Your notes

GCSE Design and Technology: revision notes

Selecting materials and components

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Factors affecting the choice of material

- **Functionality**: will the material do the job? Consider strength, weight, **durability**, and whether it needs to be waterproof or conduct heat.
- **Aesthetics**: how it looks and feels, such as its colour, texture and finish.
- Environmental factors: is it renewable, recyclable or **biodegradable**? How much energy does it take to make?
- **Availability**: is it easy to get in the stock forms and sizes needed?
- Cost: the price of the material and of processing it. Mass-produced products need cheap materials.
- Social, cultural and ethical factors: will it offend anyone, is it produced fairly, and does it suit the users?

Making a justified choice

- Name the material precisely, such as "acrylic" rather than "plastic", and link each property to the product's function.
- Example: a children's toy made from beech is hard, durable, has no splinters when finished, and is non-toxic when finished with a safe varnish.
- Example: a garden bench made from larch or pressure-treated pine resists rot and costs less than a hardwood.

Components

- **Standard components** are ready-made parts, such as screws, bolts, hinges, LEDs and zips.
- They save time and money, are made to consistent sizes, and can be replaced easily.

Key terms

Functionality	How well a product or material does its job.
Aesthetics	How a product looks, feels and appeals to the senses.
Availability	How easy a material is to get in the form needed.
Standard component	A ready-made part, such as a screw or hinge.
Biodegradable	Able to be broken down naturally by bacteria.
Durability	How long a material lasts without wearing out.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What does aesthetics mean?
2. What is functionality?
3. Why are standard components used?
4. Which factor considers whether a material is recyclable?
5. Why might a mass-produced product use a cheap material?
6. Why is it better to name a material precisely in an exam answer?
7. Why might larch be chosen for a garden bench?
8. What is availability?

Answers

1. How a product looks and feels
2. How well a product does its job
3. They save time and money and are consistent in size
4. Environmental factors
5. To keep the cost of each product low
6. It shows you know which material suits the job
7. It resists rot and is cheaper than many hardwoods
8. How easy a material is to get in the form needed

What to do next

Practise 10 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

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