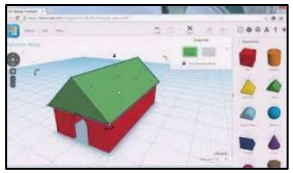
River Bank Primary Knowledge Organiser	Year 6	Spring Term 1 & 2	We are 3d modellers

What we will learn

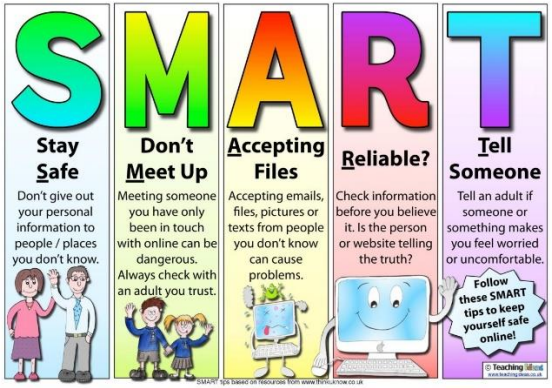


3D Modelling

3D means **three-dimensional**, or having 3 dimensions. For example, a box is a 3D shape, whereas a square is a 2D shape.

3D modelling involves using **computer software** to create 3D shapes, in order to produce models of real-world objects.
3D modelling allows us to **view** designs from different angles and experiment with various designs.
3D modelling is used in many industries, e.g. in interior design, architecture and making video games.

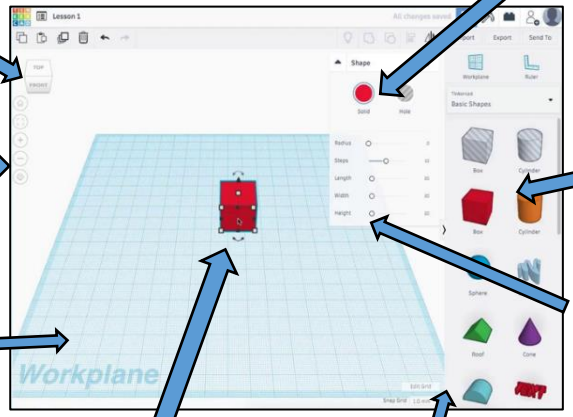
Staying Safe online



The basics of 3D modelling

The ViewCube Allows us to switch the view of the model e.g. from the front angle, top angle, or spin around to show the sides.

Change the colour/ shading of your model, and make them solid or 'hole.'



Zoom in and zoom out. (+ -)

3D objects that can be dragged into the workspace and remodeled.

The workspace, where you can work on your model. The square panes help us to distances and dimensions accurately.

Alter the dimensions of your model, for example the length, height, width and shape.

Objects can be resized by dragging the handles (white squares).

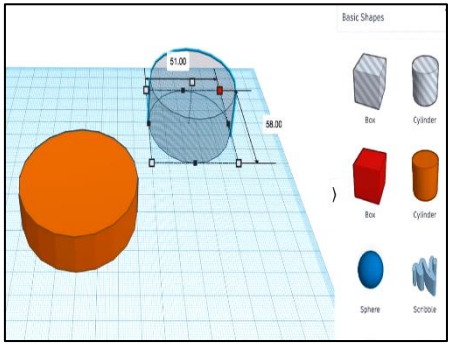
When you move multiple objects into the same space, they merge.

ATVs

An **all-terrain vehicle** means one that has one seat with three or more wheels with large tyres, handlebars for control and can travel over rough surfaces like mountains sides, gravel, sand, snow.

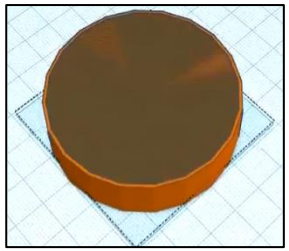
Making holes

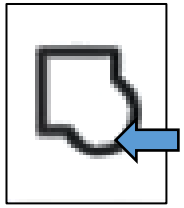
Holes: Sometimes we need to create objects that are not solid – they have space inside/ within them.



To achieve this, begin by adding a 3D shape onto the workspace. Then drag one of the '**holes**' shapes onto the workspace. Adjust dimensions accordingly.

Drag the '**holes**' shape over the 3D shape as desired.



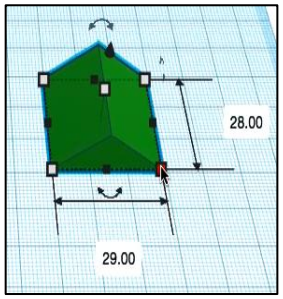


Click and drag a box around the shapes to select them.

Click the '**group**' button to combine the shapes and create the hole.

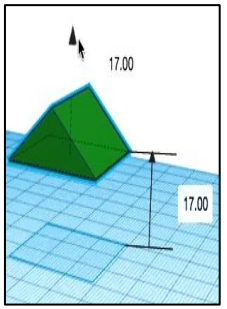
More advanced techniques

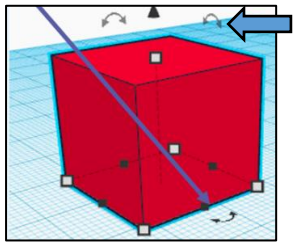
Duplicating: Click and drag around an object to ensure that it is selected. Then, click on the duplicate icon (see left) to create a copy.



Resizing: Objects can be manually resized by clicking and dragging on the handles around them. The dimensions are labelled.

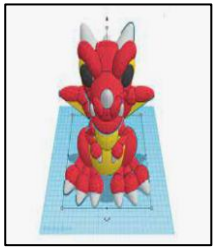
Lifting: Use the ViewCube to change the viewing angle of the model to the front/ side. Then, use the cone handle in order to lift the object from the workspace.





Rotating: Selecting these handles allows us to rotate shapes. Drag the object to rotate it in different ways.

Combining Shapes
Many complex shapes are made up of a number of 3D shapes – we can position and merge them together.



Text: You can add block text by selecting 'text' in the shapes. This can help you to enhance other shapes.