

SUBJECT: Year 9 Technology

UNIT: Y9 Resistant Materials

Materials:

MDF is made from small fibres which are mixed with a wax and resin, then heated and compressed into the desired thickness. MDF has no grain, and is easy to work. It is popular for interior DIY furniture.

Plywood is made from layers of wood, bonded together at an angle of 90 degrees to increase strength and rigidity. Sometimes, the facing layers can be high quality, e.g. birch, to provide a better aesthetic finish.

Pine is a pale-yellow coloured wood with darker brown grain. It is lightweight, easy to work, used for construction and furniture products.

Designing and the Environment

Reduce: Cutting down on packaging is a great way of reducing unnecessary waste that is not really an essential part of the product we purchase.

Reduce: Reducing plastics where possible will be a massive gain. Plastics can be difficult to recycle and biodegrade, so finding an alternative would be very helpful.

Recycle: Recycling waste correctly is another area for improvement.

Repair: Repairing products or choosing not to upgrade when a newer version becomes available can be beneficial.

Comb/Finger Joint:

This joint works at the end of two timber pieces to build a seamless right angle. You cut out a series of symmetrical slots to form rectangular projections called fingers. When you adhesive, the fingers get inserted to create a permanent bond that results in a solid corner.



FINGER JOINT

Key Words:

- **DESIGN BRIEF** that outlines the product to be designed.
- **RESEARCH** – is the investigation into materials to be used, manufacturing methods, look at other existing and iconic products. This process will help you design a better suited product.
- **SPECIFICATION** – is a set of criteria that a design must meet in the design and manufacture stages. The specification points are set from a design brief.
- **MANUFACTURING PLANS** – plans are made as to the stages of production. Tools and equipment, time, health and safety and quality assurance will all be included in a detailed plan.

Mitre Joint:

This joinery option connects two ends that get cut at a 45° degree angle. The advantage of using this approach involves the strength of the corner. You receive a seamless look that does not show any end grain.



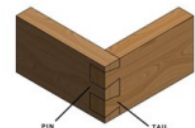
MITER JOINT

Dovetail Joint:

Woodworkers use this option to add strength to a corner. It uses a series of interlocking pins and tails to create a resilient edge, that can be used for furniture, cabinet making and framing.



DOVETAIL JOINT



Dowel Joint:

This joint is cut at 90° and

is reinforced using wooden dowels. It requires you to drill a hole between the two pieces. The two pieces get connected with dowels to create a durable, flat surface.

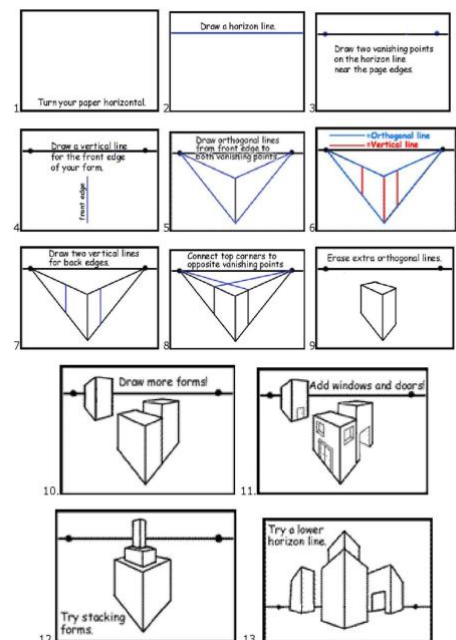


Butt Joint:

This joint works at the end of two timber pieces, to build a seamless right angle. It is cut at 90°, but lacks strength. Additional fixings such as panel pins and dowels can be used to strengthen the joint.



2 Point Perspective - step by step



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CARBON FOOTPRINT: This term is used to denote the amount of carbon dioxide produced by your daily activities and use of material goods. Since CO₂ is the most common of the greenhouse gases, you can determine your personal participation in Global Warming. you can prevent global warming, simply by changing some of your habits.

LIFE-CYCLE ASSESSMENT (LCA, also known as life-cycle analysis, Eco balance, and cradle-to-grave analysis) is a technique to assess environmental impacts associated with all the stages of a product's life from cradle to grave. Each stage of the LCA is below...