

Y10 Enterprise - Knowledge Organiser

Mind maps



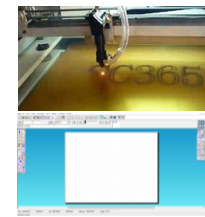
Target market and Client Profile



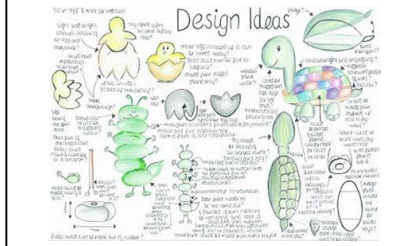
CAD/CAM

Computer Aided Design
Computer Aided Manufacture

Using the laser cutter with 2D design



Design Ideas



The 6 Rs

Rethink – Do we make too many products? Design in a way that considers people and the environment.

Refuse – Don't use a material or buy a product if you don't need it or if it's bad for people or the environment.

Reduce – Cut down the amount of material and energy you use as much as you can.

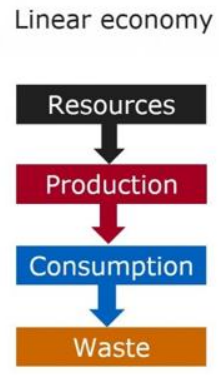
Reuse – Use a product to make something else with all or parts of it.

Recycle – Reprocess a material or product and make something else.

Repair – When a product breaks down or doesn't work properly, try to fix it.



Lifecycle



Chain economy



Design Specification using ACCESSFM

- Aesthetics** – What the product will look like.
- Cost** – How much will it cost to make, disposable income and profit.
- Client** – Who is the product for, what age/gender etc.
- Environment/Ergonomics** – 6Rs and lifecycle / How does the product fit the user taking into account the 5th and 95th percentile from anthropometric data.
- Size** - What size does the product need to be.
- Safety** – What health and safety cautions need to be considered for the make and the end product.
- Function** – What is the product used for. (functional or decorative)
- Materials** – What materials is the product made from.

Group Task Marked on the following:

- Communication** – Listen, write and speak.
- Confidence** – Self-motivation and strong belief in skills.
- Financial capability** – Manage money.
- Initiative** – Evaluate and calculate risks.
- Organisation** – Smart goals
- Problem solving** – Think creatively
- Resilience** – Adapt to changes.
- Teamwork** – Collaboration whilst managing personal feelings.

Only **1** in every **10,000** products are designed with the environment in mind...

(Edwin Datschefski)

Materials Investigation



Other areas covered

- Design Brief
- Manufacturing Diary
- Evaluation

Mass

Large number of products made at one time. Runs all year.

Batch

A small number of products are made at one time. Seasonal.

One-Off

One product is made only. Prototype. Special Occasion.

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Recall Textiles Techniques



Tie Dye



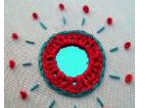
Applique



Molar



Pin Tucks



Sisha



Block Print



Fabric Crayons



Machine embroidery



Hand Embroidery



Transfer Print



Batik

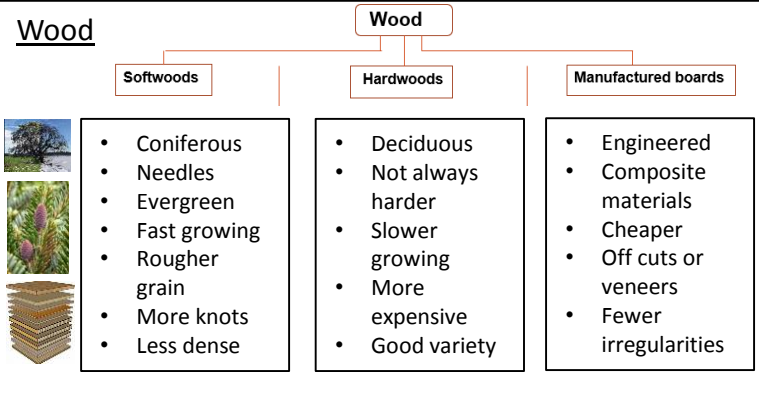
The Sewing Machine



1. Place fabric under needle.
2. Wind needle down.
3. Gently lower presser foot.
4. Switch on machine.
5. Sew with fingers at front and good speed control.
6. Lift needle out by winding the hand wheel towards you.
7. Pull out behind.
8. Cut threads and make sure the ends are on the desk.

