**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | 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)*** Describe informally an angle as the “amount of turning” between two arms CT
* Recognise that the length of the arms does not affect the size of the angle (Reasoning)
* Compare angles directly by placing one angle on top of another and aligning one arm
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| 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  | Draw an angle. What name would you give your angle? |
| 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 | 1) <http://www.pinterest.com/pin/160722280426709677/>2) <http://www.curriculumsupport.education.nsw.gov.au/primary/mathematics/assets/pdf/angles_report01.pdf>3) *Teaching about angles: Stage 2* [*http://technologyinmaths.wikispaces.com/file/view/teaching+about+angles+stage+2.pdf*](http://technologyinmaths.wikispaces.com/file/view/teaching%2Babout%2Bangles%2Bstage%2B2.pdf)4) Things I wish I knew earlier about teaching maths – Teaching about angles – Stage 2 <http://marion2407.blogspot.com.au/2011/03/teaching-about-angles-stage-2.html> |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * Review angles formed by body parts and terminology ‘arms’ and ‘vertex’.
* Students make an *angle maker* by threatening a pipe cleaner through a straw (Resource 1)
* Manipulate one of the arms of the *angle maker* to form different angles and have students describe the angles created.
* Place the *angle make*r on a piece of A3 paper. Students mark the apex and two ends of the pipe cleaner. Using a ruler they extend the lines from the apex past the original dots. Class discuss whether the lengthening of the lines has changed the angle.
* Discuss if we made the hands on a clock face longer would the time change.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Make angles with pieces of cardboard and turn one arm to make different angles. Students trace some angles and discuss which angles are the biggest and smallest and why.
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| LEARNING SEQUENCES2 | * Students make angles using *angle maker* and then compare with other students angles by aligning one arm of the angle tester. Students discuss to angles making comparative statements. Eg My angle is about two times bigger than my partners angle.
* Students cut the Windmill stencil (Resource 3) and use the different pieces to measure angles around the classroom. This activity will reinforce the fact that the length of the lines does not change the angle. Students discuss their findings with their classmates.
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| LEARNING SEQUENCEExtension Late S2 or Early S3 | * Students complete banana hunt game
* <http://www.oswego.org/ocsd-web/games/bananahunt/bhunt.html>
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| **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.