Your notes

GCSE Design and Technology: revision notes

New and emerging technologies

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Technology in industry

- **Automation** uses machines and robots to do tasks once done by people. It is fast, accurate and consistent, but costly to set up and can replace jobs.
- CAD (computer-aided design) lets designers draw, test and change designs on screen. CAM (computer-aided manufacture) uses the design data to control machines such as laser cutters, CNC routers and 3D printers.
- Flexible manufacturing systems (FMS) use computer-controlled machines that can switch quickly between products.
- **Just in time** (JIT) production orders materials only when they are needed, so less money is tied up in stock and less space is used.
- **Lean manufacturing** aims to cut waste of every kind: materials, time, energy and effort.

Enterprise and markets

- **Crowdfunding** raises money for a new product from many people online, and tests whether there's demand.
- Virtual marketing uses social media and websites to promote products cheaply to many people.
- Cooperatives are businesses owned and run by their members, who share the profits.
- Fair trade makes sure producers in developing countries are paid a fair price and work in good conditions.
- Technology push: new technology leads to new products. **Market pull**: customers' wants lead to new products.

Impact on people, society and the environment

- Changing job roles: fewer manual jobs, but more skilled jobs in programming and maintenance.

- Inclusive design makes products usable by as many people as possible, including disabled and older people.
- New products use finite resources and create waste, so designers should consider sustainability.
- **Planned obsolescence** means designing products to last a limited time so people buy replacements. It creates waste, whereas design for maintenance makes products easy to repair.

Your notes

Key terms

Automation	Using machines and robots to do tasks once done by people.
CAD	Computer-aided design: designing on a computer.
CAM	Computer-aided manufacture: using computers to control machines.
Just in time	Ordering materials only when they are needed.
Lean manufacturing	Production that aims to eliminate all waste.
Crowdfunding	Raising money for a product from many people online.
Planned obsolescence	Designing products to become out of date or stop working after a set time.
Market pull	New products created because customers want them.

Quick questions

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

1. What does CAM stand for?
2. What is just in time (JIT) production?
3. What is a disadvantage of automation?
4. What is crowdfunding?
5. What is planned obsolescence?
6. What is market pull?
7. What does fair trade aim to do?
8. What is the aim of lean manufacturing?

Answers

1. Computer-aided manufacture
2. Ordering materials only when they are needed
3. It is costly to set up and can replace jobs
4. Raising money from many people online to develop a product
5. Designing products to last only a limited time
6. New products developed because customers want them
7. Pay producers in developing countries a fair price
8. To cut out all kinds of waste

What to do next

Practise 11 questions on this topic

Try 5 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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