** PURPLE MASH COMPUTING SCHEME OF WORK - KNOWLEDGE ORGANISER**

**Unit: 5.6 – 3D modelling**

**Key Vocabulary**

**Key Learning**

To be introduced to 2Design and Make and the skills of computer aided design.

To explore the effect of moving points when designing.

To understand designing for a purpose.

To understand printing and making.

**CAD – Computer aided Design –** A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles.

**Modelling** - The activity of making models.

**3D** – Something that has three dimensions; height, width and depth.

**Viewpoint** - A person's opinion or point of view.

**Polygon** - An object with at least three straight sides and angles, and typically five or more.

**2D** – Something that has only two dimensions; height and width.

**Net** - A pattern that you can cut and fold to make a model of a solid shape.

**3D Printing** - The action or process of making a physical object from a three-dimensional digital model, typically by laying down many thin layers of a material in succession.

**Points** - An exact position or location on a 2Dsurface.

**Template** - Something that serves as a model for others to copy.

**Key Resources**



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**Key Questions**

**Key Images**

|  |  |
| --- | --- |
| 2D Image |  |
| 3D Image |  |
| Net View |  |
| Colour palette |  |
| Clear, Undo and Redo |  |
| Fill options |  |
| Magnify |  |

Net, Points and 3D.

What are the different view of an object available in 2Design and Make?

It is used to design 3D objects in a 2D environment.

Some examples are; Architectural plans for buildings; designing layouts for interiors; designing objects such as packaging and designing mechanical components; designing shoes and clothing.

You can print the net and then cut and fold this into shape or you can convert the file into a format recognised by 3D printers.

How is CAD software used in industry? Give some examples.

safe?

How can the objects designed in 2Design and Make be turned into 3D objects?