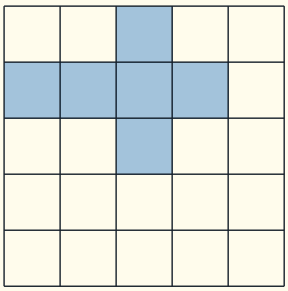
Lesson 77

3D shapes – nets and building models

CHECKING A CUBE NET

1. The net shows four squares in a row, plus one square above and one below.
2. Count the squares: there are **6**, and a cube needs exactly **6** faces.
3. The row folds up to make the four side walls; the extra squares become the lid and the base with no overlap or gap.
4. It closes neatly, so this flat shape is a net of a cube.



PRACTICE

1. Sadhbh is cutting squares to build a cube net for the class model. She needs one flat square for each face. How many squares should she cut?
2. Tom opens a cereal box right out until it lies flat on the making table. He counts each joined rectangle. How many rectangles make up the net?
3. Aoife lays **6** squares in one straight line and tries to fold them up. Two of them overlap when she folds. Does this arrangement close into a cube?
4. Liam builds this cross-shaped arrangement on the grid and predicts before folding. Will it close into a cube with no gap and no overlap?
5. Niamh cuts out the printed cuboid net at her desk and folds along every crease. She checks each face is a rectangle. How many faces are on the net?
6. Cian designs a net on plain paper but only joins **5** squares together. He tries to fold it into a cube. Can **5** faces make a closed cube?

ALWAYS, SOMETIMES, NEVER

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

a. A cube has 6 faces, 12 edges and 8 vertices. ☐

b. A cube and a cuboid have the same number of edges. ☐

c. A square-based pyramid has 5 faces. ☐

d. A square-based pyramid has 8 edges and 5 vertices. ☐

REFLECT What makes one net fold cleanly into a solid while another overlaps?

SHAPE & SPACE