

Saffron Walden County High School Curriculum

CURRICULUM SUMMARY



SAFFRON WALDEN
COUNTY HIGH SCHOOL

Year 12		AUTUMN TERM		SPRING TERM		SUMMER TERM	
		TERM 1A	TERM 1B	TERM 2A	TERM 2B	TERM 3A	TERM 3B
Physics	KNOWLEDGE DOMAIN – teacher 1	<p>Module 2 Foundations of Physics – Quantities and SI units, Scalars and Vectors, Resolving Vectors</p> <p>Module 3 Motion – Distance and speed, displacement and velocity, acceleration, motion graphs, equations of motion, projectile motion, stopping distance, freefall and g</p>	<p>Module 3 Forces in Action – Force mass and weight, centre of mass, moments, couples and torque, density and pressure, Archimedes' principle</p>	<p>Module 3 Laws of motion and momentum – Newton's laws of motion, linear momentum, Impulse, Collisions in two dimensions</p>	<p>Module 3 Work, Energy, and Power – Work done and energy, conservation of energy, kinetic and gravitational potential energy, power and efficiency</p> <p>Module 3 Materials – Springs and Hooke's law, elastic potential energy, deforming materials, stress-strain and the young modulus</p>	<p>PAG 12 – Research and Presentation endorsed practical work</p>	Revision and CPAC skills
	KNOWLEDGE DOMAIN – teacher 2	<p>Module 4 Waves 1 – Progressive waves, wave properties, reflection and refraction, diffraction and polarisation, intensity, electromagnetic waves, polarisation of electromagnetic waves, refractive index, total internal reflection</p>	<p>Module 4 Waves 2 – Superposition of waves, interference, the young double-slit experiment, stationary waves, harmonics, stationary waves in air columns</p> <p>Module 4 Electrical Quantities – Current and charge, moving charges, mean drift velocity, potential difference and electromotive force</p>	<p>Module 4 Electrical Quantities (cont.) – resistance and resistivity, Kirchhoff's laws</p> <p>Module 4 Circuit Analysis –The electron gun, I-V characteristics</p>	<p>Module 4 Circuit Analysis – Diodes, the thermistor, the LDR, electrical energy and power, paying for electricity combining resistors, analysing circuits, internal resistance, potential divider circuits, sensing circuits</p>	<p>Module 4 Quantum Physics –The photon model, the photoelectric effect, Einstein's photoelectric effect question, wave-particle duality</p>	

SKILLS
DEVELOPED
THROUGH
THE
KNOWLEDGE
AND
ENQUIRIES
TAUGHT
THIS HALF
TERM

Practical skills are revisited and refined throughout the course. These are assessed as part of CPAC required practicals and also in the written exams. Students must keep a formal and chronological folder of the practical work undertaken.

<https://www.ocr.org.uk/Images/599951-practical-activities-support-guide.pdf>

Maths skills are developed throughout the Physics course. The details of the mathematical requirements are detailed on p.69-75 of the OCR A Physics specification

The stated assessment objectives are:

AO1: Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.

AO2: Apply knowledge and understanding of scientific ideas, processes, techniques and procedures:

- In a theoretical context
- In a practical context
- When handling qualitative data
- When handling quantitative data

AO3: Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to:

- Make judgements and reach conclusions
- Develop and refine practical design and procedures.