**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 1 | STRAND: Measurement and Geometry | **SUB-STRAND:** Angles 1 | **WORKING MATHEMATICALLY:**  Ma2-1WM |
| OUTCOMES: MA2-16MG | | **Identifies, describes, compares and classifies angles** | | |
| **CONTENT:** | | **Identify angles as measures of turn and compare angle sizes in everyday situations (ACMMG064)**   * identify 'angles' with two arms in practical situations, eg the angle between the arms of a clock CT * identify the 'arms' and 'vertex' of an angle http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * What is an angle? Name as many angles as you can think of. | | |
| WARM UP / DRILL | |  | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | What angle is formed when the hands of a clock are showing 3 o’clock? | | |
| 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 | | Teaching about angles: Stage 2  <http://technologyinmaths.wikispaces.com/file/view/teaching+about+angles+stage+2.pdf>  Teaching angles by abstraction: a professional development experiment in Year 3  <http://www.curriculumsupport.education.nsw.gov.au/primary/mathematics/assets/pdf/angles_report01.pdf> | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Select children to form various angles using body parts eg., sitting against a wall. Ask questions such as ‘What angle was the easiest to form?’Discuss where else in the classroom you would find angles eg., where the floor meets the wall, hands on the clock etc.Introduce the terms ‘arms’ and ‘vertex’. Discuss where the vertex of a clock is and what part of the clock are the arms. Also discuss, when an angle is made with my elbow where are the arms and the vertex of the angle?Review angles formed by body parts and terminology ‘angles’, ‘arms’ and ‘vertex’. | LEARNING SEQUENCERemediationS1 or Early S2 | * Pattern block corners – supply pattern blocks consisting of a square, an equilateral triangle, a regular hexagon, a trapezium with angles of 60 and 120 degrees, and two rhombuses (one with angles of 60 and 120 degrees and one with angles of 30 and 150 degrees) – each a distinctive colour. Students are to construct patterns out of the blocks of the same colour by fitting the same angle around a central point. The students are to compare the size of the angles of the different pattern blocks and identify the angles in each shape. |
| LEARNING SEQUENCES2 | * In small groups, identify in the playground angles by taking photos on the   iPad/camera     * Print copies/view on IWB and identify the vertex and the arms of an angle (introduce/reinforce the concept that the length of the arm does not change the angle) |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Using the Discovery Kids – Room Maker game design a room and identify right angles, straight angles, an acute angle and an angle of revolution in your room’s structure and items you have placed in your room. Discuss which angles are predominantly used in your room and why these angles have been used. * <http://kids.discovery.com/games/just-for-fun/room-maker> |
| **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.