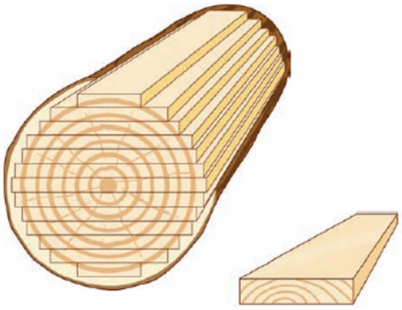
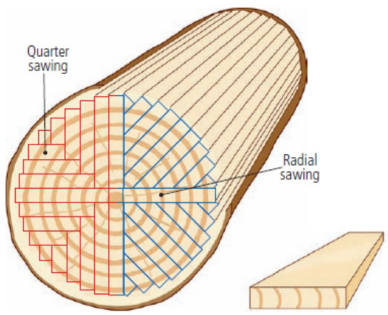
2nd Year revision Notes

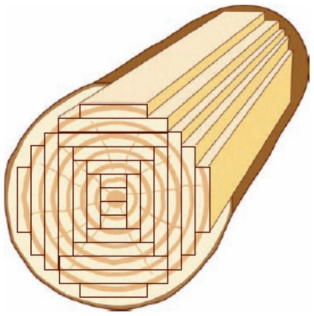
Conversion



Through & Through



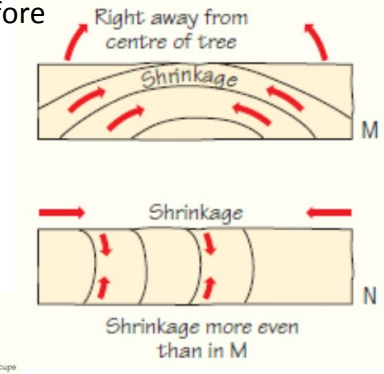
Quarter Sawing

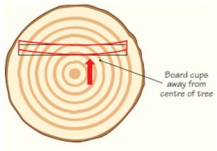


Tangential Sawing

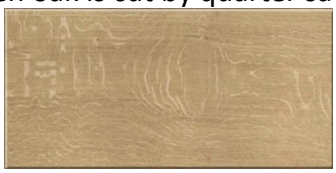
Board 1—more likely to cup as the annual rings are different sizes and therefore dry out a different rates. This cause uneven shrinkage. The board will cup in opposite direction to the rings **(Through & Through)**

Board 2—Rings are same size therefore shrinkage will be even and board is less likely to cup **(Quarter Sawing)**





Silver Grain is the grain effect created when oak is cut by quarter sawing



Through &Through

Advantages

1. Cheap process
2. Quick Process
3. Little waste

Disadvantages

1. Weaker boards
2. Can twist & cup

Tangential Sawing

Advantages

1. Attractive grain
2. Less likely to twist/warp
3. Strong boards

Disadvantages

1. Expensive process
2. Labour intensive
3. A lot of waste created

Quarter Sawing

Advantages

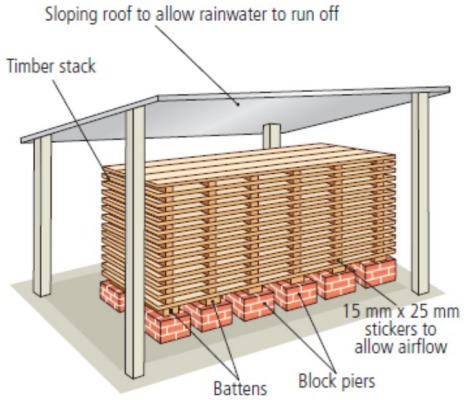
1. Planks are strong
2. Attractive grain
3. Even shrinkage occurs

Disadvantages

1. Expensive process
2. Labour intensive
3. A lot of waste created

Seasoning

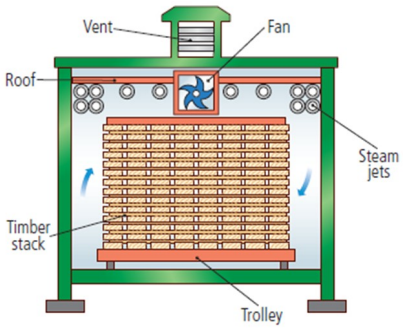
Natural Seasoning



Natural Seasoning

Advantages	Disadvantages
• Cheap process • No electricity required • No skilled labour required	• Takes a long time • Prone to insect & fungal Attack • Can only achieve a moisture content of 18-30%

