Shape Prior Assessment Question 4

Objective: I can construct a 3D shape, including making one from a net.

NC SH2: recognise, describe and build simple 3-D shapes, including making nets.

Teacher Input Ideas:

Give the children examples of real life 3D shapes. Ask the children to explore how they think they have been made and constructed. Allow the children to take the shapes apart so that they can look at the net. Give the children time to explore the 2D shapes that have been used. Encourage the children to measure the angles and sides. Where are the 2D shapes joined? Why is this important? The children could also discuss and apply knowledge of volume and area here. The children could use the measurements for cuboids and cubes and work out the volume of the shape.

Allow the children time to explore making their own 3D shapes. The children could be provided with nets to explore or straws and Blu-tac. Or as a group/class together create own nets, modelling the thought process and accuracy of measurements to help.

Practice Activities

Purple Practice: most suited for children who need to secure understanding of the properties of 3D shapes from Q3 and would benefit from constructing own 3D shapes from modelling materials.

Practical: The children may want to use the images from the purple task in Q3 to help them pick a 3D shape that they would like to construct. The children to have straws and blue tac/Plasticine to create 3D models. The children will need to think about using the straws as the edges. How many edges will you need? What will the length of the edges need to be? Children also need to think about the vertices. These could be created with the Blu-tac to join the 2 edges. How many vertices will you need? How many faces have you created? Children could stick plastic, paper or fabric on to the faces and measure the area of the face by using the measurements from the edges to create accurate sized pieces of material. Children could also apply finding the volume of cuboids and cubes using the measurements for each face.

Green Practice: most suited for children who made some errors in Question 4 of the prior learning assessment.

Practical: The green task sheets each have a large image of a net. The children are to decide if the net will make a 3D shape and predict what the shape will be. The children to then explore making the 3D shapes from the nets. Encourage the children to

understand the importance of the position of the 2D shapes and where they are joined. Why was this net successful? Why was it not successful? How can you alter it to make it successful?

<u>Yellow Practice</u> most suited for children who demonstrated accuracy in Question 4 of the prior learning and are ready to create their own nets.

Practical: The children have been set a challenge to make prototypes for a prism shaped pencil case. The children are required to make 3D models of prisms making their own nets.

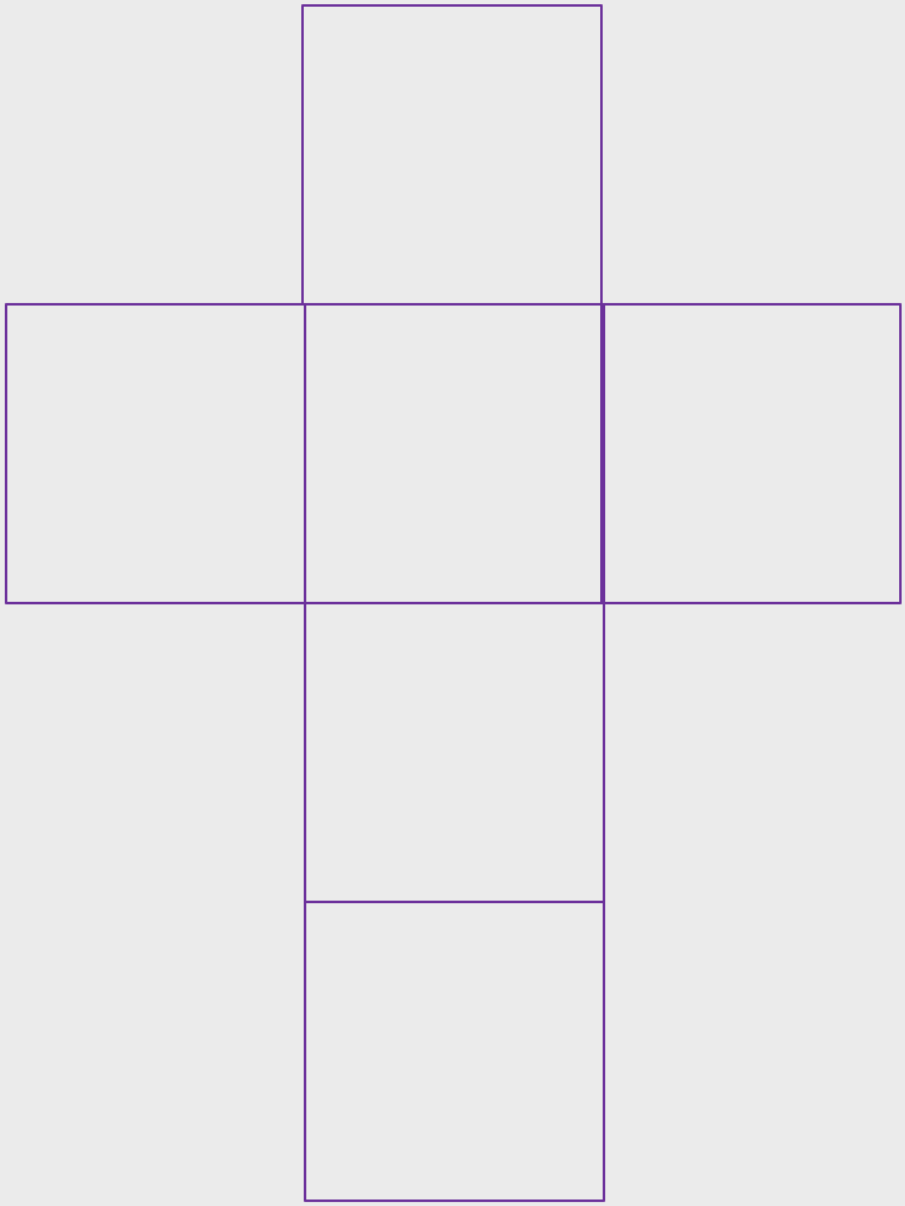
Encourage the children to identify what a prism is. List a variety of prisms together, such as a cylinder, cuboid, cube, triangular faced prism, hexagonal prism, etc. Children to then think about the properties of these shapes and apply their knowledge of angles and measure to create accurate sized 2D shapes for the faces of the prisms (fluency opportunity from Q1/2 shape). The children should then think about where the 2D shapes should be positioned to create a successful net.

