



Knowledge Organiser: Yr7

subject; Woods

Lifecycle

- Life cycle assessments (LCAs) are carried out to assess the environmental impact of products in each of these stages of a products life:
- 1. extracting and processing raw materials
- 2. manufacturing and packaging
- 3. use and operation during its lifetime
- 4. disposal at the end of its useful life, including transport and distribution at each stage.

Some things for example the energy required to make the product are easy to measure. However, some things like how much pollution it releases are hard to measure and therefore difficult to give a value to.

Recycling

Many of the Earth's resources are finite: for example, metals and crude oil. It is therefore vital we recycle resources. The processes for extracting these materials are often high energy and damaging to the environment. Metals can be recycled by melting and recasting or reforming into different products. Some products, such as glass bottles, can be reused. Glass bottles can be crushed and melted to make different glass products. Other products cannot be reused and so are recycled for a different use

Health and safety

It is important that everyone follows the rules set for safety in a workshop. Some basic rules are,

- Making sure you tie hair back, tucking in any loose clothing, and wearing an apron
- No eating or drinking in the room
- Not using equipment, you have not been shown how to use
- Always using the guard and extractors
- Making sure all tools and blades are left securely and carried with sharp or pointed edges facing downwards.
- Securing your work in place

Materials

Natural wood is categorised as either hardwood or softwood. Both types can be grown and harvested responsibly in managed forests this makes wood a sustainable and biodegradable resource. Wood generally has a good strength to weight ratio

- Softwood comes from coniferous trees
- Most coniferous trees have needles, are evergreen, and they keep their needles all year round
- Softwood trees grow faster than hardwood trees making it relatively cheap and readily available
- Hardwood is sourced from deciduous trees
- Deciduous trees drop their leaves in the autumn and new leaves grow in spring
- Hardwood is slower growing and is therefore more expensive
- Sought after for its variety of colours and grains, it has good aesthetical and physical properties
- It has a closer grain, making it denser and more hardwearing.

Plastics fall into two categories. Thermosetting plastic or (thermoset) means that once the polymer has been set in that shape using heat it cannot be changed. Thermoforming plastic or (thermoplastic) means that it can be heated and shaped, then reheated and shaped again.

Cutting: Several types of cutting tools are available for different ways of cutting wood. A hand saw can have a wide blade for cutting straight lines or a thin blade to allow cutting around a bend.

Machine tools for cutting wood include circular saws for straight cuts in sheet wood, band saws can be used for straight or curved cuts, jigsaws are electric hand tools with interchangeable blades for different surfaces. They are quicker and more accurate than by hand but require stringent health and safety rules and dust extraction.