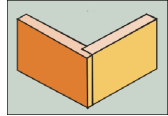


**Key words:**

- PPE
- Deciduous
- Evergreen
- Softwoods
- Hardwoods
- Manufactured boards
- Equilateral
- Tessellate
- Isometric
- Glass paper
- Round file
- Straight file
- Tenon saw
- Bench hook
- Claw hammer
- Vice
- Fret saw
- Goggles
- Apron
- PVA
- Glass paper
- Abrasive
- Sanding block
- Wax
- Wet and dry paper
- Computer aided design
- Computer aided manufacture
- Laser cutter
- 2d design
- Lap joint
- Plywood
- Sapele
- Ash
- MDF
- Pine
- Millimetre
- Centimetre
- Metre squared
- Kilometre squared



**Wood Joints:**

Lap joint: a joint made by halving the thickness of each member at the joint and fitting them together.

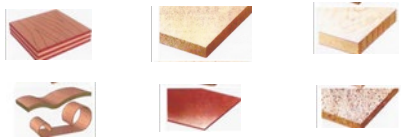
**CAD/CAM:**

Computer aided design is the design of new products using specialist software.  
 Computer aided manufacture uses the CAD files to realise these designs into prototypes or finished products.  
**Advantages:**  
 Quicker- Easy to modify designs-Can be rendered in CAD software- CAD can be emailed to be manufactured and shared with the client-Safer to use- Greater consistence- Greater accuracy- Cost effective when manufacturing in large quantities- Less work force required  
**Disadvantages:**  
 High initial set up costs- Staff require retraining- Higher energy costs- Not cost effective for manufacture in small quantities- Cad designs can be lost if computers fail- Cad design could be stolen by hackers

Operation	PPE	Hazard	Safety Symbol
Drilling, cutting	Goggles	Dust	
workshop activities	Apron	Clothing may get caught in machinery or chemicals can spill onto clothing	
Handling hot/sharp	Heat proof gloves	Burning hands/ fingers when working with hot materials.	
Using machinery	Ear defenders	Damaged hearing after repetitive or continuous loud noise.	
Applying a finish	Face mask	Lung damage from inhaled dust or fumes	
Carrying equipment	Steel toe cap shoes	Damaged or crushed toes and feet caused by falling materials	

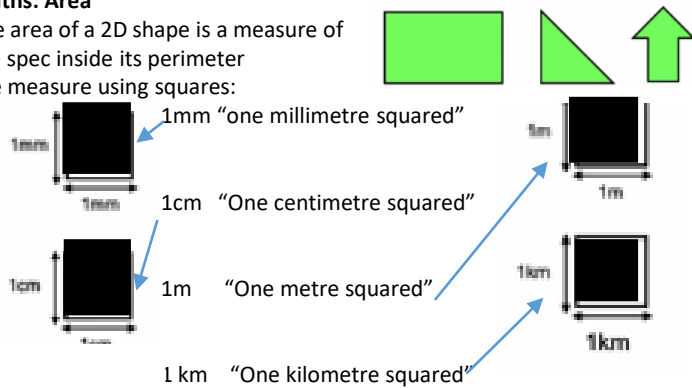
**Materials:**

Woods- hardwoods- softwoods- manufactured  
 Hardwoods- lose their leaves- deciduous- ash, saple and beech  
 Soft woods- keep their leaves-evergreen- pine, fir and spruce  
 Manufactured- man made wood- plywood, MDF and chipboard  
 Advantages of manmade boards: available in large sheets, environmentally friendly/sustainable material, cost effective (cheap), does not have knots/defects.



**Maths: Area**

The area of a 2D shape is a measure of the spec inside its perimeter  
 We measure using squares:



**Year 7 RM Knowledge Organiser Box**

**Finishing Natural Timbers:**

Timbers can be treated with a number of surface finishes these include Paint, Stain, Wax & Varnish. Applying these finishes can:

- Seals the wood to protect the surface from heat and water
- Enhance the grain & surface
- To colour the surface
- To give a specific aesthetic appeal.

**Finishing manufactured boards Veneer**

A sharp blade cuts very thin layers wood called veneer. A layer of veneer can be glued onto less expensive manufactured board to produce a more attractive finish and imitate natural timbers but maintain the properties of a manufactured board.



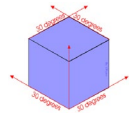
**Lamination**

Laminating involves bonding by gluing strips of materials together in layers to create a strong structure. An example of this is wooden beams.



**Isometric:** a method for visually representing three-dimensional objects in two dimensions in technical and engineering drawings.

Drawn at an angle of 30 degrees.



**Saws:**

Egyptian-bronze saws with jewelled teeth-cutting stones.  
 Mill saw- driven by wind-power and water power-cutting wood  
 Band saw- William Newberry Patented the first- 1808- cutting metals, plastic and wood.  
 Chain saw- cuts with a set of teeth attached to a rotating chain surgeons for bone cutting.

**Finishes:**

Protects the surface of a product to prevent decay.  
**Varnish** enhances the look, brings out the grain, provides a shiny finish, it makes it water resistant, smoother finish and protects.  
**Wax** enhances the look, makes it water resistant and protects  
**Applying** cleaning with an abrasive paper (glass paper), cleaning (washing/wiping), apply a first coat, creating a key in between coats with wet and dry paper, wait for the varnish to dry in between coats and apply 3 coats.

**Palm Sander:**

abrasive pad which comes in various sizes and grades. Fit the users hand and often come with soft grip handles.  
**Belt sander and disc sander:** A belt sander is a machine used to sand down wood and other materials for finishing purposes.  
**Plane-**used for shaving the wooden edge off a longer piece of wood.  
**Thickness planer:** is a woodworking machine to trim boards to a consistent thickness throughout their length and flat on both surfaces

**Tools and processes:**

**Claw hammer-** is a tool primarily used for pounding nails into, or extracting nails from, some other object.  
**Tenon saw-** is a type of hand saw used to cut wood straight.  
**Bench hook-** its purpose is to provide a stop against which the piece of wood being worked can be firmly held.  
**Round file-** a steel hand tool with small sharp teeth on some or all of its surfaces; used for smoothing wood or metal.  
**Straight file-** a steel hand tool with small sharp teeth on some or all of its surfaces; used for smoothing wood or metal.  
**Wood vice-** a tool with movable jaws to hold work in place.

