6.5 Creating media – 3D Modelling – Knowledge Organiser

Key prior learning is highlighted in green, but must be revisited and reinforced during this teaching sequence.

Overview

3D Modelling

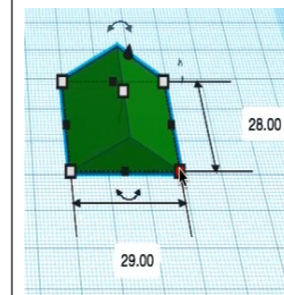Duplicating: Click and drag around an object to ensure that it is selected. Then, click on the duplicate icon (top left) to create.

3D means three-dimensional, or having 3 dimensions. For example, a box is a 3D shape, whereas a square is a 2D shape.
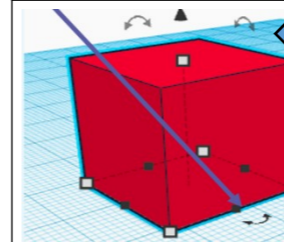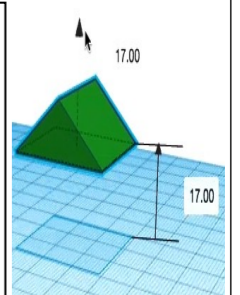
-3D modelling involves using computer software to create 3D shapes, in order to produce models of real-world objects.

-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.

The Basics of 3D Modelling

Sketchup 3D is software that we can use to create 3D Models.
Other examples include CAD for Kids and Tinkercad.

-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.

-Zoom in and zoom out.

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

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

Large Tool Set

Select (Spacebar)   Make Component
Paint Bucket (B)   Eraser (E)
Line (L)   Freehand
Rectangle (R)   Rotated Rectangle
Circle (C)   Polygon
Arc   2 Point Arc (A)
3 Point Arc   Pie
Move (M)   Push/Pull (P)

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

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

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

-Alter the dimensions of your model, for example the length, height, width and shape.
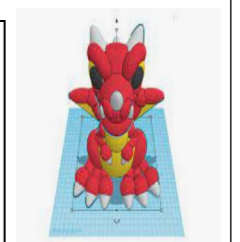
More Advanced Techniques

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

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

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.

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.
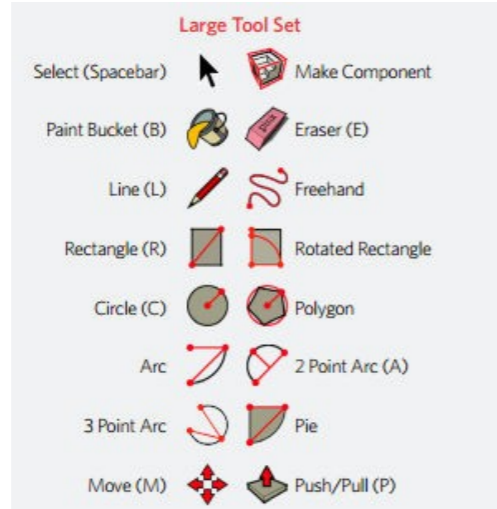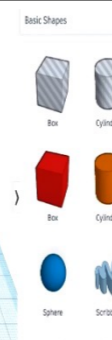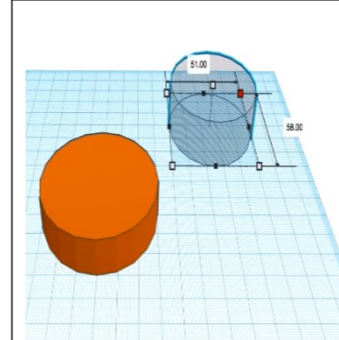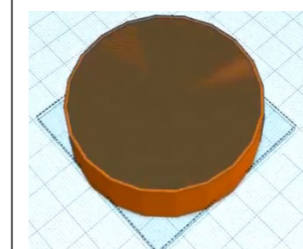
Making Holes

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.

Important Vocabulary

Modelling   Three-Dimensional   Workspace   Faces   Vertices   Edges   Handles   Resize   Position   Hole   Design   Modify