<u>Mastery</u>: The children are presented with images of nets. The children should explore and decide which images are successful in making a cylinder. Some children may need to cut these out or you may want to produce larger copies of these nets for the children to explore. Encourage the children to explore the ones created with other quadrilaterals, not just rectangles, and encourage the children to prove if these make successful nets or not. Some children may be able to visualise this, some may need to practically explore. Encourage children to use examples and vocabulary to reason their decisions.

BRICKWORK
Mathematics

Green Practise

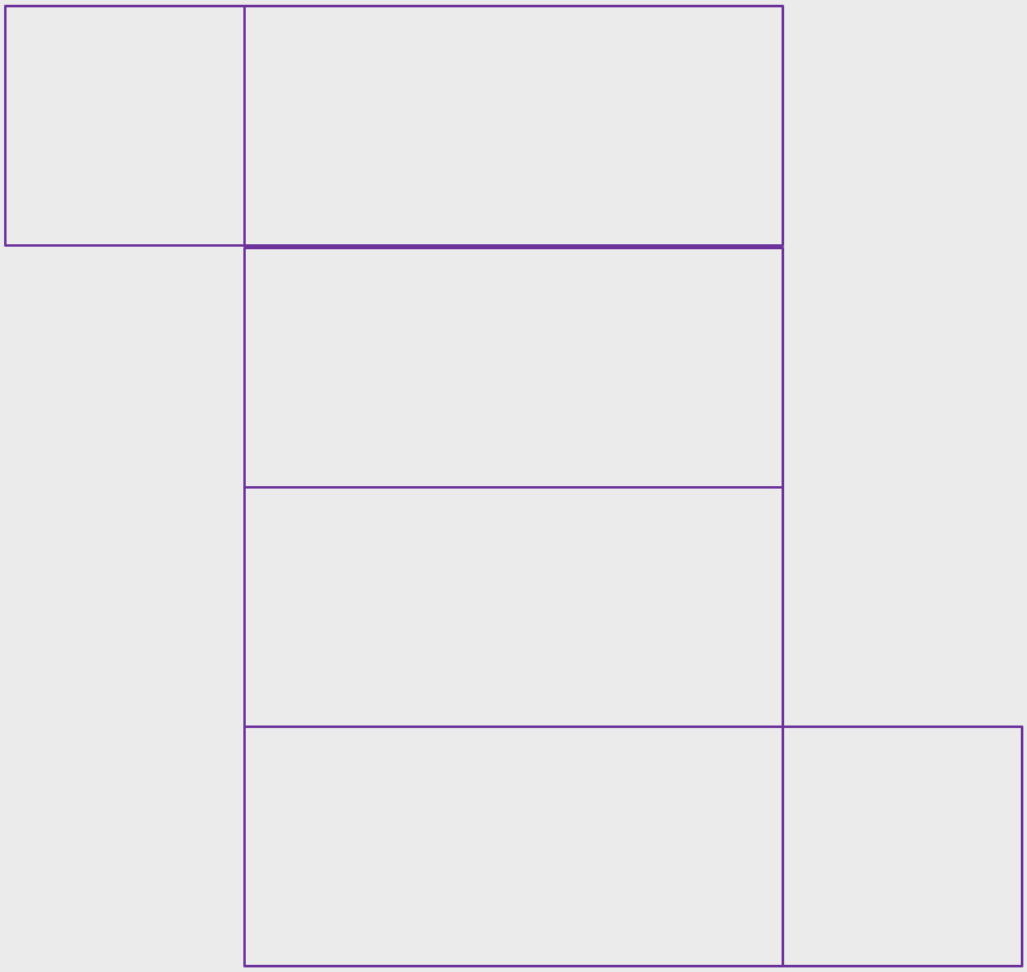
LO: I can construct 3D shapes from nets.



