

# Knowledge organiser: jewellery box (Theory Focus)

## Material properties: mechanical properties

- These are how a material reacts when a force is applied to it.
- These include:
  - Strength
  - Hardness
  - Toughness
  - Malleability.

## Material properties: physical properties

- These are characteristics of the material, not related to any forces applied to it.
- These include:
  - Density
  - Electrical conductivity
  - Absorbency
  - Corrosion resistance

## Types of wood: softwood

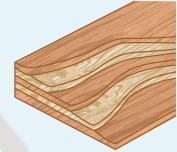
- Softwood comes from coniferous trees.
- These are trees that keep their leaves or needles all year round, so they typically grow faster than hardwood trees.
- Softwood trees can reach a size where they can be harvested for timber in 30 years.



For example, a spruce pine

## Types of wood: manufactured boards

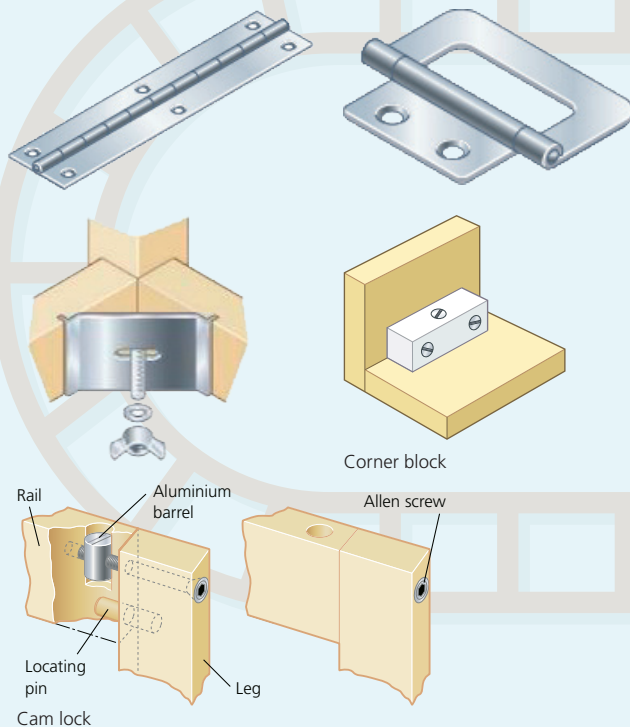
- Manufactured boards are made by gluing particles or pieces of wood together.
- These can be the waste materials from the cutting of hardwood or softwood or can be recycled wood.
- Examples are MDF, plywood and chipboard.



For example: plywood

## Fittings

- Fittings are small parts that are added or attached to an item.
- These include handles and hinges.
- Fittings are often used in flat-pack furniture to join parts together.
- It is normally cheaper to buy fittings from companies that make them in large quantities than to make them yourself.



## Processes

- Process such as **steam bending** can be used to shape and bend timber without wasting.
- **Laminating** can be used to thicken and strengthen timber.

## Types of wood: hardwood

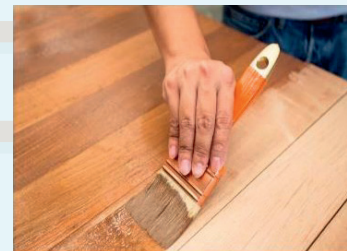
- Hardwood comes from deciduous trees. These shed their leaves each autumn.
- Hardwood trees can take 100 years to grow to a size where they can be harvested for timber.
- Examples are oak, ash and balsa.



## Finishes

Most timber products can be damaged by moisture. A finish prevents this by sealing the wood and providing a protective layer. Finishes are applied for two reasons:

- Aesthetics - they make it look good!
  - Function – to protect it.
- Types of finish include varnish and paint. These are usually applied by brush or sprayed on.



## What is an evaluation for?

- Designers will evaluate a final product for a number of reasons.
- They will consider many different things depending on the product they have designed.
- Some common points to include in an evaluation are:
  - How well does it satisfy the design brief?
  - If you were to make it again, what improvements would you make?
  - What do you like about your jewellery box?