

# Varied Fluency

## Step 9: Reasoning about 3D Shapes

### National Curriculum Objectives:

Mathematics Year 5: (5G3b) [Identify 3-D shapes, including cubes and other cuboids, from 2-D representations](#)

### 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.

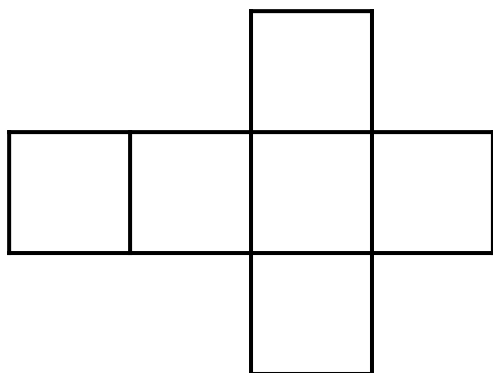
**Greater Depth** Questions to support reasoning about 3D shapes, including pyramids, prisms and hedrons. Questions use nets and descriptions.

More [Year 5 Properties of Shapes](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

## Reasoning about 3D Shapes

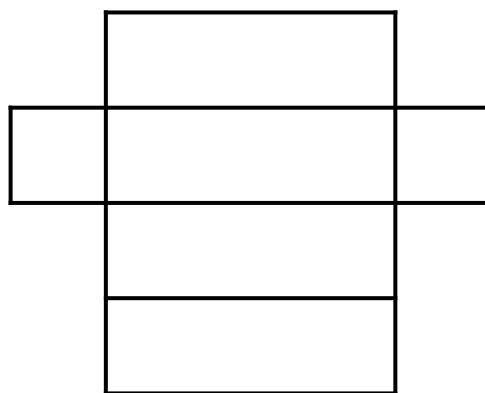
1a. Count and name the 2D shapes in this net.