BRICKWORK
Mathematics

Green Practise

LO: I can construct 3D shapes from nets.



BRICKWORK
Mathematics

Green Practise

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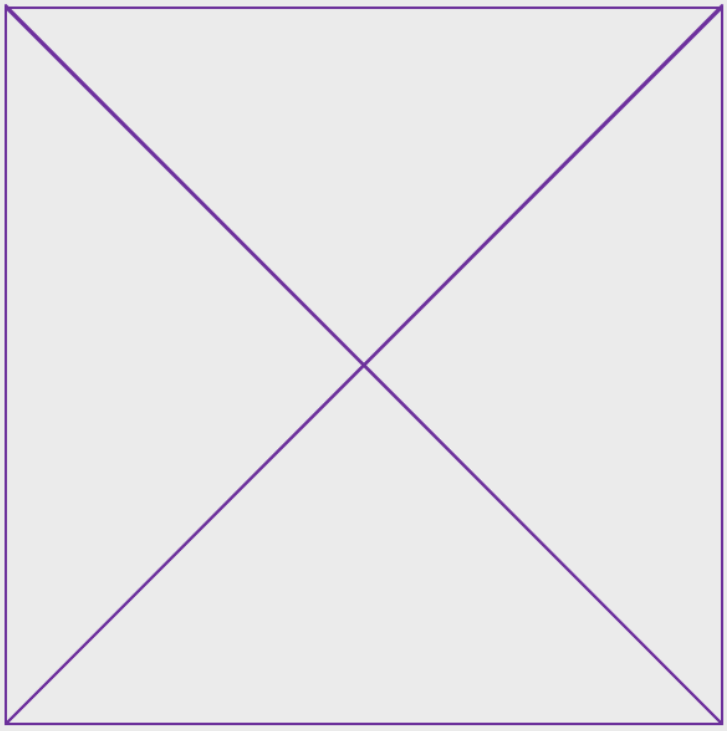

