**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
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| 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
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| 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.
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| 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.
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| LEARNING SEQUENCEExtension Early 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.
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| **EVALUATION & REFLECTION** | **Student Engagement:** **Achievement of Outcomes:****Resources:** **Follow Up:** |