AQA GCSE Design & Technology Advanced Information June 2022

Informing Design Decisions
Environmental, Social and Economic Challenge

Evaluating the use of new technology

The success of new technologies and products are frequently evaluated in what ways?

Cost
Reliability
Longevity
Sustainability
Recyclability

What are the positive and negative issues associated with these areas of evaluation?

Informing design decisions

If you are designing a new product, what will you need to gather opinion and facts on?

- Successes and shortfalls of similar available products
- Available technology
- The size of the market
- The market need

Environmental, social and economic challenge

Planned Obsolescence

Should all products last for a lifetime? Why are products designed to fail?

How long should these products last for? –
School chair
iPhone
Shoes
Plastic fork

Determining Product Lifespan

What should designers/companies consider when designing new products?

Fashion and trends?
The requirements to maintain market share?
New technologies?
Upgradeability and function?

Once the expected lifespan is determined, manufactures need to appropriately engineer the product in order to last as long as expected.

Disposability

Some products are planned with deliberately short lifespans. What are the advantages and disadvantages of short product lifetimes to: Manufacturers?
Consumers?
The environment?

Design for Maintenance

Should all products be repairable?
What scope for maintenance and repair should designers allow?

Specialist Repairs
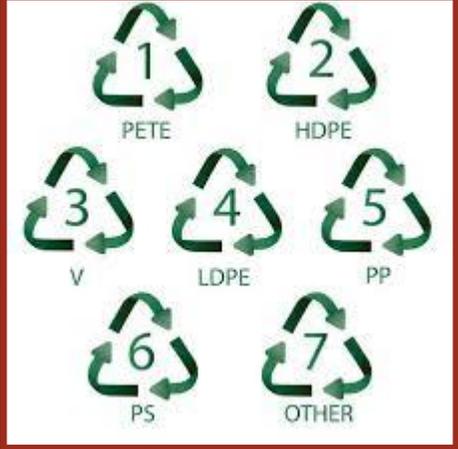
Some products are manufactured to be too complex to be repaired at home so -   Knowledge is required to fix electronics or mechanical parts,
Specialist tools are required
Specialist replacement parts may be required

Ethics and the Environment

What is the meaning of **social responsibility**?
Do we have an social responsibility to look after the environment?

Recycling

What products are designed to be recycled or reused?
What makes them suitable for recycling?
What products are easily upcycled?

Upcycling

Is upcycling a valuable addition to saving the environment?
Have you ever upcycled anything?
What are the negatives to upcycling?
Should products be designed with upcycling in mind?

End of Life

What should responsible end of life design should include?

- Products should contain as few materials as possible
- recycled and recyclable materials where possible
- easy-to-separate materials avoiding permanent bonding methods
- built-in reusability where possible