

Lesson 1- Maths Properties of shapes

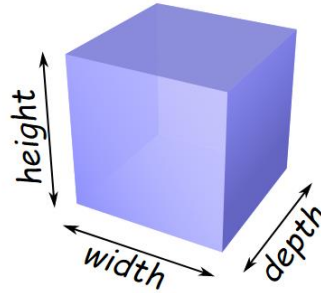
Solid Geometry

Solid Geometry is the **geometry** of three-dimensional space, the kind of space we live in.



Three Dimensions

It is called **three-dimensional**, or **3D**, because there are three **dimensions**: *width*, *depth* and *height*.



Common 3D Shapes



Sphere



Torus



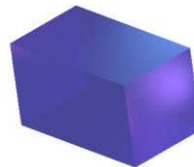
Cylinder



Cone



Cube



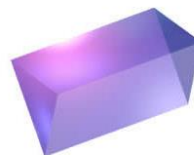
Cuboid



Triangular Pyramid



Square Pyramid



Triangular Prism

Choose the sheet that you feel the most confident answering.

Differentiation:

Developing Questions to support reasoning about simple 3D shapes: cubes, cuboids and triangular or square based pyramids. Questions use nets and descriptions.

Expected Questions to support reasoning about familiar 3D shapes, including pyramids and prisms. Questions use nets and descriptions.

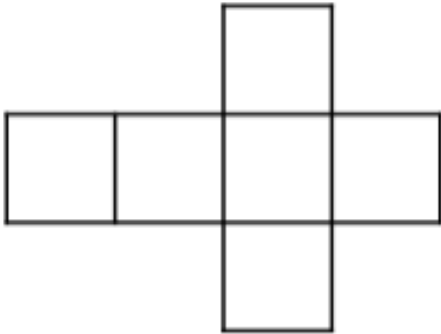
Greater Depth Questions to support reasoning about 3D shapes, including pyramids, prisms and hedrons. Questions use nets and descriptions.

Developing = * 1 star

Reasoning about 3D Shapes

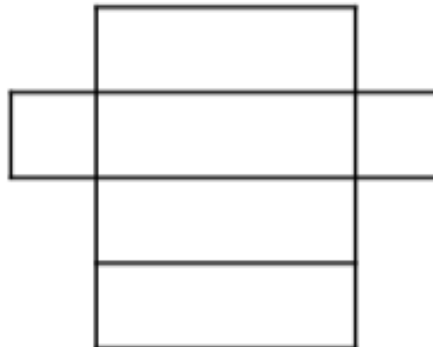
Reasoning about 3D Shapes

1a. Count and name the 2D shapes in this net.



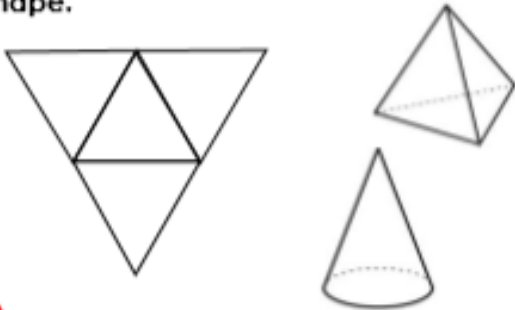
VF

1b. Count and name the 2D shapes in this net.



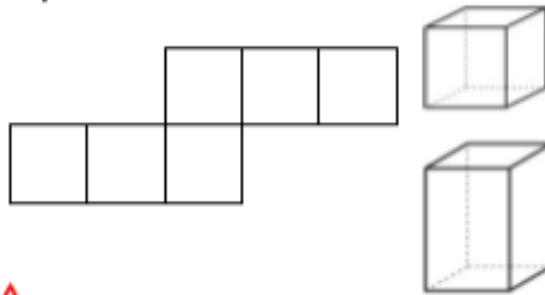
VF

2a. Match the net to the correct 3D shape.



VF

2b. Match the net to the correct 3D shape.



VF

3a. Which 3D shape does the statement describe?

I have 4 rectangular faces and 2 square faces.



VF

3b. Which 3D shape does the statement describe?

My base is a square and I have 4 triangular faces.



VF

4a. Match the faces to the correct 3D shapes.

- | | |
|--------------------|--------------------------|
| 8 square faces | square based pyramid |
| 1 square base | triangular based pyramid |
| 4 triangular faces | cube |



VF

4b. Match the faces to the correct 3D shapes.

- | | |
|---------------------|--------------------------|
| 4 rectangular faces | triangular based pyramid |
| 6 square faces | cube |
| A triangular base | cuboid |



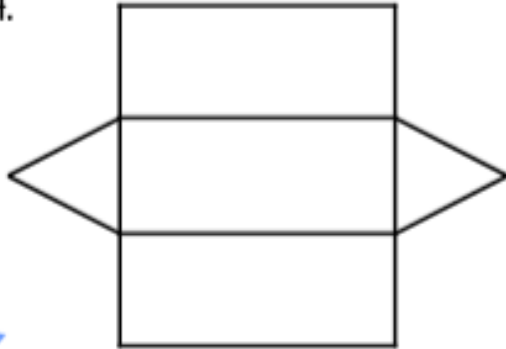
VF

Expected = ** 2 stars

Reasoning about 3D Shapes

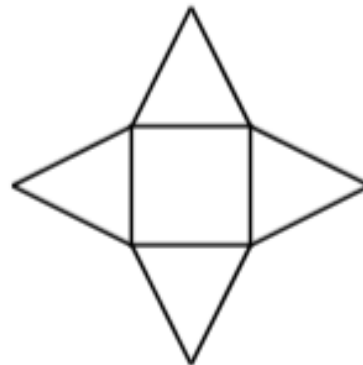
Reasoning about 3D Shapes

5a. Count and name the 2D shapes in this net.



