

BUILD A 4 BY 4 QUILT BLOCK

- 1 Mark a 4 by 4 outline on the squared grid.
- 2 Place unit squares inside so every cell is filled and edges touch with no gaps.
- 3 Check one interior meeting point: four 90° corners meet, and $90 + 90 + 90 + 90 = 360^\circ$.
- 4 The block is complete and tessellates; it also looks the same after a quarter turn (rotational symmetry of order 4).

WARM-UP

Use the squared paper to draw and check each quilt-block idea.



1. Draw a 2 by 5 outline and fill every cell with unit squares so the block tessellates with no gaps.
2. Sketch the plus-shaped block that uses 5 unit squares (middle plus four arms) and check the meeting corners.
3. Draw a 2 by 2 square patch, then translate it three whole squares to the right and redraw it on the grid.

PRACTICE

- 1 Each corner of an equilateral triangle patch is 60° . You fit triangle patches round one point of the quilt.

How many 60° corners must meet at one point to make exactly 360° ?

- 2 You spin your finished square quilt block on the desk to check its symmetry while designing.

A 4 by 4 quilt block has rotational symmetry of order 4. After how many quarter turns does it look the same again for the first time?

? ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

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|---|--|
| a. Four 90° corners meeting at a point add up to 360° and close with no gap. <input type="text"/> | c. A shape that tessellates can cover a quilt block completely when copies are fitted edge to edge. <input type="text"/> |
| b. Regular pentagons tessellate an area with no gaps and no overlaps. <input type="text"/> | d. Copies of a polygon's corner angle fit around a point to make exactly 360° . <input type="text"/> |

