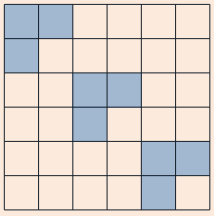
Module assessment – tessellate a quilt block

MODULE 6 · 2D AND 3D SHAPE, ANGLES, SYMMETRY SHAPE & SPACE

Shapes **tessellate** when they fit together with **no gaps** and **no overlaps**, covering a flat surface. The angles meeting at every point must add up to exactly **360°**.



→ **Squares** tessellate — four squares meet at a point: 4 × 90° = 360°.
→ **Equilateral triangles** tessellate — six meet at a point: 6 × 60° = 360°.
→ **Regular pentagons do NOT tessellate** — three pentagons leave a 36° gap (3 × 108° = 324°).

HOW TO ANSWER TODAY

- **Name a 2D shape.** Count sides, check which are equal, count right angles, check parallel pairs. Then name it.
  4 equal sides, 0 right angles → rhombus · 4 sides, 1 pair parallel → trapezium
- **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

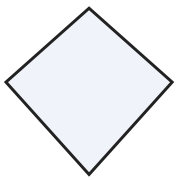
MATCH-UP

Match each regular shape to whether it tessellates on its own.

a. Square	1. tessellates (6 × 60° = 360°)
b. Equilateral triangle	2. does not on its own (3 × 135° = 405°)
c. Regular hexagon	3. does not (3 × 108° = 324°)
d. Regular pentagon	4. tessellates (4 × 90° = 360°)
e. Regular octagon	5. does not on its own (3 × 150° = 450°)
f. Regular dodecagon	6. tessellates (3 × 120° = 360°)

PRACTICE

1. Oisín is cutting flat panels from cereal boxes for a junk-modelling project in 5th class. One panel has **4** sides with **2** pairs of equal length and **4** right angles. Which 2D shape is the panel?
   Which 2D shape has these properties: 4 sides with 2 pairs of equal length and 4 right angles?

2. 

   5th class are planning a kite-shaped flowerbed for the school garden. Saoirse wants to mark the lines of symmetry on her sketch before they plant the seeds. How many lines of symmetry does a kite have?