BRICKWORK
Mathematics

Green Practise

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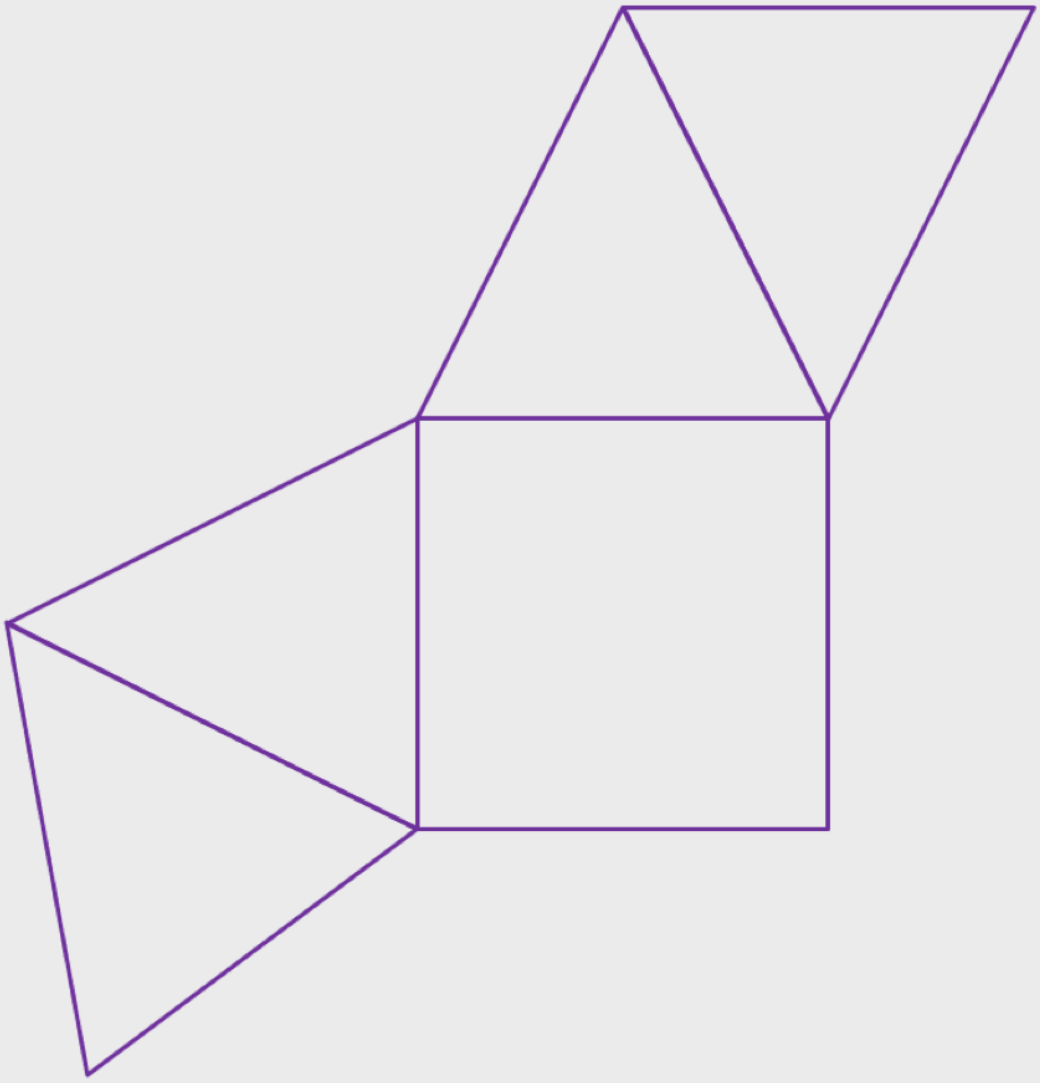
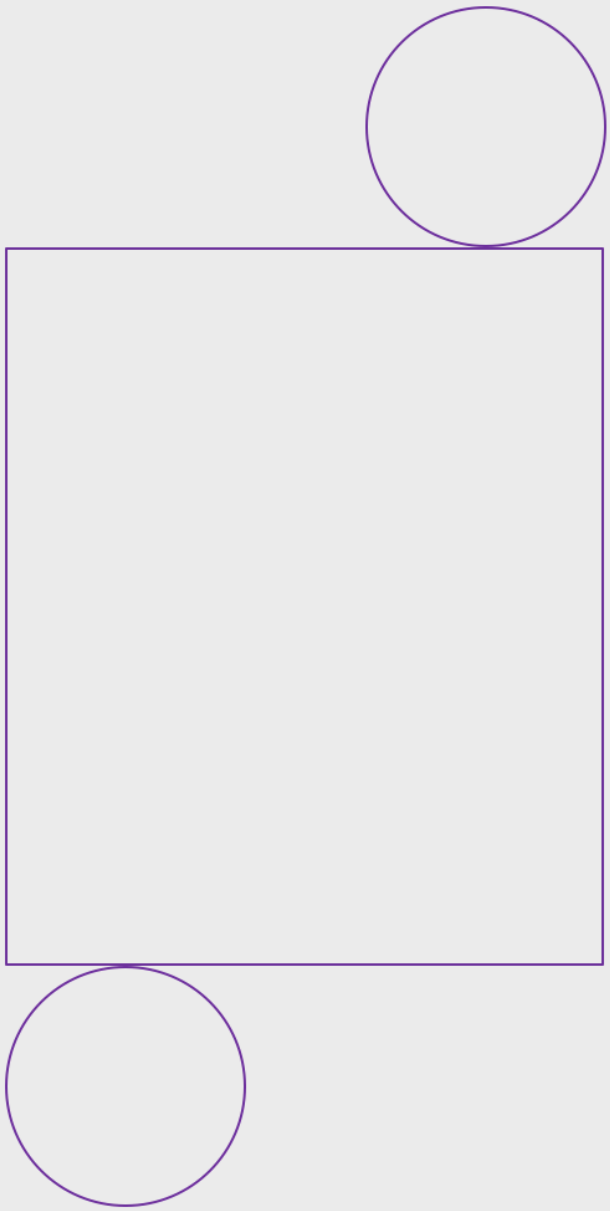


