

3D shapes: nets and building models

CURRICULUM ALIGNMENT

SHA.SHP.3a

investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties.

SHA.SHP.3b

represent shapes with drawings and models, and calculate dimensions of shapes.

INTERACTIVES Net Folder · challenge, display, explore

WHAT THIS LESSON TEACHES

A net is a flat shape made of joined faces that folds up to make a solid. Every face of the solid shows flat on the net before you fold, so you can count the faces on the net and match them to the solid.

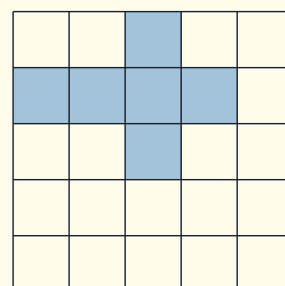
→ A cereal box opened out flat is six joined rectangles. That flat shape is the net of the box.

→ A cube net has six squares; the middle square becomes the base and one folds over to make the lid.

MODEL THIS ON THE BOARD

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.



DISCUSSION STARTER

REFLECT

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

ANSWER KEY

b) Yes

c) No

Q1: 6

Q2: No

a) Always : The lesson directly states these counts for a cube.

b) Always : Both are taught as having 12 edges.

c) Sometimes : Cubes and cuboids have 8 vertices but a square-based pyramid has 5.

d) Never : A square-based pyramid has 8 edges while a cube has 12.

EXTENSION SHEET · STRETCH ANSWERS

S1: cylinder

S2: cone

S3: tetrahedron

S4: square-based pyramid

S5: cuboid