

Transformation

	Stage 1 (Junior & Senior Infants)	Stage 2 (1st & 2nd Class)	Stage 3 (3rd & 4th Class)	Stage 4 (5th & 6th Class)
<i>Through appropriately playful and engaging learning experiences, children should be able to</i>				
Learning Outcomes	explore the effects of shape movements.	understand that shapes and line segments can be reflected, rotated and translated.	model and explain the effects of transformations on shapes and line segments.	perform and devise a range of steps involving transformations. analyse and show how shapes are enlarged on scaled diagrams.
Mathematical concepts	The movement of shapes and objects can be described using simple words such as flip, turn and slide.	Transformations involve actions on shapes.	A shape or line is rotated when it is turned around a point called the centre of rotation. The direction and amount of turn can be described using mathematical terminology and angle measures.	Transformations can involve a number of steps. These steps can be identified, ordered, recorded and performed (with or without technology).
	A shape's position, orientation or size can be changed without changing the kind of shape it is.	The mathematical terms reflect, rotate and translate can be used to describe the movement of shapes and objects. A shape or line is reflected when it is the same perpendicular distance from the mirror line. A shape or line is rotated when it is turned around a point. A shape or line is translated when it is moved a certain distance from its original position (without turning).	A shape or pattern has rotational symmetry if it looks the same after a rotation of less than one full turn.	Co-ordinates are pairs of numbers, the first of which indicates the point on the x-axis and the second on the y-axis.
		Simple units of measurement and/or grids are useful to describe and plot shape movements.	Tessellation involves covering a surface with no gaps or overlaps, using one or more geometric shapes. Certain shapes and combinations of shapes can tessellate.	When shapes are transformed on the co-ordinate plane, their co-ordinates can be predicted and deduced.
		A shape or pattern has reflective symmetry if it remains the same when reflected through a mirror line. The mirror line can be part of the shape/object or external to it.	Regular tessellations are tessellations of regular polygons. There are three types of regular tessellations: triangles, squares and hexagons.	It is possible to enlarge a shape. Enlarged shapes remain similar to the original shape in terms of their corresponding angles and the proportion of their sides.