How to thread the machine

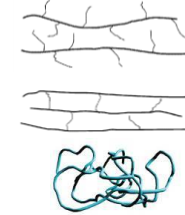
Wood



Type of finish	Description	Example
Paints	Divided into three main groups oil based paints, water based paints and solvent based paints.	Decking, furniture, panelling,
Veneers	A thin layer of wood that is applied to a manufactured board to give it the appearance of real wood	Tables, wardrobes, coffins
Varnish and lacquer	available in oil, water and solvent based types.	External/Internal wood-
Oil	Oil provides an improved appearance for wood by enhancing the grain. Vegetable oil can also be applied to wood which comes in contact with foods.	Wooden spatulas, salad servers
Wood Stain	used to improve the colour of the wood. Wood stain if used on its own only colours the wood and so and requires a coating of wax or varnish to make it weather proof.	Benches, sheds, fences, etc.

Plastics (Polymers)

Thermoplastic can be reheated and reshaped. Can be recycled.
Thermoset are cured (set) using heat. Cannot be reshaped once cured. Harder to recycle.
Elastomers can be either thermoset or thermoplastic. They have a stretchy and rubbery quality.



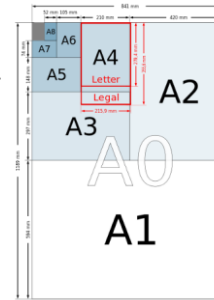
Plastics (Polymers) Natural

Amber is fossilised tree resin and is found in lumps which can be carved for jewellery and other decorative products.
 Latex is rubber particles dispersed in water. Usually found in a milky liquid or heated to form a foam.

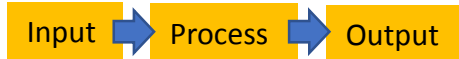


Paper and Card

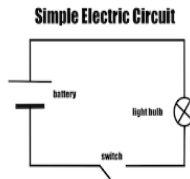
GSM = grams per square meter
Paper – usually around 72gsm
Card/Thick paper – Usually Around 120gsm – 200gsm
Board is measured in microns



Electronics

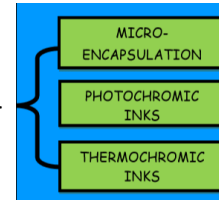


- | | | |
|---------|-------------|-----------------|
| Power | Wires | LED – light |
| Switch | Resistor | Sound – speaker |
| Sensors | Transistors | Buzzer |
| | Capacitors | motor |
| | Timers | |
| | Integrated | |

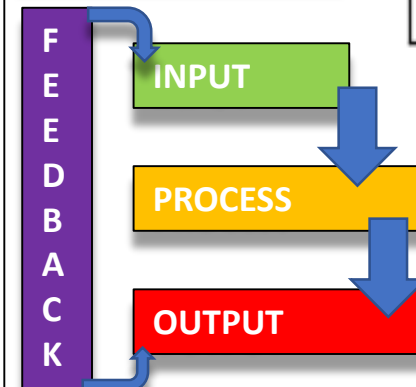
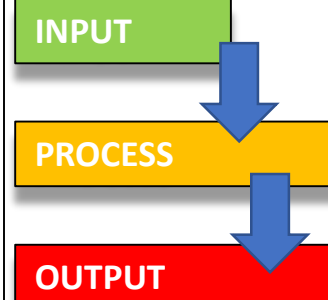
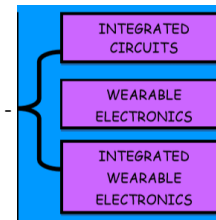


Smart and Modern Material

Smart Textiles -



Technical Textiles -



Simple Electric Circuit

