

Year 10 D&T Revision List

Electronic systems and programmable components:

How electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outputs. Electronic Circuit symbols

- Graphical conventions for communicating concepts: circuit diagrams, block diagrams and flowcharts.
- The 'systems' approach – input; process; output.
- Ohms law
- Principles of a control system:
 - input data from a sensor: light dependent resistor (LDR);
 - output devices light emitting diode (LED).
- The importance of feedback within the system.
- Familiar component symbols.
- Analogue and digital sensors as input components. The use of programmable components to embed functionality.
- Programmable microcontrollers used to control various inputs and outputs.
- Bipolar Transistor and Darlington Pair.
- Soft Soldering
- PCB production Process
- Electronic Diagrams – Systems diagram, Circuit diagram, PCB diagram, Flow diagrams.





Design and technology and our world:

The impact of new and emerging technologies:

- Market pull – Manufacturers responding to demands from the market;
- Technology push – Development in materials and components, leads to Tech companies pushing new products at consumers.
- The Product Life Cycle.
- Sustainability; meeting today's needs without compromising the needs of future generations.
- Advantages and disadvantages of using computer aided design (CAD).
- Advantages and disadvantages of the use of computer aided manufacture (CAM).
- The SIX R's of sustainability; rethink, reuse, recycle, repair, reduce and refuse.
- Carbon footprint.
- Planned obsolescence.



Materials:

The categorisation and properties of the following:

- Thermoforming and Thermosetting Plastics
- Manufacturing Processes used to form plastic products.
- Vacuum forming
- Injection moulding
- Blow moulding
- Line bending
- Extrusion
- Rotational moulding

Useful D&T Websites:

<https://www.bbc.co.uk/bitesize/examspecs/z4nfwty>

https://resource.download.wjec.co.uk/vtc/2016-17/16-17_1-4/website/index.html

https://www.technologystudent.com/despro_flsh/NEW_GCSE3.html