

Properties and faces, edges, vertices of polyhedra

WHAT THIS LESSON TEACHES

A flat surface of a solid shape is a face. A cube has six square faces, twelve edges and eight vertices.

→ A cardboard box has six faces.

→ A cube has twelve edges and eight vertices.

MODEL THIS ON THE BOARD

COUNTING THE CUBE

- ① Count the flat faces on all sides of the cube: front back left right top bottom gives **6**.
- ② Count where two faces meet to find the edges: **12** in total.
- ③ Count the pointed corners for the vertices: **8** altogether.
- ④ Check the pattern with $6 + 8 - 12 = 2$.

ANSWER KEY

Scaffold: visual check on the page

Q1: 8

Q2: 12

Q3: 5

Q4: 5

Q5: 6

Q6: 2

a) **Always** — Every cube has exactly six faces.

b) **Sometimes** — Some solids like pyramids have 5 faces.

c) **Never** — Edges and faces are different counts.

d) **Always** — Euler's rule holds for these solids.

EXTENSION SHEET · STRETCH ANSWERS

S1: a square-based pyramid

S2: a cuboid