

# Knowledge Organiser Timber

## Resistant Materials

### Hardwood

Timber from a deciduous tree. They are slower growing and more expensive.

**ash:** a pale and attractive hardwood. Tough, flexible. Open grained.  
**Used in** furniture, steam bending, wood turning.

**balsa:** soft and lightweight, the wood is actually from a deciduous flowering plant, not a tree. Very light in colour with a distinct, straight grain.  
**Used in** model making, prototypes, craft, model aeroplanes.

**beech:** hard, tough, strong/close grained, white/pinkish brown. Prone to warping.  
**Used in** functional furniture, chairs, tables, tools, veneers.

**Iroko:** African tropical hardwood. Deep reddish brown, is a less ecologically damaging alternative to mahogany. Also known as African Teak.  
**Used in** boat-building, decorative furniture, traditional musical instruments.

**mahogany:** fairly strong, medium weight, durable. Interlocking grain. Pink reddish brown. Prone to warping.  
**Used in** indoor furniture, panelling, veneers

**oak:** strong, heavy, durable, hard and tough. Open grained. Light brown. Finishes well. Expensive.  
**Used in** construction, high-class furniture, boat building, veneers.

**teak:** very strong, hard, durable. Natural oils make it resistant to moisture. Golden brown. Very expensive. Blunts tools easily.  
**Used in** quality furniture, outdoor furniture, boat building, veneers.

**walnut:** an extremely durable, tight-grained wood. Its hard, dense grain make it ideal for machining and joint making. Polishes to a high quality finish.  
**Used in** restaurant tabletops, cabinet making, decorative features such as handles, bannisters, veneers and layers in plywood.

### Softwood

Timber from an evergreen or coniferous tree.  
Fast growing.

**Douglas Fir:** pale to medium red/brown colour. Works well. Straight grained, dries quickly, fast growing.

**Used in** construction, railway sleepers, joinery, flooring, decking.

**Paraná Pine:** fairly strong and durable. Straight grain. Pale yellow, red/brown streaks. Almost knot free. Tends to warp.

**Used in** best quality indoor joinery, staircases, built-in furniture.

**Scots Pine:** pronounced straight grain. Light brown/yellow in colour. Polishes well.  
**Used in** general construction work and joinery.

**spruce:** fairly strong with small, hard knots. Creamy white, resistant to splitting. Not very durable.

**Used in** general indoor work such as stud-walls, shelves.

**Western Red Cedar:** straight silky grain, dark reddish brown. Lightweight and not very strong. Natural oils make it durable against weather.

### Properties of Timber and Sheet Materials

Property	Definition	Found in
hardwood	Timber from a deciduous tree.	oak, ash, mahogany, walnut, beech, balsa
softwood	Timber from an evergreen or coniferous tree.	pine, red deal, cedar
tight-grained	Timber with a high ring count, slower growing and denser.	oak, beech
loose-grained	Timber with a low ring count- faster growing.	scots pine, red deal
dense	Can be deformed without losing toughness.	oak, beech
straight-grained	Timber which has grown straight, has a uniform grain.	oak, beech, red deal
knot	Irregularity in wood grain, where a branch or offshoot existed.	spruce, ash, some plywood
weather resistant	A tight-grained timber has good water and heat resistance.	oak, beech, ash, plywood
stiff	A timber that does not bend easily.	oak, ash, beech, plywood, MDF
easy to work	A timber that is either low or medium density. Easy to cut and shape.	red deal, scots pine, balsa, MDF
lightweight	A timber that is light in weight.	balsa, plywood, MDF
attractive grain	When polished or varnished, a timber's grain is eye-catching.	walnut, oak, ash, some plywood

### Timber products

Sheet materials manufactured from layers or particles of wood including MDF, plywood and hardboard.

**MDF:** mid-brown colour. Will swell if exposed to moisture. Sheets can be heavy. Smooth finish. No grain. Available in a wide range of sheet sizes and thicknesses.

**Used in** flat-pack furniture, vacuum-form moulds, product modelling, architectural models. Often covered in veneer for a natural timber appearance.

**veneer:** very strong, hard, durable. Natural oils make it resistant to moisture. Golden brown. Very expensive. Blunts tools easily.

**Used in** table tops, flat pack furniture, plywood, cabinet-making.

**hardboard:** Made from wood chip and pulp, cheaper substitute to plywood. Used when space filling as opposed to requiring strength. No regular grain.

**Used in** countertops, flooring, flat-pack furniture.

**plywood:** Reddish brown or white in colour. Layered in odd numbered sheets. Strong. Susceptible to splintering

**Used in** sheds and cladding, furniture, flooring, boats (marine ply).

