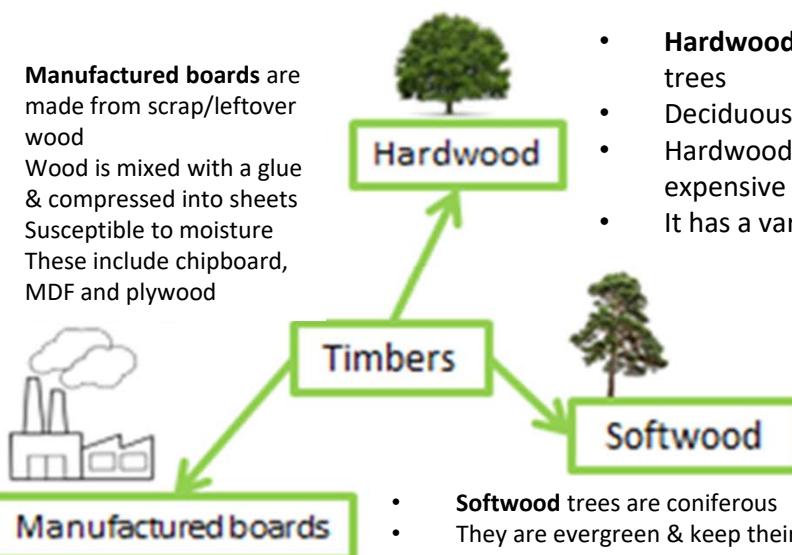




## Knowledge Organiser: Year 9: 'CAD/CAM'

- Manufactured boards are made from scrap/leftover wood
- Wood is mixed with a glue & compressed into sheets
- Susceptible to moisture
- These include chipboard, MDF and plywood



**Hardwoods:** maple, oak, cherry, mahogany, teak, cedar



maple



oak



mahogany

**Softwoods:** pine, fir, cedar, spruce



pine



cedar



spruce

- Hardwood** comes from deciduous trees
- Deciduous trees drop their leaves
- Hardwood is slower growing & expensive
- It has a variety of grains & colours



Softwood

- Softwood** trees are coniferous
- They are evergreen & keep their needles all year round
- Softwood trees grow faster than hardwood, making it cheaper
- It is the most sustainable form of timber



### CAD

Computer aided design allows the designer to draw and model the product before manufacturing. It is quick, work can be saved to PC, accurate drawings can be made and reproduced. However disadvantages could be job losses, unsaved files and training costs.

### CAM

Computer aided manufacture is the use of computer software and controlled machinery to automate a manufacturing process. It is more accurate and efficient than producing multiple of the same items by hand however it can be costly to set up and maintain.

### Laser cutter

A laser cutter is a machine used to create patterns and designs on suitable materials using a thin, focused laser beam.

**Manufactured boards:** chipboard, plywood, MDF



chipboard



plywood



MDF

Laser cutters can etch or cut designs. When a design is etched it, the laser cutter lightly scratches the surface of the material and when it is set to cut, it slices neatly through the material.

Using a laser cutter is fast and precise.

When using computer software to design we need to set our cut lines to red and etch lines should be black.

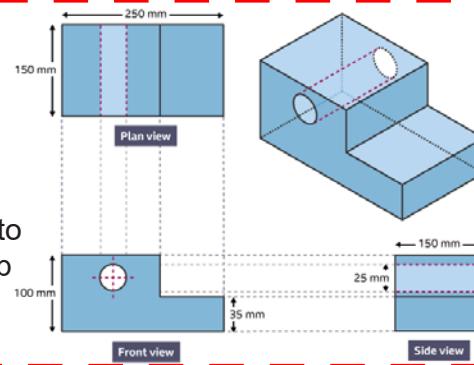




## Knowledge Organiser: Year 9: 'CAD/CAM'

### Third angle orthographic drawing

Orthographic projections are working drawings in either a first or third angle projection and show each side of a design without perspective, ie a 2D drawing of a 3D object. They are used to show an object from every angle to help manufacturers plan production. They include a front, side and plan view.



### Alexander McQueen

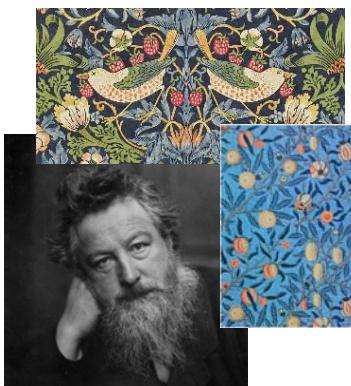


## 1969- 2010

He was an English fashion designer and couturier. He had boutiques across the world, with his label including perfume, accessories and trainers. His designs were often theatrical, dramatic and sometimes controversial.

<b>design brief</b>	an outline of the project / what the task is
<b>specification</b>	a specification is a list of points that are specific requirements of a product
<b>existing products</b>	products that have already been made and sold by other people
<b>inspiration</b>	taking ideas from something else and incorporating them into your designs
<b>evaluate</b>	to judge the quality of a finished product
<b>CAD</b>	computer aided design – using a computer programme to design
<b>CAM</b>	computer aided manufacture – using a computer to control machines when making

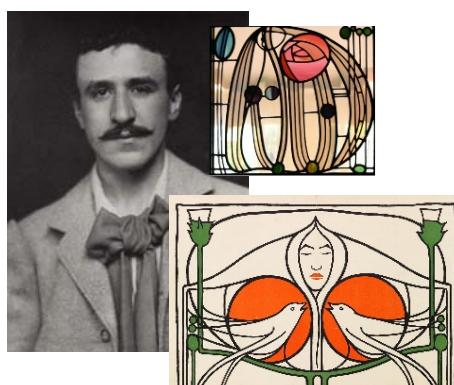
### William Morris



## 1838-1896

He was a British textile designer, poet, artist & novelist associated with the British Arts and Crafts Movement. He was a major contributor to the revival of traditional British textile arts & craft movement & is very well known for his ornate wallpaper designs!

### Charles Rennie Mackintosh



## 1868-1928

He was an architect, designer, and watercolourist who was strongly associated with the Arts and Crafts movement, and who became the main producer of Art Nouveau in Scotland. His work includes buildings, wallpaper, furniture & prints.

### Ettore Sottsass



## 1917-2007

He was an Italian architect and designer during the 20th century. His work included furniture, jewellery, glass, lighting, home objects and office machine design, as well as many buildings and interiors. His style was defined by bright colour choices, statement pieces and decoration.