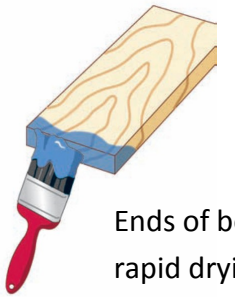
Kiln Seasoning

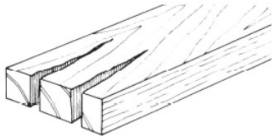


Kiln Seasoning

Advantages	Disadvantages
• Fast process • Moisture content of 14 -18% achieved • Exact moisture content achievable	• Expensive process • Requires energy • Skilled labour and machinery required

- Kiln is a large oven
- Timber is stacked on a trolley and wheeled in
- Steam is pumped in to heat the wood and maintain moisture levels
- Fans keep the air circulating
- Hot air is allowed to escape through the vents

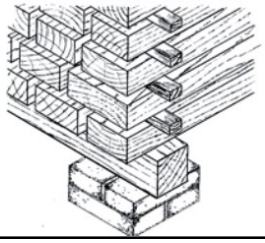




Ends of boards are painted to stop rapid drying and end of boards

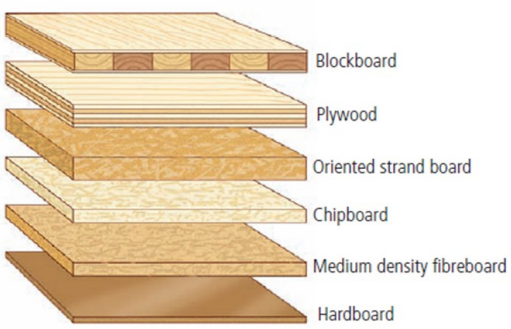
Stickers are used between planks to allow air to circulate

Blocks keep the stack off the ground to prevent moisture rising into the stack



Manufactured Boards

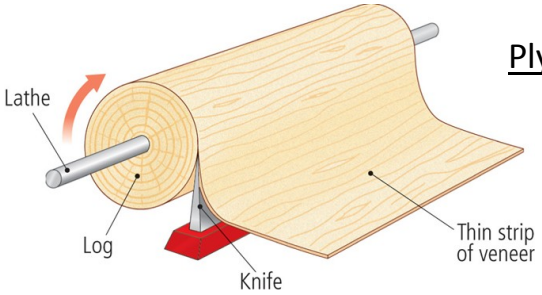
Types

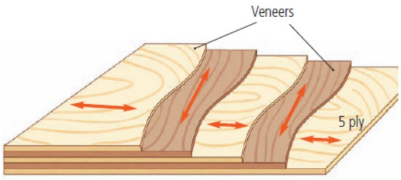


Advantages

1. Environmentally friendly as they use waste wood/ save on use of hardwood
2. Relatively cheap to buy
3. Come in large sheets & large range of thicknesses
4. Large range of surface finishes
5. Strong & staple boards

Plywood manufacture





- Rotary method
- Veneers at 90° to each other
- Odd number of layers

WBP—Water boil proof

Marine Plywood—exterior use

Deforestation

How to prevent deforestation/save the rainforest

1. Choose manufactured boards instead of hardwood
2. Choose softwood instead of hardwood. Paint or use preservative where necessary
3. Use wood from a managed forest only

How does the use of manufactured boards help reduce deforestation?

