

Materials: Side Table

TIMBERS: SOURCES & TYPES

Natural materials managed by the FSC.

🌳 **Hardwoods:** Deciduous (flat leaves). Slow-growing, dense, expensive (e.g., Oak, Beech).

🌲 **Softwoods:** Coniferous (needles). Fast-growing, sustainable, cheaper (e.g., Pine, Spruce).

🏭 **Manufactured Boards:** Man-made panels.

MDF: Tiny fibres + glue.

Plywood: Layers glued at right angles (very strong).

Chipboard: Compressed chips/sawdust (cheap).

METALS & ALLOYS

Extracted from the ground (mining/excavating)

FERROUS (Has Iron) - Magnetic & Rusts - Low carbon steel, cast iron.

NON-FERROUS (No Iron) - Non-magnetic & Corrosion resistant - Aluminium, copper, tin.

ALLOYS (Mixtures) - Elements combined to improve properties - Brass, stainless steel.

PROCESSES

Seasoning: Removing moisture from wood to prevent warping, bowing, or cupping.

Air Seasoning: Natural/Slow.

Kiln Drying: Industrial/Fast.

Forming: Bending wood using steam or moisture to make it malleable before clamping it to a former.

Joining: Using permanent joints (like wood glue) or temporary fixings (like bolts).

STOCK FORMS & COMPONENTS

Standardisation reduces costs and waste.

Stock Forms: The shapes you buy from a shop (Sheets, Rods, Tubes, Planks).

Surface Finish: Rough Sawn (furry/cheap) vs. PAR (Planed All Round - smooth/ready).

Standard Components: Pre-made parts like Screws, Pop Rivets, and Knock-Down (KD) Fittings for flat-pack furniture.

Polymers:

Thermosetting:

A group of polymers that once set in shape cannot be reformed.

- Harder to recycle
- Makes excellent insulators



Thermoforming:

A group of polymers that are able to be formed into different shapes over and over.

- more flexible
- easier to recycle
- can be formed into complex shapes



Mandatory



Wear eye protection



Wear hand protection



Use welding mask



Use face shield



Tenon Saw – Used to cut straight lines in wood.



Hand file – Used to smooth out different materials



Try Square – Used to mark out right angles.

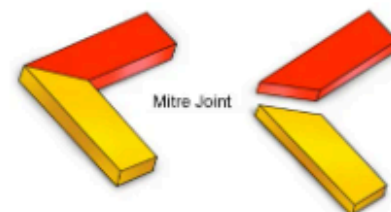


Bench hook – Used to hold work in place when cutting

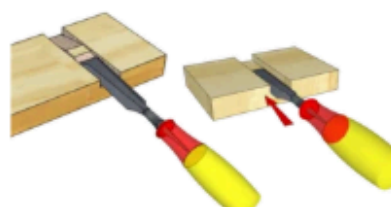


Wood Vice – Used to secure material while working on it (cutting, filing sanding etc.)

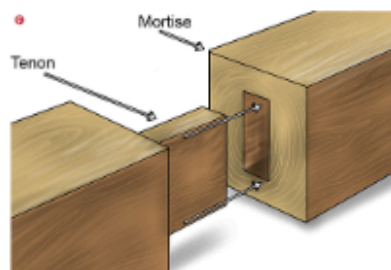
Mitre Joint



Housing Joint



Mortise & Tenon Joint



Pillar/Bench Drill – Used to drill holes into different materials.



Machine vice – Used to hold workpiece securely during drilling.



Belt Sander – Used to sand/smooth down different materials

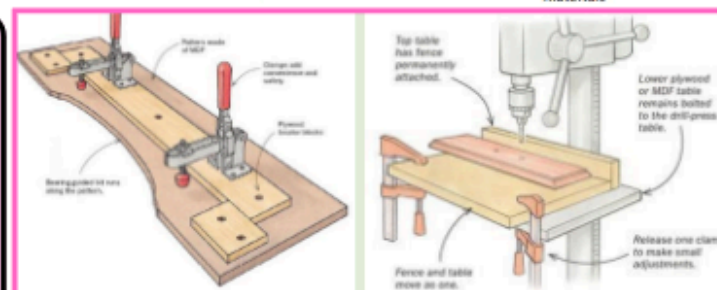
KEY VOCABULARY

Malleable: Can be hammered into shape.

Ductile: Can be pulled into a long wire.

Sustainable: Can be replaced at the same rate it is used

Felling: The process of cutting down a tree.



A jig is a device used to hold a piece of material and guide tools. They are used to ensure the process can be repeated accurately and to a high quality.