










Key Vocabulary...		Picture This...		Tools & Equipment			
<b>Aesthetics</b>	How something looks including shape and colour.	<b>LED</b>		A light emitting diode provides a source of light. It is energy efficient, small, available in different colours and brightness and has a long lifespan.	<b>Vacuum Former</b>		
<b>Accuracy</b>	The quality or state of being correct or precise. Free from errors.	<b>SWITCH</b>		A component that joins and breaks part of a circuit to connect or isolate the supply of electricity.	<b>Pillar Drill</b>		
<b>Thermoplastic</b>	A type of plastic that can be re heated and shaped to make new products.	<b>RESISTOR</b>		A fixed value component that reduces the amount of electricity able to pass through part of the circuit. Made from a mixture of carbon (to conduct) and ceramic (to isolate).	<b>Strip Heater</b>		
<b>Thermosetting</b>	A thermosetting plastic is a plastic which becomes irreversibly hardened when heated and moulded into shape. Can not be recycled.	<b>PCB</b>		A printed circuit board mechanically supports and connects electrical components using conductive tracks.	<b>Soldering Iron</b>		
<b>JIG</b>	A jig is used to make sure that parts are made exactly the same, without the need for marking out. For example, when drilling through a block of wood with two holes in, it will make sure that the holes are drilled in the same place in each component.	<b>USB LEAD</b>		A USB lead (Universal Serial Bus) are used mostly to connect computers to peripheral devices such as cameras and printers, in our case, your lamp.	<b>The BIG question..</b>		
<b>Target Market</b>	To whom the product is aimed at or designed for.					How might thermosetting plastics, be bad for the environment?	

### CAD/CAM

**Computer Aided Design** – In school we use 2D Design, in the industry they use AutoCAD, we also use sketch Up for virtual model making.

**Computer Aided Manufacture** – In school we manufacture products using a laser cutter and 3D printer. They also use laser cutters and 3D printers in industry but on a larger scale. They also use CNC milling machines and other computer controlled devices to manufacture different products.



### Always Remember...

**Isometric** Drawings are 3D drawing. They show three sides, all in dimensional proportion, but none are shown as a true shape with 90 degree corners. All the vertical lines are drawn vertically but all the horizontal lines are drawn at **30 degrees** to the base line. Isometric is an easy method of drawing 3D images.



### Deeper Learning...

Plastics are made from oil which is a fossil fuel. We have to drill deep into the earth to extract the oil and this can cause disruption to wildlife, sea life and their habitats. The burning of crude oil to make plastic products, produces CO2 emissions, which pollutes the earth's atmosphere.

**Activity** – Take some isometric grid paper home with you and practice drawing objects, that you can find around the house. Remember to bring your designs in to show your class mates.