

Year 8 Design Technology– Knowledge Organiser

Practical: - Booklets in the middle of the table. Hair tied back. Wear an apron. Stools stacked in four.

Equipment: Pencil, ruler, Hand saw, Coping saw, bench hook, file, brush, Pillar drill.

How to use a Coping saw

Using a coping saw is a test of skill as it can be difficult to control and requires practice.



1. Draw on the material with a pen.
2. Secure the material in the vice.(Low as possible)
3. Keep the blade parallel to the table.
4. Rest the blade against your thumb nail. Drag back the blade towards you. (3 times)
5. Move your thumb and pinch the material (fingers above the blade) use the full blade.
6. Go slow. Watch carefully to make sure the cut is staying on the line.
7. If you need to take the blade back out, keep moving the blade back and forth and reverse back upwards.

How to use Tenon saw



1. The saw has to be held in the hand carefully.
2. The index finger must point in the direction of sawing and it also helps to support the whole saw as it moves forward.
3. The saw must not move from side to side or it will jam in the wood making sawing difficult.

ACCESSFM
A – Aesthetics
C- Cost
C – Customer
E- Environment
S – Size
S - Safety
F – Function
M - Materials

ACCESSFM

Aesthetics
 What does the product look like?
 Colour, Style, Texture

Cost
 How much is the product? Price, Materials, Manufacturing?

Customer
 Who would buy the product? Age, Gender, Hobbies

Environment
 Is the product sustainable? Six R's, Impact, Sustainability

Size
 How big is the product? Width, Length, Height

Safety
 Will the product cause harm? Hazards, Risks, Precautions

Function
 What is the product designed to do? Purpose, How it works, Could it work better

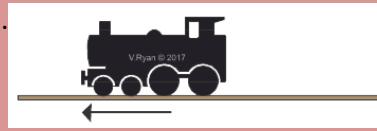
Materials
 What is the product made from? Materials, Properties, Suitability

Good Practice for cleaning up.

1. Work together as a team.
2. Throw big off cuts into the bin.
3. Brush dust slowly & carefully to the floor.
4. Put tools into the toolbox.
5. Any tools taken from the tool cupboard to be replaced.
6. Ask the teacher to check equipment before putting away.
7. Collect your stools.
8. Hang up the aprons.

Linear Motion

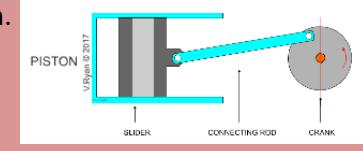
Movement in a straight line and in one direction.



Motions

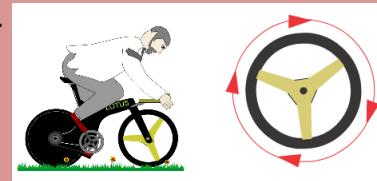
Reciprocating Motion

A motion that is repetitive left or right OR up and down.



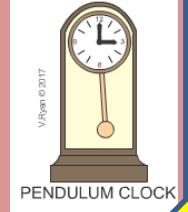
Rotary Motion

Movement following a circular path, around a fixed point.

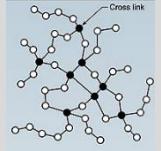


Oscillating Motion

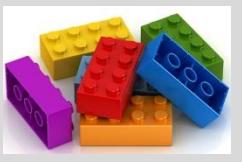
Occurs when an object swings left and then right, from a fixed point..



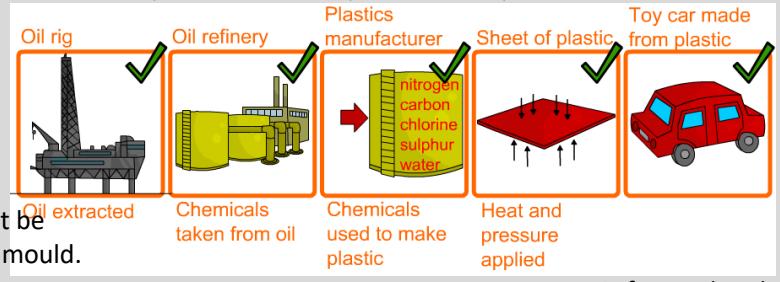
Polymers - a fancy name for plastics



THERMOSETTING PLASTICS



Can only be softened once. Once 'set' these plastics cannot be reheated to soften, shape and mould. Ideal when heat is an issue. Difficult to recycle as they go through a chemical change.

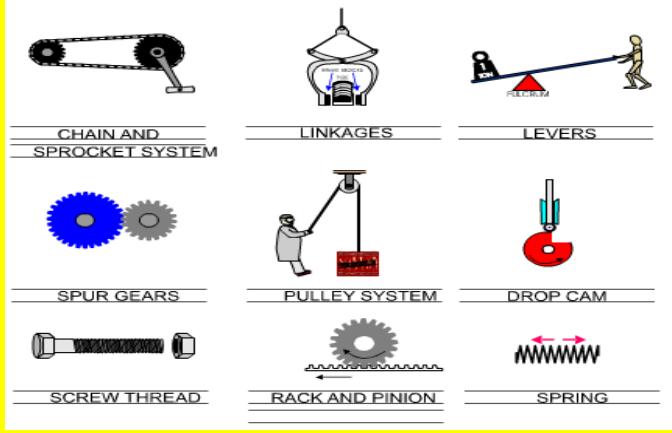


THERMOPLASTICS



Softens when heated. These plastics can be re-heated and shaped and reshaped. They become mouldable after reheating as they do not undergo significant chemical change. These types of plastics can be recycled.

Mechanisms



Categories of Woods

Coniferous Trees



From trees that have needles/exposed seeds, not leaves. They grow quickly, around 30 years to mature. When sawn and planed they tend to be light/pale in colour. Softwoods also tend to be cheaper than hardwoods.

Parana Pine, Spruce, Redwood, Larch, Red Cedar



Softwoods, Hardwoods and Manmade boards

Deciduous Trees



From trees that have leaves, that they lose seasonally. Tend to be harder than softwoods (exception of Balsa wood). Have a wider variety of colour and texture than softwoods. Take longer to mature and tend to be more expensive than softwoods.

Oak, Walnut, Ash, Mahogany



Both types of trees and recycled pulp and sawdust

Made in factories from materials such as wood chippings or sawdust. Sheets are available in standard sizes – 2440mm by 1220mm ranging from 1.5mm to 25mm thick.



Blockboard, Chipboard, MDF, plywood, Hardboard

Wider thinking / further reading: <https://www.stem.org.uk/home-learning/secondary-design-technology>