Max’s Masterclass: The Art of Transformations

Get Moving with Max: Master the Geometry of Motion!

■ **Translation: To translate a shape, we move it across a grid without turning it. We describe this by how many squares it moves horizontally and then vertically.**

■ **Reflection: When reflecting a shape, it acts as if it is looking into a mirror. The shape flips over a 'mirror line', but its distance from the line stays the same on both sides.**

■ **Rotation: Rotating a shape means turning it around a fixed point called the 'centre of rotation'. Always specify the number of degrees (e.g., 90°) and the direction (clockwise or anti-clockwise).**

■ **Coordinates: When a shape is transformed on a four-quadrant grid, each vertex moves to a new set of (x, y) coordinates. Always write the x-axis value first!**

■ **Symmetry: If a shape can be reflected onto itself exactly, it possesses line symmetry. Check if your shape has one or more lines of symmetry before you begin your transformation.**

Did you know? Did you know? In mathematics, a 'congruent' shape is one that stays exactly the same size and shape even after it has been moved, flipped, or turned. Max the monkey loves using this to solve puzzles—no matter how much he slides his shapes around the grid, the area and perimeter always remain identical!

Key vocabulary: Translation · Reflection · Rotation · Vertex · Coordinates · Clockwise · Anti-clockwise · Mirror line