1. Provides an alternative to solid wood
2. Uses waste wood
3. Mainly made from softwood
4. Makes more with less

Why should we conserve our rainforests

1. The rainforest is a thing of natural beauty
2. To protect the habitats of main animals
3. It contain many rare trees and plants
4. The rainforest is the 'lungs of the earth'
5. To protect native tribes who live in the for-

HARDWOOD	SOFTWOOD
Ash	Scots Pine
Beech	Norway Spruce
Sycamore	Sitka Spruce
Oak	Douglas Fir
Horse Chestnut	Pine
Elm	

Sharpening

1. Grinding (25°)
2. Sharpening/Honing (30°)
3. Removing the Burr

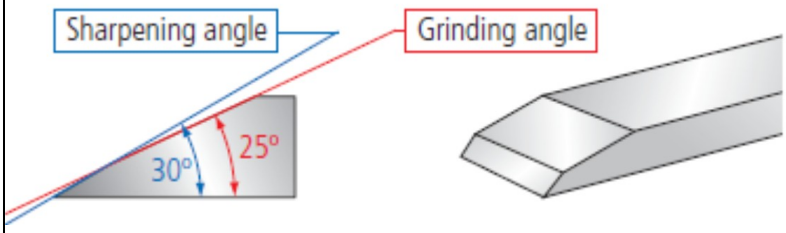
1.Grinding

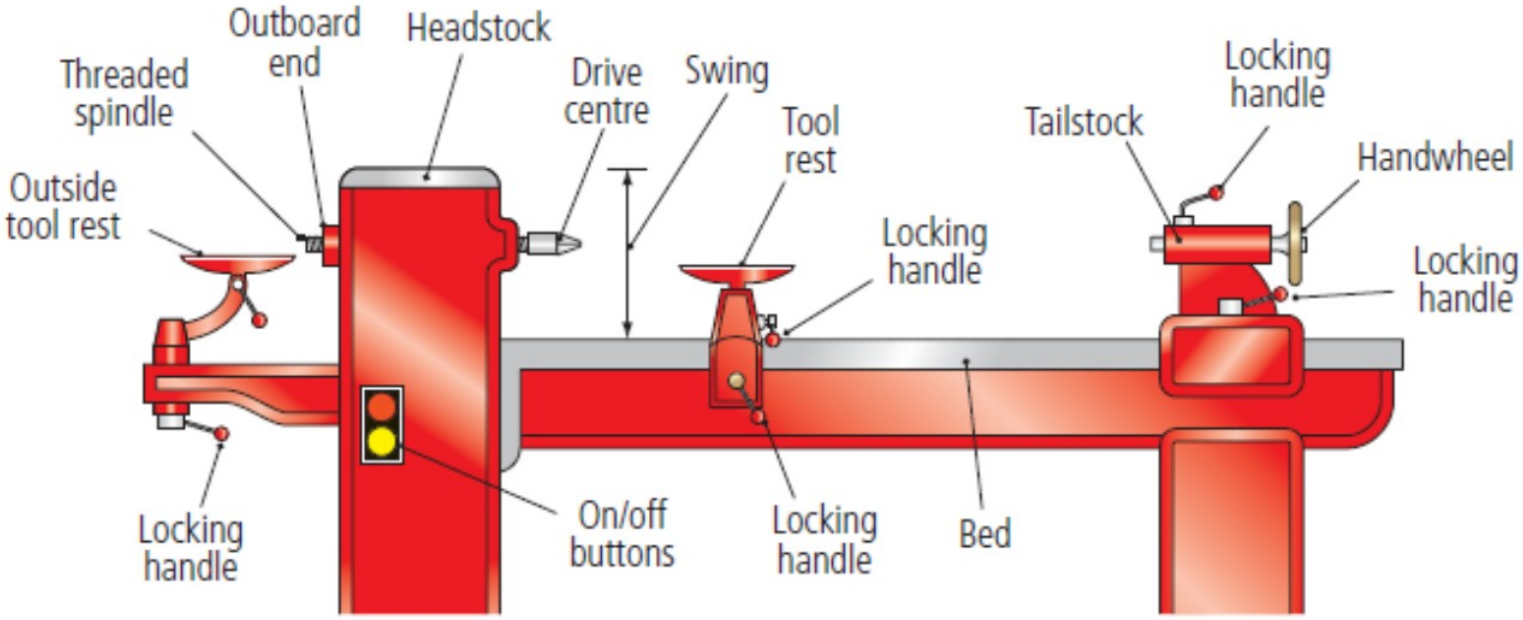
Cool with water to prevent overheating

2.Sharpening

Sharpen on an oilstone/Whetstone. Cool with oil/water to lubricate. Fig of 8 prevents uneven wear of stone.

