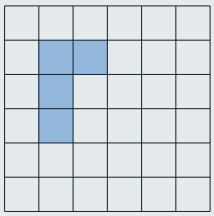
Reflection in the axes and lines of symmetry

MODULE 8 · LOCATION, TRANSFORMATIONS AND SCALE REVIEW

A **reflection** flips a shape over a mirror line. Each point lands the same distance on the other side of the line.



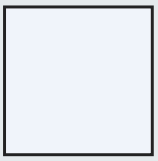
→ Reflecting (3, 2) in the y-axis gives (−3, 2).

HOW TO ANSWER TODAY

- **Lines of symmetry.** A line of symmetry folds the shape so both halves match. Count every direction that works.
  Square → 4 lines (2 middles + 2 diagonals) · Equilateral triangle → 3
- **Transformations.** Slide without turning → translation. Flip (mirror) → reflection. Turn → rotation.
  Triangle slid left → translation · Letter flipped → reflection

WARM-UP

1



At the after-school crafts club, Saoirse cuts out a square panel of paper to decorate the centre of her kite. Before she sticks on the ribbons, she wants to fold the square to find every line of symmetry. How many lines of symmetry does the square have?

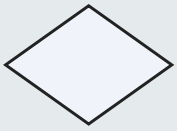
2 Aoife is decorating the 5th class door for Seachtain na Gaeilge. She pins a paper shamrock in the centre of the door, then turns it around the pin to find the best angle. The shape turns around a fixed point. Is this transformation a translation, a reflection or a rotation?

> Name the transformation described: the shape turns around a fixed point. (Choose translation, reflection or rotation.)

3

Cian is designing a rectangular base plate for his robot in 5th class robotics club. He wants to draw all the lines of symmetry on the rectangle before he starts cutting. How many lines of symmetry does a rectangle have?

4



Cian is painting rhombus-shaped tiles around the edge of the giant chess board on the school yard. Miss Murphy asks him to mark every line of symmetry on one rhombus with chalk. How many lines of symmetry should he draw?