Key vocabulary	
RISK	Doing something which could be dangerous or harmful
HAZARD	Potential harm or damage that could be caused
PRECAUTION	A step taken in advance to stop something dangerous or harmful happening
PROPERTIES	How materials react to applied forces
ORIGIN	The basic original source of something
SYNTHETIC	Man made not natural
BRITTLE	Hard but liable to break easily
MALLEABLE	Ability of a material to be shaped without breaking
ACCURACY	The closeness of a measurement to its correct value.
HARDNESS	Ability of a material to resist wear or being scratched
VINYL	A thermoplastic, thin and easily cut, used for decora
THERMOSET PLASTIC	A polymer which can only be heated and shaped once
THERMOPLASTIC	A polymer which can be heated and shaped repeatedly

YEAR 7 TRINKET BOX

Core knowledge and skills design

Isometric drawing is way of presenting designs/drawings in three dimensions. In order for a design to appear three dimensional, a 30 degree angle is applied to its sides. The cube opposite, has been drawn in isometric projection.

plastic so that it does no

A 60 Watt bulb is bright

The switch is ergonomi-

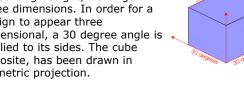
designed so that it is easy to use

Materials will cost £10/

The base will be aluminium,

The stem will be flexible plastic.

for the entire project.



The stem is flexible and allows

A short stem means it is

The base will be large

and quite heavy so the

and will not fall over easily, even if knocked

This lamp is aimed at the

student market as it is cheap

and can be used for studying

the person using it to direct

ANNOTATIONS-

explanatory notes, easy ttiono understand and well presented, easy to understand and well presented.



ALTERNATIVES TO MAN MADE PLASTICS

Plant-based plastic is a type of bioplastic that is created from agricultural scraps, often from corn, sugarcane, wheat or food waste. The term 'plant-based' refers to the source of the material itself, not how the resulting plastic will behave after it's been thrown away. Naturally occurring polymers include tar, shellac, tortoiseshell, animal horn, cellulose, amber, and latex from tree sap.



The Memphis Group was an Italian design and architecture group founded by Ettore Sottsass. It was active from 1980 to 1987. The group of artists and designers became known for their bright and bold furniture



MATERIALS

THERMOPLASTIC-ACRYLIC -Acrylic is hard wearing, brittle, has a glossy finish, comes in many different colours and softens between 85-1650 C.

THERMOPLASTIC- PVC- PVC is stiff, hard wearing and softens between 100-1250 C



MDF—Medium Density Fibreboard is a composite material. made of two materials—wood fibres and glue. MDF is a manmade product. Panels are made by applying high temperature and pressure. There is no grain making it easy to work with.



Health & Safety Rules

- In an emergency hit the stop button immediately.
- Always make sure you know how to use tools and machinery safely and correctly.
- Always make sure you are wearing correct protective equipment at all times.
- Make sure that any long hair is tied back, jewellery is removed and sleeves are rolled up.
- One person on a machine at any time.
- Only use equipment for the purpose for which it was designed for.
- When a machine is in use do not cross the black and vellow tape.
- Always keep fingers and hands well away from moving parts of a machine.
- Never remove parts of a machine or guards.





TOOLS & EOUIPMENT Write in

the names once you know them

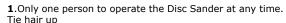












- 2. Keep fingers and hands away from the moving sanding disc. 3. Always wear personal safety equipment when using the disc sander—
- goggles and an apron.
- **4.** Always know where the emergency STOP button is in relation to the machine so that you know how to turn off the machine quickly and effectively.
- **5.**Turn on the dust extraction before using the machine.
- **6.**Ensure you use a pair of push sticks on the disc sander for intricate shapes and edges of your product.
- 7. Work must remain flat on the work table when using the disc sander because the disc rotates anti-clockwise.
- **8.**Turn the machine off once you have finished using it
- **9.**Take your time, the disc sander because it is a powerful machine.
- 1. Only one person to operate the Disc Sander at any time.
- 2. Tie hair up
- 3. Wear goggles to protect eyes, from any waste material, thrown out by the drilling process.
- **4.**Wear an apron which keeps him clean and holds back any loose clothing, such as a tie.
- **5.** The work / material is held down securely by a G-cramp.
- 6. When drilling the material, a small amount of pressure is applied to the handles / hand feed. This ensures that the drill bit, slowly cuts through the material.
- **7.** After drilling the material, the operator turns the machine off
- **8.** The floor around the machine is cleared of an obstructions and people. Anyone waiting to use the machine, should be stood at a distance.
- 1. Only one person to operate the Disc Sander at any time.
- 2.Concentrate at all times
- 3. Tie hair up
- **4.**The guard is in the correct position
- **5.**Wear goggles to protect eyes, in the event of debris / waste material flying out of the machine.
- **6.**wear an apron
- 7.Do not wear jewellery
- **8**.Keep the work pressed down firmly onto the bed.
- **9.** The floor around the machine is cleared of an obstructions and people. Anyone waiting to use the machine, should be stood at a distance. The white line around the machine, should not be crossed by anyone waiting.
- 10. Turn the machine off after use.

TECHNICAL KNOWLEDGE

The majority of polymers come from crude oil, which is found in the Earth's crust. The biggest deposits of crude oil are in the Middle East and in Central and South America. Crude oil is extracted from the ground by drilling and pumping in to the surface. It is then transported to an oil refinery and processed. The first stage of processing is called: Fractional distillation:

•Crude oil is boiled to produce gas

•The gas is vented off through a tall column where it condenses to form different petrochemical products such as gas, petrol and oil.

Thermosetting plastics can only be heated and shaped once. If he-heated they cannot soften as polymer chains are interinked. Separate polymers are joined in order to form a huge polymer.

Thermoplastics can be heated and shaped many times. Thermoplastics will soften when it is heated and can be shaped when not. The plastic will warden when cooled, but can be reshaped because there is no links between the polymer chains