VF

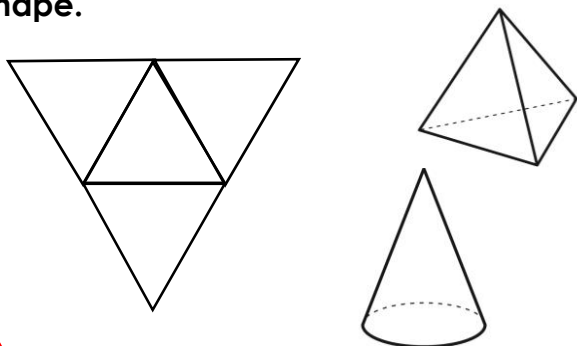
## Reasoning about 3D Shapes

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



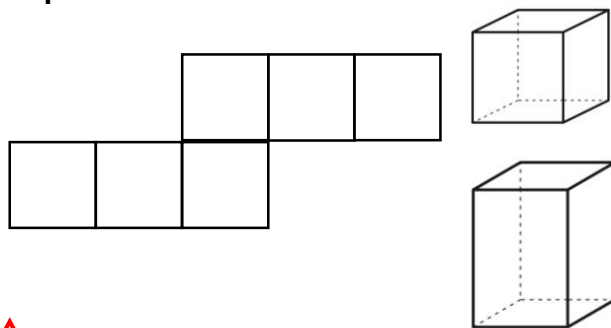
VF

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

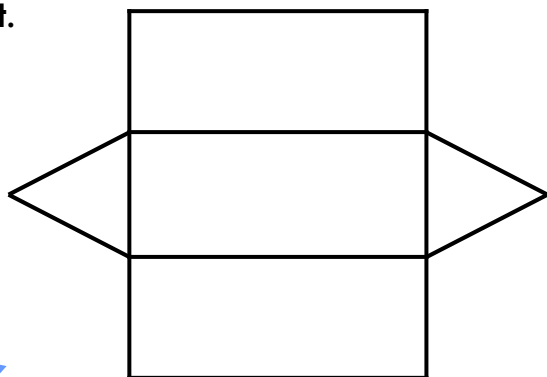


VF

## Reasoning about 3D Shapes

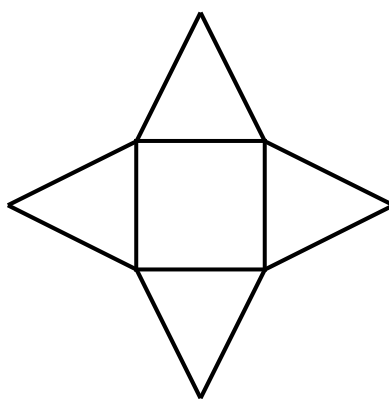
## Reasoning about 3D Shapes

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



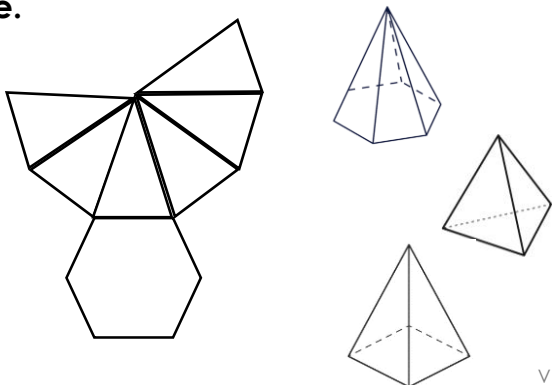
VF

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



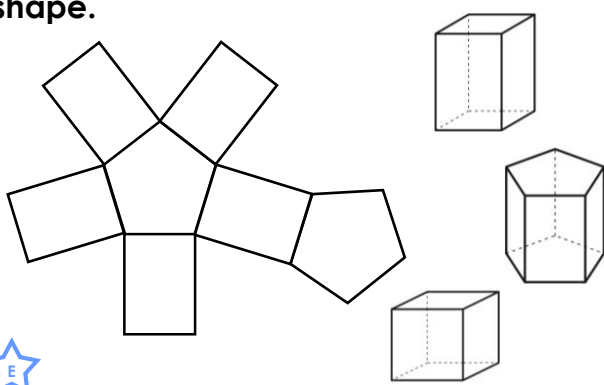
VF

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

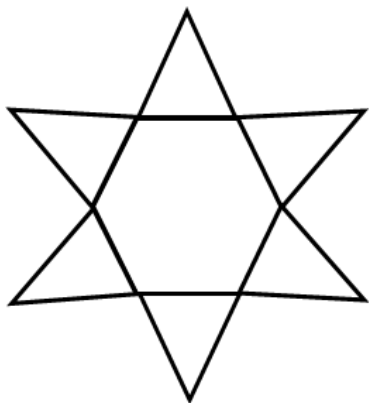
pentagonal prism



VF

## Reasoning about 3D Shapes

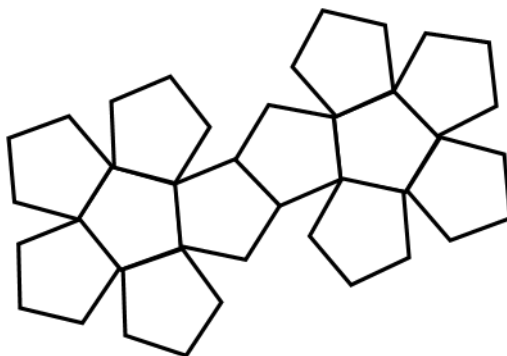
9a. Count and name the 2D shapes in this net.