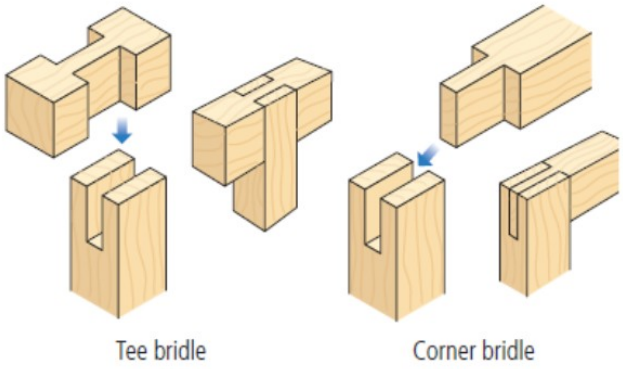
3,Removing the Burr



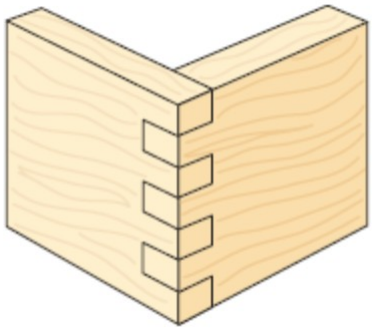


Joints

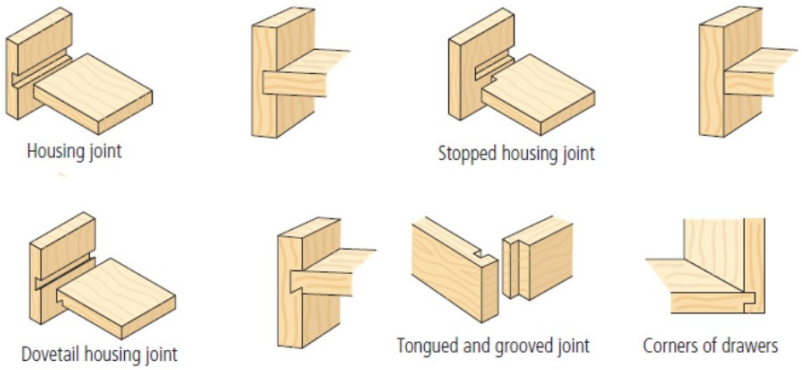
Bridle joint



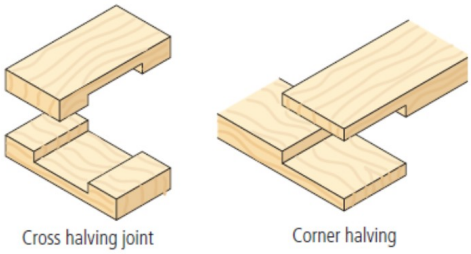
Finger Joint



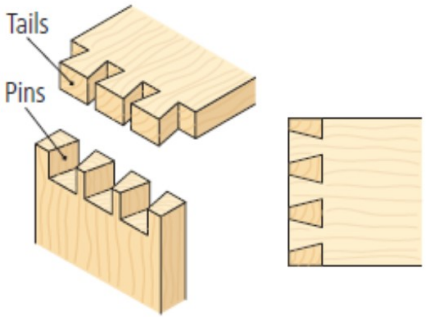
Housing Joints

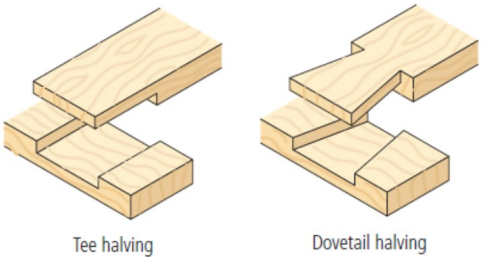


Halving Joints



Dovetail Joint





Mortise & Tenon Joints