**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**   * Identify full-, half- and quarter-turns of a single shape and use the terms 'turn', 'full-turn', 'half-turn' and 'quarter-turn' to describe the movement of the shape * Identify and describe amounts of turn using the terms 'clockwise' and 'anti-clockwise' * Perform full-, half-and quarter-turns with a single shape | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | **Pre-Assessment**    Worksheet – Turns1c | | |
| WARM UP / DRILL | | In small groups, students explore ways to create patterns by turning and tracing a variety of shapes using pattern blocks. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Steve walks 10 steps forward, makes quarter turn clockwise. He then walks forward 4 steps and makes a quarter turn clockwise and takes 10 more steps. What letter of the alphabet has he made? | | |
| 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 | | 2D Shapes (pattern blocks), Worksheet 1 – , Worksheet 2 – | | |

**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, anticlockwise * **Demonstrate full, half and quarter turns** of a variety of single shapes, in both clockwise and anticlockwise directions. * **Notebook activity: – Turns** <http://www.primaryresources.co.uk/maths/mathsE6.htm> * Clockwise and anti-clockwise   Place numbers 12, 3, 6 and 9 on walls to represent the ¼ hours. If you are the minute hand of a clock. Which way will you turn? We call this clockwise, as it’s the same direction that hands move on a clock. Turn to the 3. How far have you turned? ¼ turn. Turn back to 12. What direction did you turn? Anti-clockwise.  Repeat with half and full turns. | LEARNING SEQUENCERemediationES1 | * Using an analog clock face on the IWB students move the minute hand clockwise, anticlockwise, full half or quarter turns as directed by the teacher. |
| LEARNING SEQUENCES1 | * Show students a shape. They close their eyes. Turn the picture clockwise, a quarter turn as the students see it. They open their eyes. Ask – What have I done? Prompt for amount of turn and direction. Repeat with different turn and direction combinations. * **Worksheet 1– Turns 1a: -** Students identify which picture shows a quarter-turn, half-turn and full turn from the starting position * **Worksheet 2– Turns 1b:** - Students identify clockwise and anti-clockwise turns from the starting position. All turns are quarter-turns * **Assessment -**  **Worksheet 3– Turns 1c:** Students identify and describe quarter, half and full-turns in both clockwise and anti-clockwise directions * **Investigation:** Students walk a given route around the school grounds and record how many full, half and quarter turns they made and in what direction, clockwise or anti-clockwise. |
| LEARNING SEQUENCEExtensionEarly S2 | * On a grid, students design their own maps and guide their peers to the treasure using the language of full, half and quarter turns, clockwise and anti-clockwise. |
| **EVALUATION & REFLECTION** | **Student Engagement:** **Achievement of Outcomes:**  **Resources:** **Follow Up:** |