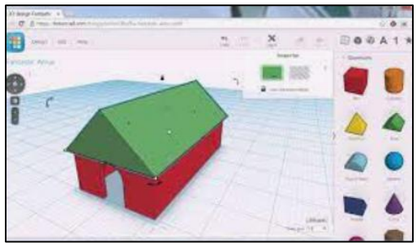
COMPUTING: CREATING MEDIA- 3D Modelling

Y6

KNOWLEDGE ORGANISER

Overview





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.

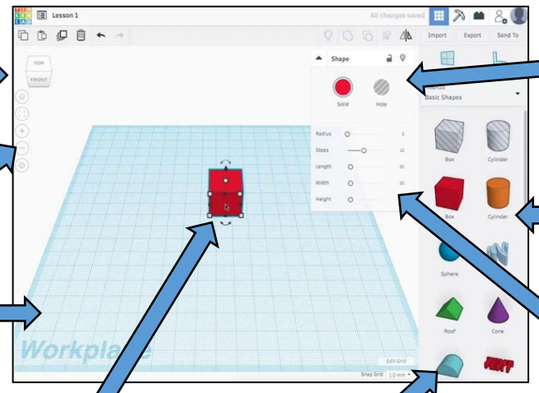
The Basics of 3D Modelling

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

-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).

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

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

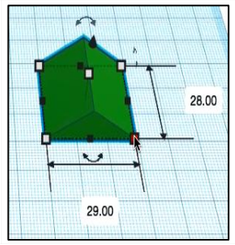
-3D objects that can be dragged into the workspace and remodelled.

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

More Advanced Techniques

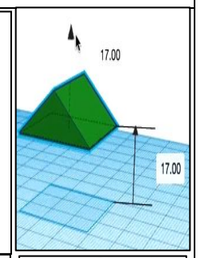


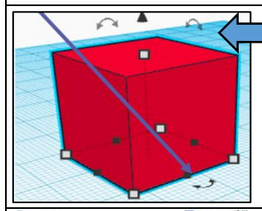
Duplicating: Click and drag around an object to ensure that it is selected. Then, click on the duplicate icon (see left) to create a copy.



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

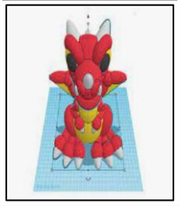
Lifting: Use the ViewCube to change the viewing angle of the model to the front/ side. Then, use the cone handle in order to lift the object from the workspace.





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

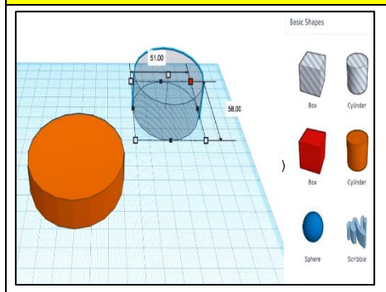
Combining Shapes Many complex shapes are made up of a number of 3D shapes – we can position and merge them together.

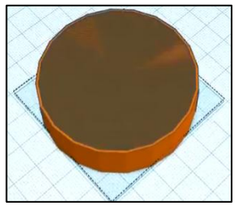


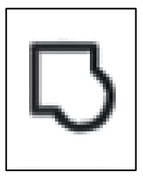


Text: You can add block text by selecting 'text' in the shapes. This can help you to enhance other shapes.

Making Holes







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

Learning Objectives	
Lesson 1	I can recognise that you can work in three dimensions on a computer.
Lesson 2	I can identify that digital 3D objects can be modified.
Lesson 3	I can recognise that objects can be combined in a 3D model.
Lesson 4	I can use Tinkercad to generate a design for my birdhouse.
Lesson 5	Using Tinkercad I can combine two different 3D shapes together, change the size and shape of objects by adding 'handle dots', measure shapes accurately, make holes in shapes and duplicate shapes.

Important Vocabulary

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