16.06.20

WALT draw 3D nets

Notes and Guidance

Children use their knowledge of 2-D and 3-D shapes to identify three-dimensional shapes from their nets.

Children need to recognise that a net is a two-dimensional figure that can be folded to create a three-dimensional shape.

They use measuring tools and conventional markings to draw nets of shapes accurately.
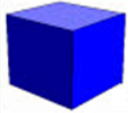
Mathematical Talk

Looking at the faces of a three-dimensional shape, what two-dimensional shapes can you see?

What is a net? What shape will this net make? How do you know? What shape won't it make?
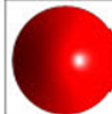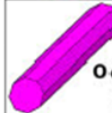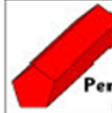
If you make this net, what would happen if you were not accurate with your measuring?

How many 3D shapes can you remember?

3D Shape Properties

Shape	Properties
Cube	6 faces, 8 vertices, 12 edges
Cylinder	3 faces, 0 vertices, 2 edges
Cone	2 faces, 0 vertices, 1 edge
Triangular Prism	5 faces, 6 vertices, 9 edges

Shape	Properties
Tetrahedron	4 faces, 4 vertices, 6 edges
Hexagonal Prism	8 faces, 12 vertices, 18 edges
Octahedron	8 faces, 6 vertices, 12 edges
Cuboid	6 faces, 8 vertices, 12 edges

| Shape	Properties
Square-based Pyramid	5 faces, 5 vertices, 8 edges
Sphere	1 faces, 0 vertices, 0 edges
Octagonal Prism	10 faces, 16 vertices, 24 edges
Pentagonal Prism	7 faces, 10 vertices, 15 edges

Varied Fluency

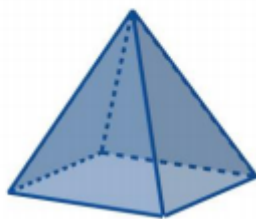What three-dimensional shape can be made from these nets?
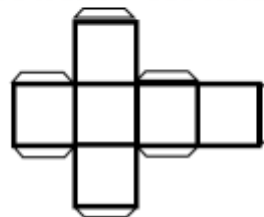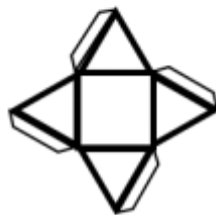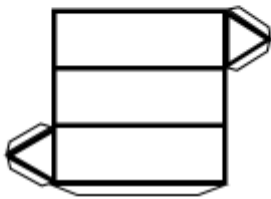
Identify and describe the faces of each shape.

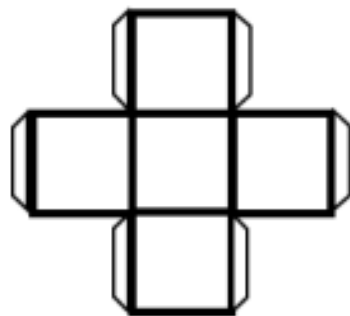Accurately draw this net. Cut, fold and stick to create a cuboid.

10 cm

5 cm

5 cm

5 cm

5 cm
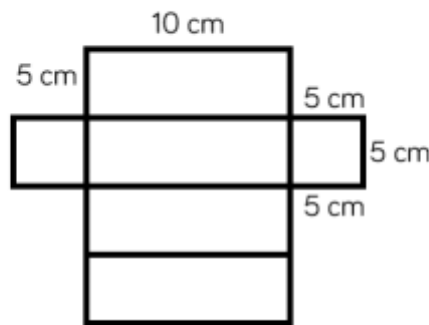
Draw possible nets of these three-dimensional shapes.

CEREALS

BEANS

Dora thinks that this net will fold to create a cube.

Do you agree with Dora?
Explain your answer.

Use Polydron to investigate how many different nets can be made for a cube.

Is there a rule you need to follow?

Can you spot an arrangement that won't work before you build it?

How do you know why it will or won't work?

Can you record your investigation systematically?

Here is an open box.

Which of the nets will fold together to make the box?
The grey squares show the base.

A   B   C