Faces, Edges and Vertices: Counting the Corners of 3D Shapes

Key points

- 3D (three-dimensional) shapes are solid shapes, such as cubes, cones and spheres, that have depth as well as width and height.
- A face is a flat surface of a shape, such as one of the six square sides of a dice.
- An edge is the straight line where two faces meet, and a vertex (the plural is vertices) is a corner point where edges meet.
- A cube has 6 faces, 12 edges and 8 vertices, and using these words helps children describe shapes more precisely than vague words like 'sides' or 'points'.
- Some shapes have curved surfaces, so their counts are different: a sphere has no flat faces, edges or vertices.
- Faces, edges and vertices are a Year 2 maths topic (children aged 6 to 7), so in Reception your child is building the early shape-spotting skills that lead to it, and there is no need to hurry.

Things to try at home

- Shape hunt: find a dice, a cereal box and a tin, then tap each flat face with a finger and count them out loud together.
- Corner count: touch each corner of a cereal box and count the vertices, saying the word 'vertex' as you go, and the box will likely be a fun game to repeat.
- Playdough shapes: roll a ball and then pinch out a cube, and talk about which one has corners and which one is smooth.
- Party hat guessing: hold up a party hat and ask, 'How many corners do you think the tip has?' Check together and enjoy any answer, as there are no wrong guesses.
- Describe it: play 'I spy' with a shape, giving clues such as 'I have six flat faces' for others to guess.

Find out more

- GOV.UK: National curriculum in England: mathematics programmes of study, which sets out the Year 2 requirement to describe the properties of 3D shapes.
- GOV.UK: Early years foundation stage (EYFS) statutory framework, which sets out the learning expected in Reception.
- Your child's school: ask the class teacher how shapes are taught and which counting words they use, as approaches can vary between schools.