

YEAR 11 COURSE OPTIONS

Course Title	Electronics
Course Description	<p>Year 11 will focus on the exam element of the course (worth 40%).</p> <p>The exam will be in two sections. Section A is design based and will be set around a topic set by the exam board.</p> <p>Section B covers general theory work including materials, processes, components, circuits and programming.</p>
Course Content	<p>Term 1 and 2: Materials: Pupils will look at different types of plastics, woods and metals and how they can be used to house electronic products securely. Production methods: Pupils will look and how materials can be shaped, cut and formed to house products; including CAD CAM and PCB designing. Basic Electronics: Pupils will study circuit symbols, battery types, Resistors (including ohm's law), sensors (heat and light), capacitors and LEDs. Transistors: students will look at transistors, Thyristors, motors and sound devices and how they can be used in an electronic product.</p> <p>Term 3 and 4: Integrated Circuits: Students will study 555 timer circuits, operational amplifier circuits, logic gates and counter circuits. This includes how these circuits can be used to create products and how to adjust and customize to their own settings. Programming: Students will look at how programming can be used to make a circuit carry out specific tasks. The programming will mostly be flow chart based with some use of basic. Exam theme: Pupils will work on exam preparation for the design section of the exam paper. This involves a design brief/ topic area set by the exam board that pupils can investigate and prepare for.</p> <p>Term 5 and 6: Exam Skills: Pupils to work on revision techniques with a focus on exam question answering for both written questions and any calculations they may need to use.</p>
Extra-Curricular Opportunities	GCSE support sessions Thursday afterschool and a drop in session one day per week.
Useful Websites	
Important Information	<ul style="list-style-type: none"> • Links to programming, electronic, electrical and engineering courses post GCSE. • Links to A-level Product Design
Provision For Most Able	<p>Opportunity to study detailed circuits in depth; 555 timer, Op Amps, Counters.</p> <p>Development of detailed programming skills; use of either flow charts or basic.</p> <p>Demonstration of design and development skills when preparing for design section questions.</p>
Assessment	<p>Regular setting of past paper questions for each topic or theme.</p> <p>2 PPE exams</p>