**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: | STRAND:Measurement and Geometry | **SUB-STRAND:**  Area 1 | **WORKING MATHEMATICALLY:**  MA2-1WM; MA2-3WM |
| OUTCOMES: MA2-10MG | | Measures, records, compares and estimates areas using square centimetres and square metres | | |
| **CONTENT:** | | **Recognise and use formal units to measure and estimate the areas of [rectangles](http://syllabus.bos.nsw.edu.au/glossary/mat/rectangle/?ajax" \t "_blank" \o "Click for more information about 'rectangles')**  \* Recognise the need for the square centimetre as a formal unit to measure area  \* Use a 10 cm × 10 cm tile (or grid) to find the areas of rectangles (including [squares](http://syllabus.bos.nsw.edu.au/glossary/mat/square/?ajax" \t "_blank" \o "Click for more information about 'squares')) that are less than, greater than or about the same as 100 square centimetres  \* Measure the areas of rectangles (including squares) in square centimetres | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Using 10x10 tiles compare the areas of 2 rectangles. Students move and align the tile systematically to preserve size.  * Students represent rows and columns by drawing lines to make rectangular units. * Students explain and use the structure of rectangular unit tessellation. eg 3 rows of 4 or skip counting | | |
| WARM UP / DRILL | | * Trace around the outside of an item eg book * Cover the inside space with your hands (or other items)   NB: Students should be able to communicate using the following language: greater than, less than, square centimetre, square metre. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | New tiles are 1cm2, how many tiles are needed to cover an area of 36 sq cm? | | |
| 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 | | http://www.schools.nsw.edu.au/learning/7-12assessments/naplan/teachstrategies/yr2011/images/working\_with\_square\_centimetres.pdf  http://www.mathplayground.com/PartyDesigner/PartyDesigner.html (Design a party room) | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| 1.Using tape the teacher creates a rectangle on floor.  * 2. Students cover the rectangle with same sized items eg exercise books. * 3. Discuss statement: ? exercise books covers the surface of the rectangle. * 4. Discuss need for formal units. * 5. Using gridpaper each student creates a 10cm X 10 cm grid. Discuss total number of squares in a 10cm X 10cm grid. * 6. Students ‘patchwork’ their grids to cover rectangle * 7. Lead students to discover the total number of grids. (arrays, skip counting) * 8. Students suggest items which may be less than, greater than or about 100 square centimetres. Test suggestions. | LEARNING SEQUENCERemediationS1 or Early S2 | * Simple area using grids in maths books. * Area of hand   see Naplan Teaching Strategies  http://www.schools.nsw.edu.au/learning/7-12assessments/naplan/teachstrategies/yr2011/images/working\_with\_square\_centimetres.pdf   * Tessellation blocks and patterns |
| LEARNING SEQUENCES2 | * Work out area of hand. * Tessellation blocks and patterns   Investigation:   * Use this to estimate area of 2D objects around the room. * Using grid on overhead transparency, check (measure) area. * Record estimate and measure in table. |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Design a Party room   http://www.mathplayground.com/PartyDesigner/PartyDesigner.html |
| **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.