outside of a netball caught recording the dimensions in steps walked. Student brainstorm to find appropriate measuring devices to measure dimensions of the court. * **Activity:** Repeat activity using measurement device discussed, compare results. |
| LEARNING SEQUENCES3 | * **Activity**: Teacher explicitly models the perimeter of a variety of 2D shapes. Students are provided with a piece of paper with a variety of 2D shapes illustrated on them and are asked to calculate perimeter. * **Activity**: In pairs students estimate and measure the perimeter of a variety of 2D shapes that may have sides which are not whole numbers. * **Investigation**  **Activity:** Students cut a large picture out of magazine and measure its perimeter, they then cut the picture in half and measure the perimeter again, students repeat process again. Students record and label the results commenting on how results are changing. * Assessment: Students are asked to draw and label ten different 2D shapes with the same perimeter. Discuss results. |
| LEARNING SEQUENCEExtensionEarly S4 | * **Activity:** Students draw a variety of regular and irregular shapes on graph paper with common perimeters, e.g. draw 10 shapes with a perimeter of 20cm. Compare results with partner. * **Activity:** Students use keys on map of local area to calculate the perimeter of local suburb. |
| **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.