BRICKWORK Mathematics

Green Practise

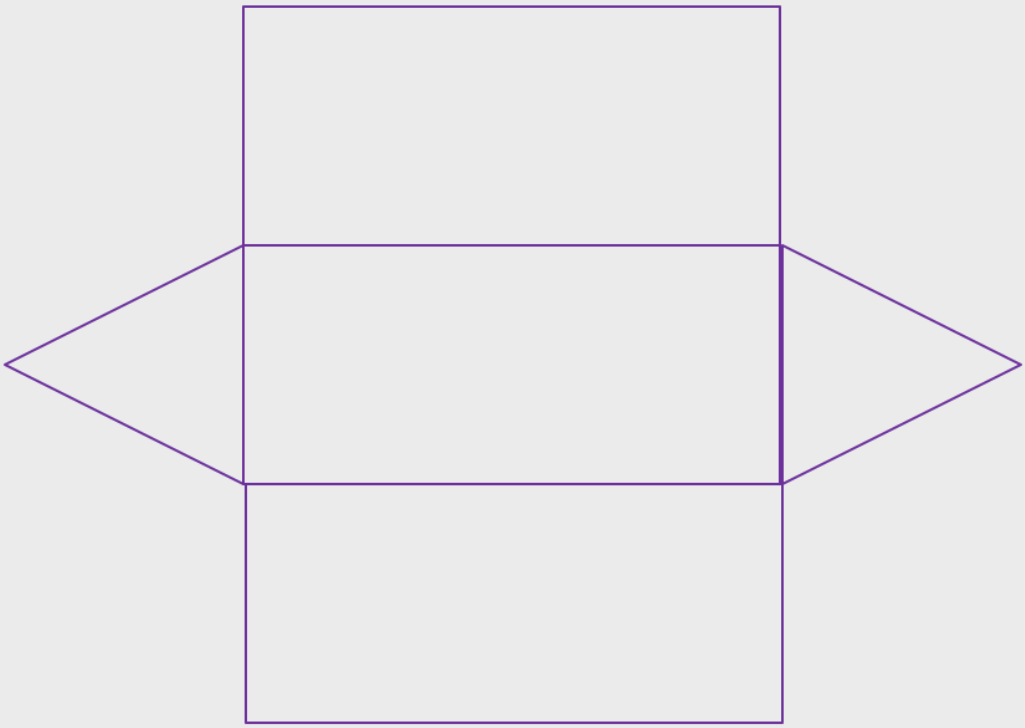
LO: I can construct 3D shapes from nets.



