



Year 9 Maths Learning Journey

Spring Term 5

Reasoning with geometry: Rotation and translation

Core knowledge	Reference number
Identify the order of rotational symmetry of a shape “How do you find the order of rotational symmetry of a shape?”	WORKSHEET
Compare and contrast rotational symmetry with line symmetry “Can a shape have order of rotational symmetry 2 but no lines of symmetry?”	WORKSHEET
Rotate a shape about a point on a shape “How does rotation affect the orientation of an object?”	WORKSHEET
Rotate a shape about a point not on a shape “Why does a 90 degree rotation clockwise produce the same image as a 270 degree rotation anti-clockwise?”	WORKSHEET
Translate points and shapes given by a vector “Why does a translation vector have two components?”	WORKSHEET
Compare rotation and reflection of shapes “What information do you need to perform/describe a rotation/reflection?”	WORKSHEET
Find the result of a series of transformations (H) “Which transformation should you do first? Why?”	WORKSHEET

Learning Checkpoints

LC Title	Completed	Dirt
Rotation and translation		

Key Vocabulary

Anti-clockwise: In the direction the opposite direction to the clock.

Centre: The middle point for example of a line or a circle

Clockwise: In the direction in which the hands of an analogue clock travel.

Horizontal: parallel to the horizon.

Image: The new shape created after an Enlargement

Invariant: A quantity which remains unchanged under certain classes of transformations.

Irregular: When the sides of a polygon are not all of equal length and the angles are not all of equal size.

Mirror line: This line can be horizontal, vertical, or even diagonal. A shape is reflected using this line

Object: A mathematical object is, loosely speaking, anything you can "do mathematics on".

order of rotational symmetry: A 2-D shape has rotation symmetry about a point if an identical-looking shape in the same position is produced by a rotation.

Regular: To formulate a chain of reasoning that establishes in conclusion the truth of a proposition.

Rotate: A circular movement. Rotation has a central point that stays fixed and everything else moves around that point in a circle.

Rotation: In 2-D, a transformation of the whole plane which turns about a fixed point, the centre of rotation.

Shape: In geometry, a shape can be defined as the form of an object or its outline, outer boundary or outer surface.

Reflection symmetry: A 2-D shape has reflection symmetry about a line if an identical looking object in the same position is produced by reflection in that line.

Translation: A transformation in which every point of a body moves the same distance in the same direction. A transformation specified by a distance and direction

Vector: The instruction that translates a shape up, down or from side to side but it does not change its appearance in any other way.

Vertex: The point at which two or more lines intersect. Plural: vertices

Vertical: at right angles to the horizontal plane.