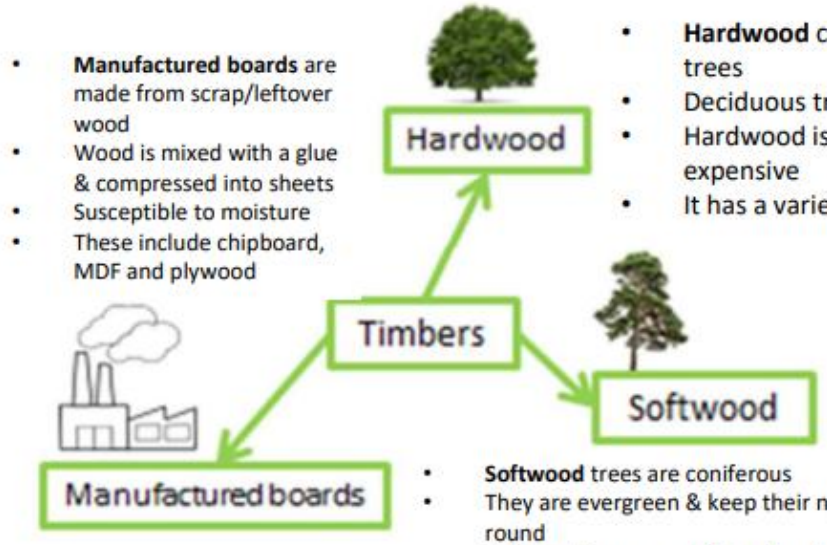
# Year 7 Design Technology Revision




- **Manufactured boards** are made from scrap/leftover wood
- Wood is mixed with a glue & compressed into sheets
- Susceptible to moisture
- These include chipboard, MDF and plywood

- **Hardwood** comes from deciduous trees
- Deciduous trees drop their leaves
- Hardwood is slower growing & expensive
- It has a variety of grains & colours

- **Softwood** trees are coniferous
- They are evergreen & keep their needles all year round
- Softwood trees grow faster than hardwood, making it cheaper
- It is the most sustainable form of timber

## CAD

Computer aided design allows the designer to draw and model the product before manufacturing. It is quick, work can be saved to PC, accurate drawings can be made and reproduced. However disadvantages could be job losses, unsaved files and training costs.

Software used:
**Techsoft 2D Design**

CAD machinery:
**Laser cutter**
**3D printers**

## CAM

Computer aided manufacture is the use of computer software and controlled machinery to automate a manufacturing process. It is more accurate and efficient than producing multiple of the same items by hand however it can be costly to set up and maintain.

- **Polymers**
- Thermoplastic- Can be **shaped by heating** and bending- HIPS, Acrylic
- Thermo**set** Plastic- Once **SET** in a shape it can not be altered

**Hardwoods: maple, oak, cherry, mahogany, teak, cedar**




**Softwoods: pine, fir, cedar, spruce**




**Manufactured boards: chipboard, plywood, MDF**




## Laser cutter

A laser cutter is a machine used to create patterns and designs on suitable materials using a thin, focused laser beam.

Laser cutters can etch or cut designs. When a design is etched it, the laser cutter lightly scratches the surface of the material and when it is set to cut, it slices neatly through the material.

Using a laser cutter is fast and precise.

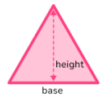
When using computer software to design we need to set our cut lines to red and etch lines should be black.

cut

etch



- **Maths in DT**
- Calculating the area of a simple shape

| Shape | Formula |
|---|---|
|  | $Area = \frac{1}{2} \times base \times height$ |
|  | $Area = base \times height$ |

## Hand tools

Coping Saw
Thin blade
Cuts curves/ shapes
Cuts wood and plastic



Bench Vice
Holds work



File
Smoothing and shaping wood or plastic



Tenon Saw
Wide blade
Cuts straight lines
Only used for wood



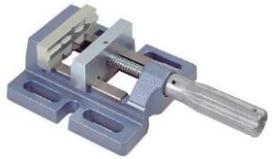


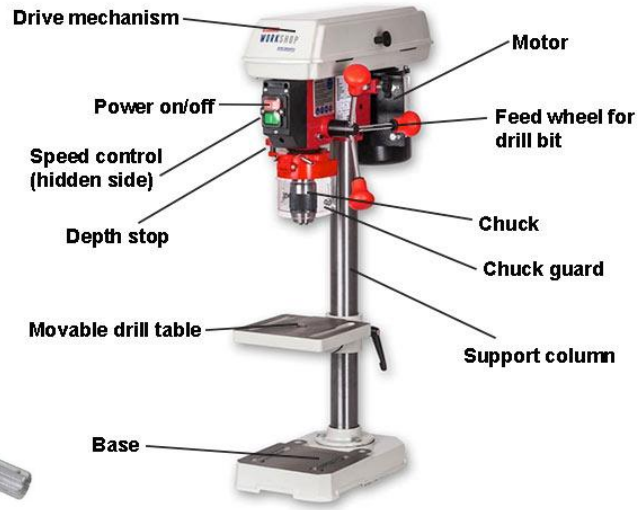
Abrasive paper
Finer smoothing
Lower number (60) is rougher
Gets smoother as numbers get larger

## Pillar Drill

Health & safety-
Safety googles must be worn
long hair tied up
Wear an apron
Only one person operating the drill
Clamp work using a machine vice








## Two Point Perspective drawing

What are the rules for 2 point perspective drawing?

- Using your ruler, decide where on your paper you want your vanishing points to be.
- Place your ruler underneath your two vanishing points and connect them.
- Place a line perpendicular to your horizon line.
- From the top of your second line, measure a length of line.
- Join the lines together.

