

Revision Topics

Mock 2: 06.03.23

Based on Year 10 new Year 11 learning.

Materials:

- Papers and boards
- Natural and manufactured boards
- Thermoset and Thermoplastic polymers
- Ferrous, non-ferrous metals and alloys
- Fibres and fabrics

Electronic and programmable components:

- Graphical conventions for communicating concepts: circuit diagrams, block diagrams and flowcharts.
- Symbols and components
- The 'systems' approach – input; process; output.
- Control component, semiconductors such as transistors IC and programmable microcontrollers
- Ohms law $V=I \times R$
- Resistor colour codes

Mechanical systems:

- Types of motion
- Levers
- Cam and follower
- Crank and slider
- Rack and pinion
- Spur gears
- Bevel gears
- Worm gears
- Pulley and belt
- Lifting pulleys
- Mechanical Advantage
- Velocity Ratio
- Rotational Velocity

Smart and new materials:

- Thermochromic materials
- Photochromic materials
- Shape memory alloy
- Quantum Tunnelling Composite
- Kevlar
- Nomex
- Rhovyl
- Polymorph

New and emerging technologies:

- Product life cycle
- Technology Push / Market Pull
- Planned obsolescence
- 6Rs and the impact of manufacturing on the environment
- Carbon footprint
- Sustainability