Location and transformation investigation

MODULE 8 · SYMMETRY, LOCATION AND TRANSFORMATION · SHAPE & SPACE

HOW TO ANSWER TODAY

- **Transformations.** Slide without turning → translation. Flip (mirror) → reflection. Turn → rotation.
  Triangle slid left → translation · Letter flipped → reflection
- **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

STRETCH PROBLEMS

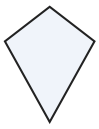
1. For STEM week, Oisín draws his model bridge on squared paper. One corner of the bridge base sits at (2 , 6). He slides the whole shape 1 square left and 4 squares up to fit the page. Where is that corner now?

2. Fionn draws a treasure map on squared paper for the school garden trail. He marks the flag 8 squares across and 1 square up from the corner. Write the flag's position as (across, up).

3. Cian plans the new school polytunnel on squared paper. He marks a raised bed with a corner at (2 , 5), then slides the bed 1 square left and 3 squares up to make room for the path. Where is that corner now?

4. On the giant chess board painted on the yard, Oisín stands on a square facing south. He makes a half turn anticlockwise. Which way is he facing now?

5. Tadhg makes a kite shape for the classroom art wall using coloured card. How many lines of symmetry does his kite have?



INVESTIGATE

Design a repeating tile

On a grid, build a repeating pattern that uses at least **two** of: reflection, rotation, translation. Mark any mirror line or turn centre. Give the grid reference of three key squares and write steps so a partner could rebuild your design.