

Year 2 Maths No Problem Teaching Guidance to go with online Maths No Problem lessons

Chapter 12, Three Dimensional Shape

Lesson 1

To begin this lesson, provide your child with an opportunity to hold everyday items that resemble 3-D shapes as shown in the In Focus task and Let's Learn section. Ask them to describe to their partners what the shapes feel like. Prompt them with vocabulary, such as 'curved', 'flat', 'faces' and so on.

Go through the names of the 3-D shapes with your child and help them to identify the 2-D shape on each of the 3-D shapes. Ask them to trace the 2-D shape on the 3-D shapes. For each 3-D shape, ask pupils if there are any other objects they know with the same shape and to describe how they are similar.

During Guided Practice, pupils are looking at images of items and classifying them based on their properties. They are also matching everyday items with their 3-D shape.

Lesson 2

To begin this lesson, provide your child with 3-D shapes (here is a website to help you show your child the shapes if you don't have any available http://resources.hwb.wales.gov.uk/VTC/sorting_3d_shapes/eng/Introduction/SortShapesPop.htm) and ask them to describe the features of the shapes. Prompt them with words such as 'face', 'edge' and 'vertices'. Ask them how an edge is different from a side. Tell them your friend says a cuboid has 6 faces and 6 edges. Is this possible? How can we check? My other friend says the number of vertices will always equal the number of edges. Is this true? Can you show me? Prompt your child with this line of questioning while they are working with the shapes. They will also need to be able to identify what 2-D shapes are on the surfaces of the 3-D shapes.

When your child begin to describe a pyramid, it is important they have a deep understanding of the multiple forms a pyramid can take (a 3-D shape consisting of a base made up of ANY polygon, and 3 or more lateral triangular faces that meet at a single point – apex). Provide them with different forms of the pyramid (pictures or actual objects) and ask them to discuss the similarities and differences, ultimately concluding they are all pyramids.

In future lessons, pupils will see and explore square-based, triangular-based and pentagon-based pyramids. Ask them what the similarities and differences are between a pyramid and a cone (e.g. a cone only has one flat face) and between a pyramid and prism (e.g. both have a triangle on their surface).

During Guided Practice, pupils are matching everyday items to their 3-D shape names and then creating a table to organise the information.

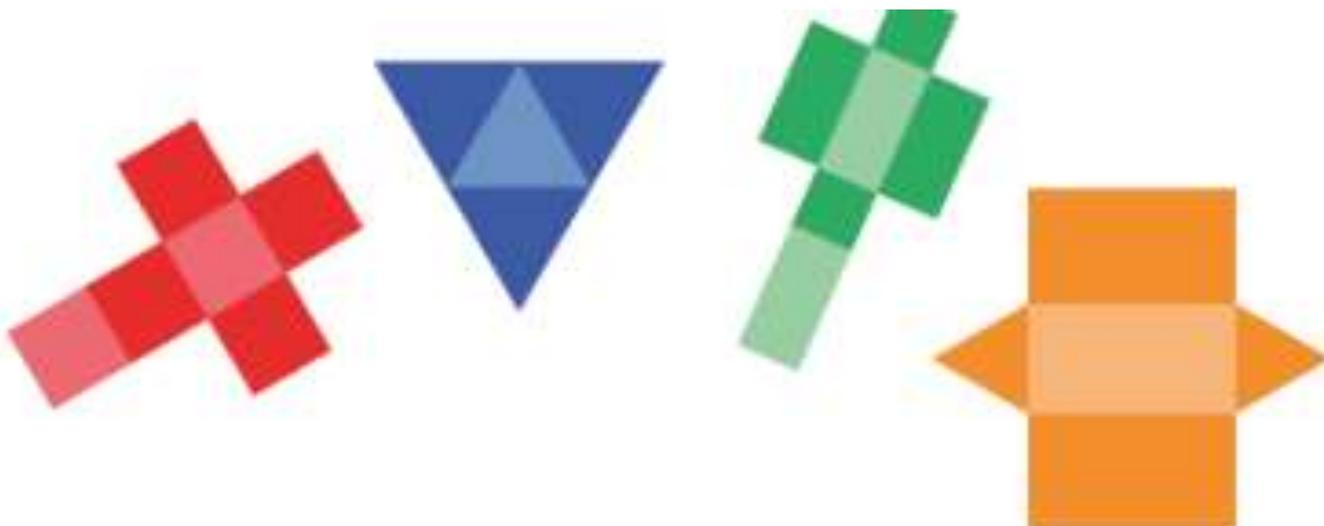
Lesson 3

To begin this lesson, provide your child with the cutouts of the flat shapes as shown in the In Focus task. Ask them to predict the 3-D shape that each of the cutouts will form. Tell them your friend says she finds it helpful looking at the number of faces and the shapes of those faces. Is this helpful for you? How can it help? Discuss with your child about how to use this information to predict what shapes they will make. Discuss this for a few minutes, then ask them to try to fold each of the cutouts into a box. Allow them some time to fold and then ask them if they know the names of the 3-D shapes they have folded and if their predictions were correct.

As you work through Let's Learn, get your child to unfold the 3-D shapes and draw along the folded lines. Ask them to identify the 2-D shapes formed by the drawn lines. Tell them that each of the 2-D shapes is a face of the 3-D shape. Ask your child to count the number of faces on the cutout for the cube and name the 2-D shapes, then do the same for the rectangle, pyramid and prism.

During Guided Practice, pupils are naming the 2-D shapes of the flat faces of everyday items. As some of the faces are hidden, they will need to use their visualisation skills. During this part of the lesson, pupils will be exposed to a pyramid with a pentagonal base and a prism made up of hexagons. This is a good opportunity to review what makes

up a pyramid (from lesson 2) and use that understanding to help discuss what makes up a prism (a 3-D shape made up of ANY polygon where it has a congruent parallel base).



Lesson 4

To begin this lesson, provide your child with a picture (see below) of a range of 3-D shapes that vary in size and colour. Ask them to group the shapes in as many ways as possible. Give them some time to make the groups and share other groups' examples with the class. Use 'your friend' to prompt them with how to group the shapes in ways they may not have considered. Look at the Let's Learn section for possible groupings. Ask your child to identify objects around the classroom or school that match the 3-D shapes. Ask them to think of objects at home that match the 3-D shapes.

During Guided Practice, pupils are required to identify how the shapes have been grouped. Encourage them to think of more than one criterion for sorting, focusing on the properties of the 3-D shapes.

