**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 4 | STRAND: Measurement and Geometry | **SUB-STRAND:** Position 2 | **WORKING MATHEMATICALLY:**  MA1-1WM |
| OUTCOMES: MA1-16MG | | **Represents and describes the positions of objects in everyday situations and on maps** | | |
| **CONTENT:** | | **Interpret simple maps of familiar locations and identify the relative positions of key features**  \* Use drawings to represent the position of objects along a path.  \* Give reasons when answering questions about the position of objects. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Follow oral directions to walk a route or mark it on a map. | | |
| WARM UP / DRILL | | * Working with partner give directions to go to a place without using direction words (to emphasise need for direction words)   Variation: Students describe where something is in the room without using direction words.   * ***Questioning:-*** Was it easiest to get there without or with the direction words? How do the direction words make it easier? Why is it easier to know where to go when we use left and right? | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | |  | | |
| 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 | | Paper, pencils, textas, lego, direction signs, grid paper, simple map of school. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Explicitly communicate lesson outcomes and work quality. Meta-language used:- position, location, map, path.   * **Where am I Going?**   In pairs, Student A sketches a known route and describes it to Student B. Student B then guesses the destination from the described route. Student B checks their guess by looking at the route on the sketch.   * **Model Town**   In small groups, students are asked to list the main places in their community eg the supermarket, the fire station, homes,  the playground. They then make a simple model of their community using a variety of materials.  Students reflect and justify the position of the main places in their community eg ‘The supermarket should be where everyone can get to it.’ Students could then plan a bus route so that all children can get to school, or a fitness walk through the town.  Possible questions include:  ❚ what is the shortest possible route?  ❚ can you mark the quickest route for the fire engine to reach the school?  ❚ how can you describe the position of the objects in your model? | LEARNING SEQUENCERemediationES1 | * Obstacle Courses   Set up an obstacle course outside using a variety of sporting equipment, eg ropes, hoops, cones and tunnels. Students are to determine ways to complete the obstacle course and describe the path and movements they used. “ I went *over* the cones, *inside* the tunnels, *in between* the hoops, and *under* the table. |
| LEARNING SEQUENCES1 | * **Remote Control Car**   Students work in pairs – one person gives directions and the other has to make the car follow these directions.   * **Mystery Walk**   Prepare signs with various directions on them, e.g. turn left here. These signs are placed outside the classroom so that the students will follow a particular route when following the signs. On return to the classroom students describe their walk. Student could model their walk using lego, make a map of their walk, and sketch their walk. Investigate road safety signs. |
| LEARNING SEQUENCEExtensionEarly S2 | * **Spreadsheet Directions**   **Part A**  In pairs, students work on the computer using a spreadsheet program. Student A puts their name or initials in a cell. Student B chooses a different cell on the page, and puts their name or initials in it. The students take turns in finding a path  from A to B, by using the arrow keys and placing an × in every cell they have used to create the path.  Possible questions include:  ❚ can you find a longer /shorter path?  ❚ can you write directions for a stepped path?  ❚ is there a more direct route?  ❚ can you create a path with 20 steps?  *Variation:* Students use other computer drawing programs or tools to create paths and designs such as regular or irregular shapes.  **Part B**  Students plan a path using grid paper. They write directions using the terms ‘up’, ‘down’, ‘left’, ‘right’ and ‘across’. In pairs at the computer, students open a spreadsheet program.  Student A tells Student B where to put the Xs for the start and finish positions. While Student A gives the directions, Student B plots the path by placing an x in every cell using the arrow  keys to move. Student A checks Student B’s path on the computer against the one they previously drew on grid paper. They then swap roles. |
| **EVALUATION & REFLECTION** | Did the children enjoy the activities? Were the outcomes achieved? Did I utilise areas outside the classroom? |

* All assessment tasks should be written in **red** and planning should be based around developing the skills to complete that task.