

Maths Week 2

Message

Hi Year 2,

We hope you enjoyed learning about 2D shapes. You should now know the names of lots of 2D shapes and how many **sides** and **vertices** (corners) they have. If you still don't know about all the 2D shapes then keep looking at your poster to learn them!

Here is your second week of maths remote learning. There are 5 maths lessons – one for each day. The first lesson is about 2D shapes and the rest of the lessons this week are about 3D shapes. By the end of the week, we want you to know the names of different 3D shapes and what their properties are: how many **edges**, **faces** and **vertices (corners)** they have.

There are also some really helpful videos and games, and a maths investigation you could try.

Have fun!

Ms Creamer, Mr Heidensohn, Miss Ibbotson and Mr Ibbotson.

Maths lessons

Lesson 1

Christmas jumpers often have lots of different 2D shapes on them. Design your own Christmas jumper using lots of different 2D shapes. Either draw the jumper or use the jumper template we've provided, then draw, cut and stick lots of 2D shapes on to your jumper. The more colourful your jumper is, the better! When you've finished, make a tally chart of all the different shapes you've used.



Lesson 2

Last week, you made a 2D shape poster. This week you are going to make a 3D shape poster! We want your poster to include these 3D shapes: **sphere**, **cone**, **cube**, **cuboid**, **cylinder**, **triangular prism** (a triangular prism will have 2 triangles - one at each end) and a **triangle-based pyramid** (a pyramid which has a triangle at the base). You could cut these out from the shape poster we have provided and stick them to a piece of paper or, if you don't have a printer, then try and draw them. It is much harder to draw 3D shapes than 2D shapes, so you might need a grown-up to help you! Write the name of each 3D shape - making sure you spell them correctly. Leave some space under each shape so we can add in some writing in lesson 3.

You could also think about what a **hexagonal prism** and **square-based pyramid** would look like. Try and describe what these shapes will look like to a grown up.

Lesson 3

When we learn about 3D shapes in school, we have lots of plastic shapes to help us. However, as you are at home, you are going to have to find your own 3D shapes! Look around your home and try to find all the different shapes you have on your poster. Some will be easier: sphere = a ball, cuboid = toothpaste box, cylinder = glue stick. It might be more tricky finding some of the other shapes but do your best and don't worry if you can't find all of them! Or you could try making your own 3D shapes. You could do this using straws and blue tac or plasticine. When you have all your shapes, write labels saying what each shape is.

Lesson 4

3D shapes have the following properties: **Edges, faces and vertices (corners)**. Watch this video to learn about these properties:

<https://m.youtube.com/watch?v=3-QwWFkz5hw>

Get out the poster you made in lesson 1. Under each 3D shape write down how many edges, faces and vertices (corners) each shape has. This can be quite tricky to work out, so use the shapes you found around your home or made in lesson 1. Be careful when counting all the edges, faces and vertices and check you've done it correctly!

Lesson 5

The **net** of a 3D shape is what it looks like if it is opened out flat. A **net** can be folded up to make a 3D shape.

Click on this link:

<https://www.bbc.co.uk/bitesize/topics/zt7xk2p/articles/z247tv4>

Watch the video and play the net games.

Print some of the 3D shape nets we have included with this remote learning and make the 3D shapes.

If you don't have a printer then you could try making your own nets or look at the nets of different shapes on this website instead:

<https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Geometric-Solids/>

Website Links

Learn about 3D shapes – shape names and their properties:

<https://m.youtube.com/watch?v=3-QwWFkz5hw>

Listen to and learn a 3D shape song:

<https://m.youtube.com/watch?v=2cg-Uc556-Q>

BBC Bitesize shape videos and games:

<https://www.bbc.co.uk/bitesize/topics/zjv39j6>

Reveal the 3D shape game:

<https://www.ictgames.com/mobilePage/shiftingShapes/index.html>

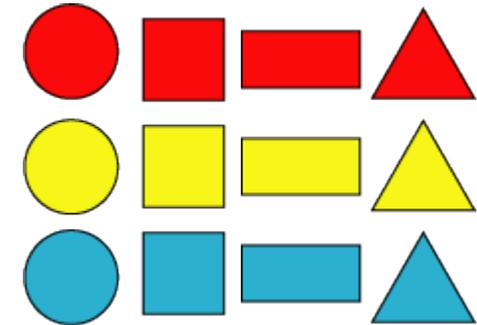
Help the monster trucks learn their 3D shapes!:

<https://m.youtube.com/watch?v=awdthrGmZ4U>

Games and Investigations

Chain of Changes

Here is a set of shapes. For this problem we will call them *pieces*.



Each of these pieces is either a different colour or a different shape from all the others.

These problems ask you to arrange the pieces in a line so that you change either colour or shape in the next piece along. If we start with a blue triangle, the next shape has to be either another triangle or another blue shape.

The first puzzle is to arrange all the shapes in such a line starting with the blue triangle and ending with the red circle. There are lots of different ways of doing it!



The second problem is to arrange the pieces in the same way, starting with the blue triangle and ending with the red circle, but to change first colour, then shape or vice-versa.

If you put a yellow triangle after the blue one and so change the colour, next you must put another yellow piece and so change the shape.

You will not be able to use all the pieces in this way but the problem is to see how many you can use.

Why do you think you cannot use all the pieces?

You can do this activity online:

<https://nrich.maths.org/content/02/05/letme1/LogiB.swf>