VF

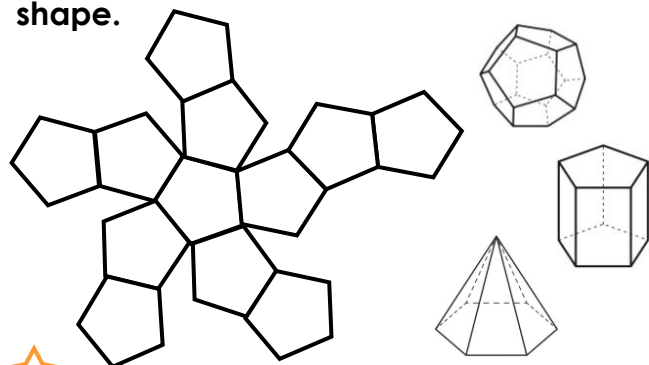
## Reasoning about 3D Shapes

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



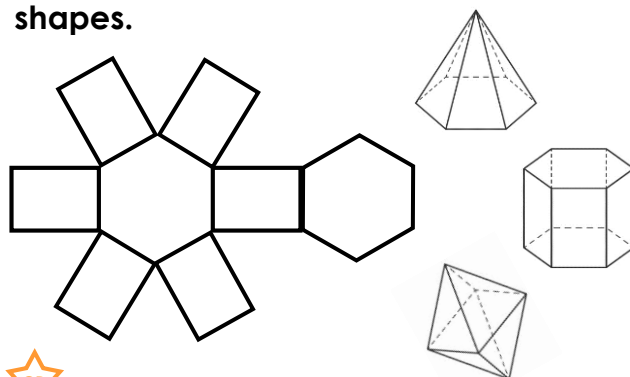
VF

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

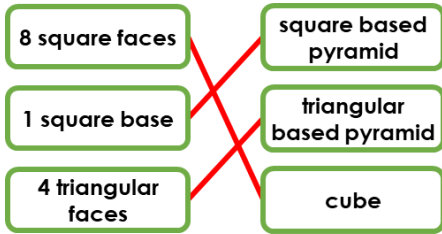


VF

## Varied Fluency Reasoning about 3D Shapes

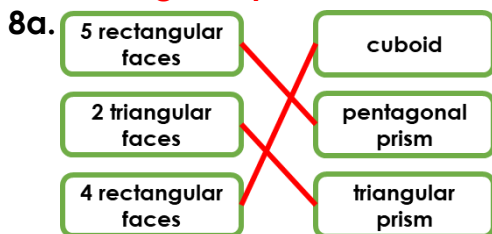
### Developing

- 1a. **6 squares**  
2a. **Triangular based pyramid**  
3a. **Cuboid**  
4a.



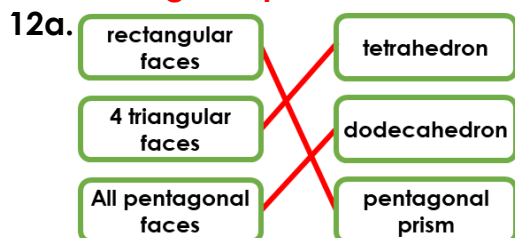
### Expected

- 5a. **3 rectangles and 2 triangles**  
6a. **Hexagonal based pyramid**  
7a. **Pentagonal prism**



### Greater Depth

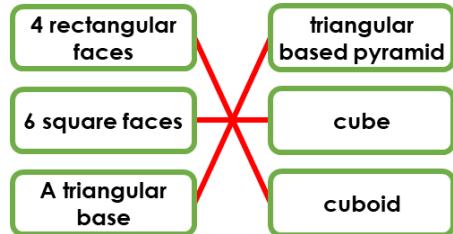
- 9a. **1 hexagon and 6 triangles**  
10a. **Dodecahedron**  
11a. **Hexagonal prism**



## Varied Fluency Reasoning about 3D Shapes

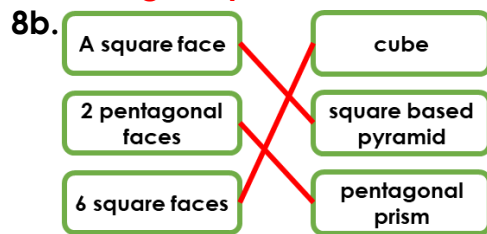
### Developing

- 1b. **2 squares and 4 rectangles**  
2b. **Cube**  
3b. **Square based pyramid**  
4b.



### Expected

- 5b. **1 square and 4 triangles**  
6b. **Pentagonal prism**  
7b. **Triangular prism**



### Greater Depth

- 9b. **12 pentagons**  
10b. **Hexagonal prism**  
11b. **Hexagonal based pyramid**

