**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 2 | STRAND: Measurement and Geometry | **SUB-STRAND:** Position | **WORKING MATHEMATICALLY:** MA3-1WM |
| OUTCOMES: MA3-17MG | | **Locates and describes position on maps using a grid-reference system.** | | |
| **CONTENT:** | | **Describe routes using landmarks and directional language (ACMMG113)**   * find a location on a map that is in a given direction from a town or landmark, eg locate a town that is north-east of Broken Hill http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png * describe the direction of one location relative to another, eg 'Darwin is north-west of Sydney' http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png * describe a route taken on a map using landmarks and directional language, including compass directions, eg 'Start at the post office, go west to the supermarket and then go south-west to the park http://syllabus.bos.nsw.edu.au/wsimages/cca/l.png | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Find your school in a street directory. Where could you go that is close to 1km away from the school?   Note the children who use the scale provided to work this out. Are they able to use it confidently and correctly? | | |
| WARM UP / DRILL | | * Game: Treasure Trove (Compass point revision) * Pg 184 Maths Tracks Stage 3 Teachers Resource Book B * Instructions pg 139 | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Calculate the distance from Dubbo to Penrith if it is 52kms from Dubbo to Wellington, 216kms from Wellington to Lithgow and 302kms from Wellington to Penrith. | | |
| 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 | | Maps of NSW, grid paper, large sheet of paper, Compass’ and compass web game. (Computers). | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| The Best RouteStudents are given a scaled map of their suburb or a section of a city and are asked to locate two points of interest. On the map, students show the shortest or best route between the two points. Students write a description of the route using grid references, compass directions and the approximate distance travelled.On a large map of the local area, all students plot their home and the route they use to get to school. They then write a description of their route.  * **Orienteering**   Students design and measure a simple orienteering course in the school grounds. They create a set of instructions on a map with a grid, a scale and compass directions to each place to be located. They give their instructions to another student to follow. | LEARNING SEQUENCERemediationS2 or Early S3 | * Students play this compass game individually or in pairs to orient themselves for map reading and learn their compass directions.   <http://www.netrover.com/~kingskid/directions/directions.html>   * They then make their own simple compass rose from paper and practise using it to give clues about a location in the classroom. * If time permits, draw a simple plan of the classroom and have students make cards like below. |
| LEARNING SEQUENCES3 | * **Distance and Direction**   Students use the scale on a map of NSW and the compass rose to find a town eg 300 km NE of Broken Hill, 270 km SW of Ballina.  Students are encouraged to create their own cards with distance, direction and starting place on one side and the town on the back. They then swap cards with other students in the class. |
| LEARNING SEQUENCEExtensionEarly S4 | * Students source maps on the Internet or use an atlas to write a new set of cards using direction, distance and starting point. They swap with a partner who locates the town or point of interest. |
| **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.