**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: | STRAND: Measurement & Geometry | **SUB-STRAND:** 2D Space 2 | **WORKING MATHEMATICALLY:**  MA1-1WM |
| OUTCOMES: MA1-15MG | | **Manipulates, sorts, represents, describes, and explores two-dimensional shapes, including quadrilaterals, pentagons, hexagons and octagons.** | | |
| **CONTENT:** | | **Identify and describe half-turns and quarter-turns**   * Perform full-, half- and quarter-turns with a single shape * Record the result of performing full-, half- and quarter-turns of a shape, with and without the use of digital technologies | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | **Pre-Assessment:** Students completeworksheet – Turns2a, by cutting out and pasting in shapes from worksheet - Turns2b. | | |
| WARM UP / DRILL | | Students follow teacher’s verbal instructions and walk around the classroom making full, half and quarter turns as directed. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Steve had a large rectangle which is standing on its long side. If he makes three quarter turns, one full turn and a half turn, what will its new position be? | | |
| 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 | | Geo-strips, grid paper, 3x3cm grid paper squares, 2D shapes, pattern blocks and provided worksheets. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * **Explicitly communicate lesson outcomes and expectations of work quality**. * **Define and Reinforce metalanguage used in the unit**, e.g. turn, full-turn, half-turn, quarter-turn, clockwise and anticlockwise. * **Explain and demonstrate that turning a shape does not change its size or features**, e.g. 'When the shape does a half-turn, it is the same but upside-down.' * **Demonstrate how to insert, copy, paste and rotate shapes using Word.** | LEARNING SEQUENCERemediationES1 | * **Students practice making quarter, half and full turns using the minute hand of the clock.** |
| LEARNING SEQUENCES1 | * **Geo Strips:** Use two geo strips to make and draw half and quarter turns from the same starting point. * **Turning Shapes:** Give each child a square made from nine squares (3cmx3cm) on grid paper. Children colour squares to make a shape. They copy this onto a sheet of grid paper and label it with the starting position. They then turn the original through a quarter-turn clockwise, and copy & label it. Then repeat using a quarter-turn anti-clockwise, a half-turn and a full-turn. * **Shapes in Microsoft Word:** Students create a shape in Word. They copy and paste the shape, then using the rotation tool, they turn the copy a specified amount and direction, then label it. Repeat with varying amounts of rotation, in both clockwise and anti-clockwise directions. Discuss the results. * **Assessment** **Worksheet – Turns 2a**: Students complete on the computer using the copy, paste and rotate functions. * **Investigation:** Students are shown a pattern constructed from a repeated pattern of flips, slides or turns. Students then investigate the combination of movements required to produce the pattern. |
| LEARNING SEQUENCEExtensionEarly S2 | * Discuss and make repeating patterns using combinations of slides, flips and turns. Record the patterns on paper or use appropriate digital technology. Describing what is happening. |
| **EVALUATION & REFLECTION** | **Student Engagement:** **Achievement of Outcomes:**  **Resources:** **Follow Up:** |