YR 13 DESIGN & TECHNOLOGY
Revision guidance

Circulation Yr13 Product Design Students

Title Yr13 PPE2 revision Guidance

Purpose To provide revision information for PPE2 PD exam

You will sit 1 Design and making Paper in class in April.

AQA A Level Product Design Revision List

1. Ergonomics and Anthropometrics

- Revision Link: Ergonomics and Anthropometrics
- Key Focus: Learn how "human factors" influence the shape of handles and the placement of triggers.

2. Environmental Directives & Sustainability

**WEEE Directive, Disassembly, Energy conservation, and the "Crossed-out wheelie bin" symbol.*

- Revision Link: The 6 Rs and Sustainability
- Revision Link: Ecological and Social Footprint
- Key Focus: Research the WEEE Directive specifically—manufacturers are legally responsible for the disposal and recycling of electronic waste.

3. Industrial Manufacturing Processes

Die casting, Injection moulding, Die cutting, and Quality Assurance.

- Revision Link: Shaping and Forming Polymers (Injection Moulding)
- Revision Link: Shaping and Forming Metals (Die Casting)
- Revision Link: Quality Control and Assurance
- Key Focus: Understand why a drill casing might switch from metal (heavy/durable) to plastic (lightweight/insulated).

4. Virtual Modelling & CAD/CAM

Testing a submarine design before production.

- Revision Link: Computer Aided Design (CAD)
- Key Focus: For A-Level, focus on FEA (Finite Element Analysis) and CFD (Computational Fluid Dynamics) to test how the submarine handles water pressure.

5. Total Quality Management & Gauges

TQM and Go/No-Go gauges.

- Revision Link: Quality Control - Gauges and Templates

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- Key Focus: TQM is a "company-wide" approach to quality, while a Go/No-Go gauge is a physical tool for rapid check on a production line.

6. Design Movements: Memphis

Characteristics of Postmodernism.

- Revision Link: Design Movements and Figures
- Key Focus: Look for: "Bright colors," "Geometric shapes," and "Form over function."

7. Mathematics in Design

Box plots, probability of faults, and Density/Mass calculations.

- Revision Link: Maths for Design and Technology
- Key Focus: Practice the formula Mass = Density × Volume. Note that in Q12, you must convert

mm^3
to
cm^3

(divide by 1,000).

8. Microelectronics & Material Evolution

The shift from Valves to Integrated Circuits and Thermosets to TPE.

- Revision Link: Modern Materials
- Key Focus: Understand how Integrated Circuits (ICs) allowed products (like the radio) to become significantly smaller and more portable.

9. User-Centered Design

Focus groups and designer research.

- Revision Link: User-Centred Design
- Why ask users To identify needs, test prototypes, and avoid expensive mistakes before mass production?

A-Level PD Tip:

When answering the 12-mark comparison questions use the **PEEL** structure **(Point, Evidence, Explain, Link).**