**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TERM: | WEEK: 3 | STRAND: Measurement and Geometry | **SUB-STRAND:** **Length 1** | **WORKING MATHEMATICALLY:**  MA3-3WM, MA3-1WM |
| 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)**   * Uses the term ‘dimensions’ to describe the ‘lengths’ and ‘widths’ of rectangles. * Measures and calculates the perimeter of a large rectangular section of the school, e.g. a playground, netball court. * Recognises that rectangles with the same perimeter may have different dimensions. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Students define ‘perimeter’ in either words or pictures. On graph paper students are asked to draw as many shapes as they can with a perimeter of 20 cm. | | |
| WARM UP / DRILL | | * **Activity:** On graph paper in pairs students draw rectangles of specified dimensions, draw a rectangle that is 5cm long and 2cm wide. Teacher asks students the following: What is the distance around the outside of the shape? How did you work it out? Do you know the name of the outside of the shape? Discuss student results, compare answers and methods for finding results. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | What is the perimeter of a rectangle that has sides 6m wide and 4m long? | | |
| 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 | | Trundle wheel  Tape measures  Mapping worksheet | | |

**TEACHING AND LEARNING EXPERIENCES**

|  |  |  |
| --- | --- | --- |
| 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 revise the dimensions of a number of 2D shapes, quadrilaterals and triangles. * **Activity:** Students are asked to measure the dimensions of several objects/things. What are the dimensions of the top of the desk? What are the dimensions of the electronic white board? What are the dimensions of the classroom floor? Students record results in Mathematics Journals. Discuss choice of measurement device, process used to measure dimensions. |
| LEARNING SEQUENCES3 | * **Activity**: Discuss what perimeter is, construct definition and what it is used for. Teacher explicitly models calculating the perimeter of a variety of 2D shapes. * **Activity**: In pairs students estimate and measure the perimeter of rectangular objects in the classrooms e.g. desk top, books, cupboard top, pencil case, recording process, results and reflections in maths journals. * **Activity:** Students complete worksheet measuring the perimeters of a variety of shapes. * **Investigation:** Teacher revises use of trundle wheel as a measurement tool. In groups students use device to measure perimeters of rectangles outside e.g. netball courts, playground areas. Students record results in maths journal. * **Assessment-** Have students draw and label as many shapes as they can with a perimeter of 24 cm (sides don’t have to be whole numbers as long as the sides total 24cm). |
| LEARNING SEQUENCEExtensionEarly S4 | * **Activity:** Students calculate perimeter of a variety of regular and irregular shapes. * **Activity:** Students calculate perimeters of shapes that have sides which are decimals not whole numbers, rectangle with a length of 7.3 cm and a width of 4.5 cm. |
| **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.