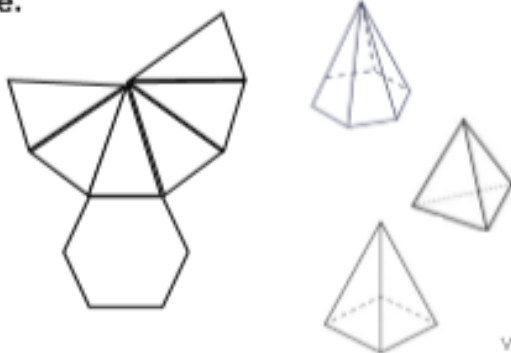
VF

5b. Count and name the 2D shapes in this net.



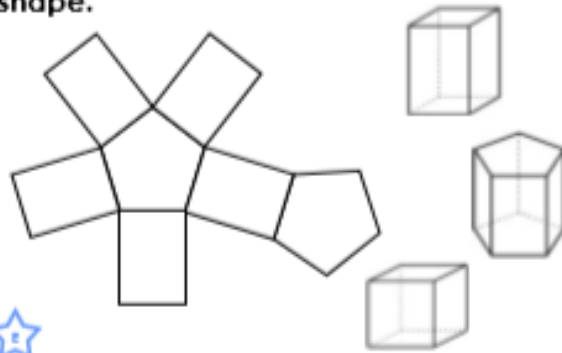
VF

6a. Match the net to the correct 3D shape.



VF

6b. Match the net to the correct 3D shape.



VF

7a. Which 3D shape does the statement describe?

My base is a pentagon and I have another opposite. All other faces are rectangles.



VF

7b. Which 3D shape does the statement describe?

I have five faces. Two faces are triangles and three faces are rectangles.



VF

8a. Match the faces to the correct 3D shapes.

5 rectangular faces

cuboid

2 triangular faces

pentagonal prism

4 rectangular faces

triangular prism



VF

8b. Match the faces to the correct 3D shapes.

A square face

cube

2 pentagonal faces

square based pyramid

6 square faces

pentagonal prism



VF

Greater Depth = *** 3 stars

Reasoning about 3D Shapes

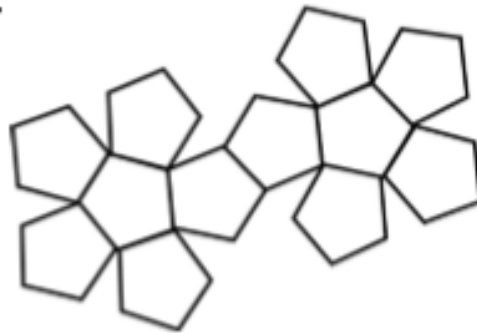
Reasoning about 3D Shapes

9a. Count and name the 2D shapes in this net.



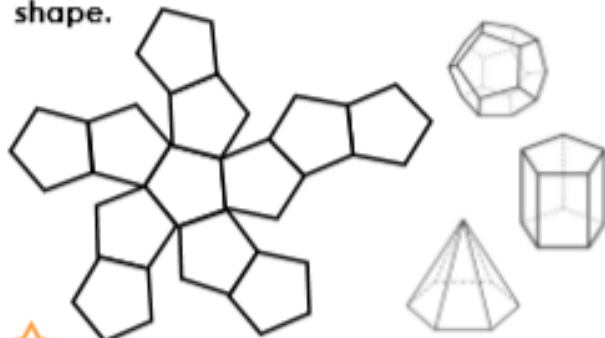
VF

9b. Count and name the 2D shapes in this net.



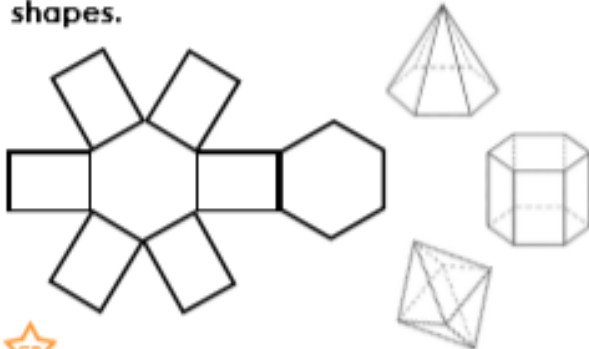
VF

10a. Match the net to the correct 3D shape.



VF

10b. Match the net to the correct 3D shapes.



VF

11a. Which 3D shape does the statement describe?

I have 6 quadrilateral faces and two further faces that have two more sides than the other faces.



VF

11b. Which 3D shape does the statement describe?

My base is a six sided shape and I have faces that have half the number of sides as the base.



VF

12a. Match the faces to the correct 3D shapes.

rectangular faces

tetrahedron

4 triangular faces

dodecahedron

All pentagonal faces

pentagonal prism



VF

12b. Match the faces to the correct 3D shapes.

1 curved face

tetrahedron

All triangular faces

hexagonal prism

6 rectangular faces

cylinder



VF