



PHYSICS: Curriculum Overview

Year 10

Term	Topic studied	What will I learn?	How will I be assessed?
Year 10 Autumn	Forces & Motion	Speed, velocity Acceleration Motion graphs - displacement-time & velocity-time Equations of Motion Newton's Laws of motion Investigating force & acceleration Momentum & Collisions Potential and kinetic energy interchange. Work done & power. Stopping distances	Practical assessment - Force acceleration Practical assessment - Hooke's Law Equations assessment - acceleration Equations assessment - $F=ma$ Equations assessment - Work and Energy Equations assessment - Hooke's Law
	Forces & Extension	Force and extension Investigating Hooke's Law Force - extension graphs. Elastic Plastic behaviour, elastic limit. Spring constant & Strain Energy.	Graph skills assessment - distance-time graphs Graph skills assessment - velocity-time graphs Test assessment - Objective test Test assessment - Structured Questions Test
Year 10 Spring	Electric circuits	Circuit symbols and circuit diagrams Current, $Q=It$, ammeter, current law Potential difference, $V = E/Q$, voltmeter, voltage law Ohm's law & VI characteristics Resistance, resistors in series, Components - filament bulb, diode, LDR, thermistor Potential dividers. Electric power and energy	Practical assessment - Ohm's Law Practical assessment - VI characteristics Practical assessment - Factors affecting resistance Practical assessment - investigating fuses Equations assessment - Ohm at last Equations assessment - Power
	Static Electricity	Positive and negative charge, charging by friction, behaviour of charged objects, electric field shapes, Uses of charge - paint spray, smoke precipitator, Dangers of charge - explosions and shocks	Test assessment - Objective test x3 Test assessment - Structured Questions Test x3
	Domestic Electricity	Mains supply & mains circuit, 3 pin plug Fuses and circuit breakers Earth wire and double insulation Electrical energy, the kWh and paying for electricity.	
Year 10 Summer	Radioactivity	Radioactive emissions, their properties and effects on the nucleus. Detecting radioactivity, decay equations, isotopes. Background radiation & radioactive dose, Decay curves and half-life.	Practical assessment - radioactive decay simulation. Skills assessment - Radioactive decay
	The Earth in Space	Orbits and the effect of gravity on motions of planets. The solar system, Stars and the star cycle. The universe, big bang, red shift, cosmic radiation	Equations assessment - Electromagnetic force Equation assessment - transformer turns ratio
	Electro-magnetism part 1	Electromagnetic effect and electromagnets The motor effect, $F=BIL$, Fleming left hand rule, the corkscrew rule, the dc motor and commutator. Electromagnetic induction, ac generators Loud speakers and microphones The transformer, transformer power, transformer equations.	Test assessment - Objective test Test assessment - Structured Questions Test

