Computing – Year 5 – 3D Modelling

Topic Overview

In this unit, we will use Sketchup to build 3D models. We will build a house as we explore and gain confidence with the software tools, then we will build a realistic robot model with refined and realistic details.

Key Knowledge

3D modelling is the process of creating objects on a computer that look solid and realistic, as if they exist in real space. Models have height, width and depth.
SketchUp is a computer program used to design and build 3D models. Architects, designers, engineers and artists use it to create buildings, furniture, landscapes and many other structures.
3D modelling helps people visualise ideas more clearly than a flat drawing. It encourages problem-solving, precision and creativity. It is also easier to change a design rather than making the actual real-world model and then having to remake it again and again.

<u>Top tips:</u>

- Save your work regularly so that you don't lose progress. Hold control (ctrl) and press 'S'.
- Use the tools carefully to avoid accidentally deleting or moving parts of your model.
- Keep your design simple at first and gradually add details.
- Check your model from different angles to make sure it looks correct.
- Hold control (ctrl) and press 'Z' to undo the last thing that you did – useful for getting rid of any mistakes.
- Be creative and imaginative.

Important Vocabulary

Modelling	Making a shape or object using a computer.
(CAD) Computer Aided Design	Using a computer to help design something.
Perspective	Showing how something looks from a certain point of view.
2D	Flat shapes that only have height and width.
3D	Shapes that have height, width, and depth.
Face	One flat or curved side of a 3D shape.
Edge	The lines where two faces of a shape meet.
Vertices	The corners where edges meet.
Perspective	How objects appear depending on where you are looking from.
Hollow	Empty inside, not solid.
 Pan	This tool lets you move your view left, right, up or down.
 Orbit	This tool lets you rotate the view to see an object from different sides.
 Zoom	This tool lets you get closer or further away from your model.
 Push/pull	This tool turns flat shapes into 3D objects by pulling or pushing faces.
 Scale	Making something bigger or smaller.
Handles	Small points you can grab to change the size of a shape.
 Follow me	Allows you to trim edges.
Duplicate	Making a copy of something.
Group	Putting things together so that they move as one.

Assessment

I can create a simple 3D model to represent a real-life object.	I can use more complex tools such as duplicate and follow me.	I can design a 3D robot considering the implications of working on 3D software.	I can give two positives and one area to improve about my robot.