BRICKWORK
Mathematics

Green Practise

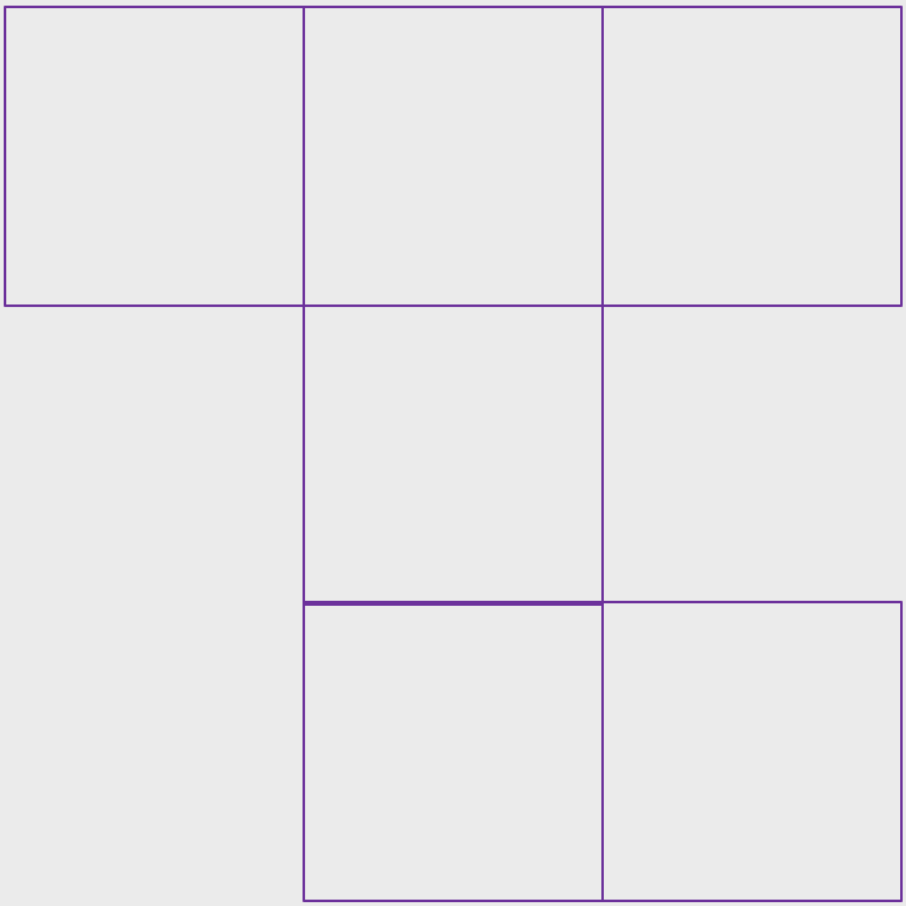
LO: I can construct 3D shapes from nets.



BRICKWORK
Mathematics

Green Practise

LO: I can construct 3D shapes from nets.

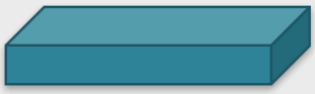


BRICKWORK Mathematics

Yellow Practice

LO: I can construct my own nets.

Jayden wants to make a pencil case. He would like it to be a prism.



What different prisms can you think of?

Jayden would like you to make 2 to 3 prototypes of prism shaped pencil cases. Construct your own net for each idea.

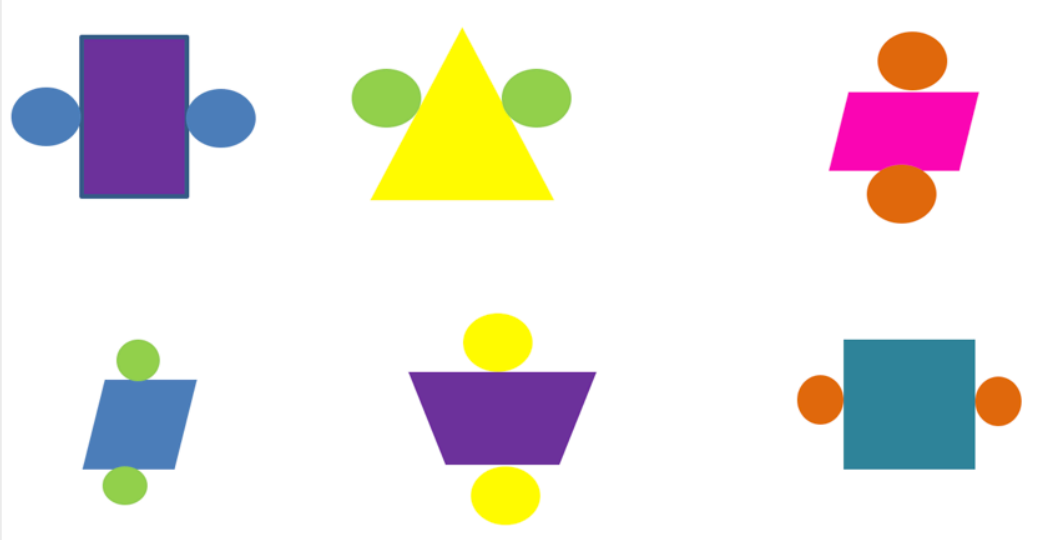
Use this space to jot down any measurements, ideas or plans and then create your nets on pieces of A4 or A3 paper.

BRICKWORK Mathematics

Mastery

Problem Solving and Reasoning

Sam is designing a cylinder pencil case. She has different shaped fabric already cut that she is going to use. Which of these nets will make a cylinder?



Sam thinks that she only has one option. Do you agree or disagree?

How can you prove that you are right? What mathematical vocabulary can you use to help or do you need practical objects to help you to explain?