GEOMETRY, POSITION AND DIRECTION: PROGRESSION MAP FOR FLUENCY, REASONING AND PROBLEM SOLVING

Geometry, Position and Direction: Statutory Requirements and Reasoning (from NCETM)

<table>
<tr><th colspan="6">POSITION, DIRECTION AND MOVEMENT</th></tr>
<tr><th>Year 1</th><th>Year 2</th><th>Year 3</th><th>Year 4</th><th>Year 5</th><th>Year 6</th></tr>
<tr><td rowspan="2">describe position, direction and movement, including half, quarter and three-quarter turns.</td><td rowspan="2">use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</td><td rowspan="2"></td><td>describe positions on a 2-D grid as coordinates in the first quadrant</td><td rowspan="2">identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed</td><td>describe positions on the full coordinate grid (all four quadrants)</td></tr>
<tr><td>describe movements between positions as translations of a given unit to the left/right and up/down</td><td>draw and translate simple shapes on the coordinate plane, and reflect them in the axes.</td></tr>
<tr><td></td><td></td><td></td><td>plot specified points and draw sides to complete a given polygon</td><td></td><td></td></tr>
<tr><td>Working backwards

The shape below was turned three quarter of a full turn and ended up looking like this.
 
What did it look like when it started? (practical)</td><td>Working backwards

If I face forwards and turn three quarter turns clockwise then a quarter turn anti-clockwise describe my finishing position.</td><td>Working backwards

If I make the two opposite sides of a square 5 cm longer the new lengths of those sides are 27cm.
What was the size of my original square?
What is the name and size of my new shape?</td><td>Working backwards

Here are the co-ordinates of corners of a rectangle which has width of 5.
(7, 3) and (27, 3)
What are the other two co-ordinates?</td><td>Working backwards

A square is translated 3 squares down and one square to the right.
Three of the coordinates of the translated square are:
(3, 6) (8, 11) (8, 6)
What are the co-ordinates of the original square?</td><td>Working backwards

Two triangles have the following co-ordinates:
Triangle A:
(3, 5) (7, 5) (4, 7)
Triangle B:
(3, 1) (7, 1) (4, 3)
Describe the translation of triangle A to B and then from B to A.</td></tr>
</table>

PATTERN					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	order and arrange combinations of mathematical objects in patterns and sequences				
	What comes next?  **Explain why**				

Geometry, Position and Direction: Key Performance Indicators

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Identify whether angles are greater or less than a right angle	Describe positions on a 2-D grid using co-ordinates Describe translations using a given unit to the left/right and up/down	Describe and represent the result of a reflection or translation	Describe positions on the full co-ordinate grid Translate shapes on a co-ordinate grid and reflect in the axes

Geometry, Position and Direction: Cross-curricular links

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geography - Use positional language to draw a map of journey from school to Verdin Park. Direct a bee bots on a map from school to Verdin Park. PE - Use directional language in PE activities.	PE turns in gymnastics Geography – directing on a map	Finding directions using a compass – turns and angles (Geography)	Geography – OS Maps and 4 figure grid reference		Geography- To use an ordnance survey map and use coordinates to find points

Geometry, Position and Direction: Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Underneath Behind Beside Opposite Left Right Whole turn Half turn Quarter turn Three-quarter turn	Clockwise Anticlockwise Whole turn Half turn Quarter turn Three-quarter turn Right-angle Straight line	Compass point north (N) south (S) east (E) west (W) horizontal vertical diagonal Whole turn Half turn Quarter turn Three-quarter turn Angle … is a greater/smaller angle than Right angle Acute angle Obtuse angle	Position compass coordinate north (N) south (S) east (E) west (W) north-east (NE) south-east (SE) north-west (NW) south-west (SW) translate translation rotate rotation degree right angle acute angle obtuse angle reflection ruler set square angle measurer compass	Clockwise Anticlockwise Compass point north (N) south (S) east (E) west (W) north-east (NE) south-east (SE) north-west (NW) south-west (SW) horizontal vertical diagonal translate translation coordinate Whole turn Half turn Quarter turn Three-quarter turn Rotate Rotation Degree right angle acute angle obtuse angle reflection straight line angle measurer compass	translate translation coordinate right angle acute angle obtuse angle reflex angle reflection angle measurer compass protractor

				protractor	