Your notes

GCSE Design and Technology: revision notes

Design strategies and communicating ideas

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Design strategies

- **User-centred design** keeps the user's needs at the centre of every decision, often testing ideas with them.
- Iterative design repeats a cycle of designing, making, testing and improving.
- The systems approach breaks a product into inputs, processes and outputs.
- Collaboration means working with others, such as clients, experts or other designers.
- **Design fixation** is sticking to the first idea; strategies like sketching many ideas and taking inspiration from nature help avoid it.

Drawing techniques

- Freehand sketching is quick for exploring ideas.
- **Isometric drawing** shows a 3D object with vertical lines and lines at 30 degrees.
- **Oblique drawing** shows the front face flat, with depth lines at 45 degrees.
- Perspective drawing (one-point or two-point) uses vanishing points to look realistic.
- **Orthographic projection** shows accurate front, side (end) and plan views, with dimensions, for manufacture. In the UK, third angle projection is usual.
- **Exploded drawings** show how parts fit together. System and schematic diagrams show how circuits or systems work.

Other ways to communicate

- **Annotation** explains ideas, materials, sizes and how they meet the specification.
- CAD produces accurate 2D and 3D drawings and renderings that can be changed easily and shared.

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- Models (in card, foam or with CAD) test proportions and function before making the final product.

Key terms

Isometric drawing	A 3D drawing with lines at 30 degrees to the horizontal.
Oblique drawing	A 3D drawing with a flat front view and depth lines at 45 degrees.
Orthographic projection	Accurate front, side and plan views of an object for manufacture.
Exploded drawing	A drawing showing how parts fit together.
Annotation	Notes added to drawings to explain ideas.
User-centred design	Designing around the needs of the user.
Design fixation	Sticking to the first idea instead of exploring others.

Quick questions

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

1. What angle are the receding lines in an isometric drawing?
2. What angle are the depth lines in an oblique drawing?
3. Which drawing shows accurate front, side and plan views?
4. What does an exploded drawing show?
5. What is iterative design?
6. What is design fixation?
7. What is an advantage of CAD for communicating ideas?
8. What does annotation do?

Answers

1. 30 degrees
2. 45 degrees
3. Orthographic projection
4. How parts fit together
5. Repeating cycles of designing, making, testing and improving
6. Sticking to the first idea
7. Designs can be changed easily and shared
8. Explains ideas, materials and sizes on drawings

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

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