# Extra Content for Foundation GCSE

## 130. Identifying Properties of 3D Shapes (Cubes, Prisms, Cylinders, Pyramids, Cones, Spheres)

### Practice Questions

1. How many faces, edges, and vertices does a cube have?
2. How many faces, edges, and vertices does a triangular prism have?
3. What is the difference between a prism and a pyramid?
4. How many faces, edges, and vertices does a rectangular prism (cuboid) have?
5. What shape is the cross-section of a cylinder?
6. How many faces, edges, and vertices does a square-based pyramid have?
7. How many curved surfaces does a cone have?
8. What are the properties of a sphere in terms of faces, edges, and vertices?
9. What is the difference between a cylinder and a prism?
10. What 3D shape has only one vertex?

### Scenario Questions

1. A packaging designer is creating a box for a product. What 3D shape is most efficient for stacking?
2. A water pipe has a cylindrical shape. What is the shape of the cross-section when cut horizontally?
3. A tent is shaped like a triangular prism. How many faces, edges, and vertices does it have?
4. A football is an example of what type of 3D shape?
5. A cone-shaped ice cream is placed upside down on a table. How many faces and vertices does it have?
6. A factory produces metal rods that are prisms with a circular cross-section. What shape best describes them?
7. A pyramid model is built with a square base and triangular sides. How many faces, edges, and vertices does it have?
8. A science experiment uses a hemisphere (half of a sphere). How many faces does it have?
9. A building has a cylindrical water tank on top. What shape does the base of the tank have?
10. A dice manufacturer needs to design a perfect cube. What are its faces, edges, and vertices?

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Answers

### Practice Questions

1. **Cube:** 6 faces, 12 edges, 8 vertices
2. **Triangular prism:** 5 faces, 9 edges, 6 vertices
3. **Difference between prism and pyramid:** A prism has two identical bases, while a pyramid has one base and triangular sides meeting at a vertex.
4. **Rectangular prism (cuboid):** 6 faces, 12 edges, 8 vertices
5. **Cross-section of a cylinder:** Circle
6. **Square-based pyramid:** 5 faces, 8 edges, 5 vertices
7. **Cone:** 1 curved surface
8. **Sphere:** 0 faces, 0 edges, 0 vertices
9. **Difference between cylinder and prism:** A cylinder has curved surfaces, while a prism has flat faces.
10. **3D shape with one vertex:** Cone

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### Scenario Questions

1. **Efficient stacking shape:** Cube or rectangular prism
2. **Cross-section of a horizontal cylindrical pipe:** Circle
3. **Triangular prism tent:** 5 faces, 9 edges, 6 vertices
4. **Football shape:** Sphere
5. **Upside-down cone:** 1 face, 1 vertex
6. **Metal rods shape:** Cylinder
7. **Square-based pyramid model:** 5 faces, 8 edges, 5 vertices
8. **Hemisphere:** 1 curved face
9. **Base of a cylindrical water tank:** Circle
10. **Perfect cube:** 6 faces, 12 edges, 8 vertices