

KS4 Year 10 Physics Curriculum

Curriculum Intent: We seek through an ambitious and engaging curriculum to develop a sense of curiosity to wonder why and how things work, and to provide skills and knowledge to find the answer. The curriculum is spiralled to introduce and build on key scientific concepts to help students understand complex ideas enriched by opportunities outside the classroom.

Physics provides a fundamental building blocks to understanding of chemistry and biological systems. Energy is the currency of the universe and is the common thread throughout all of Physics. This thread then feeds itself into chemistry and biology on the nano/macro scales/systems/particles. The links then become more about real world applications.

		Spring Term	Summer Term
Main Topic	P3 Particle model of matter	P4 Radioactivity	P2 Electricity
Key Concepts	Density States of matter and internal energy Specific latent heat Specific heat capacity practical Gas pressure and temperature Gas pressure and volume	Structure of the atom Discovery of the nucleus Types and properties of nuclear radiation Nuclear equations Half life Nuclear medicine Nuclear fission Nuclear fusion	Static electricity Current and charge Potential difference and resistance Current-potential difference graphs LDRs and thermistors Series and parallel circuits Mains electricity Electrical power National grid
Curriculum links	C2 Changes of state P1 Thermal energy	C1 Atomic structure P6 Waves	8SP3 Electricity P7 Electromagnets
Cross-curricular links			Design and technology Computer systems
	Using models Explaining theories. Describing trends Graph skills Observations Methods Choosing equipment Conclusions Evaluating Variables. Graph skills Choosing appropriate equipment Resolution Calculations	Using model Explaining theories. Describing trends Graph skills Observations Writing equations Writing equations Variables. Graph skills Calculations Units Calculating gradients.	Using model Explaining theories. Describing trends Graph skills Observations Writing equations Methods Choosing equipment Conclusions Evaluating Conclusions Writing equations Variables. Graph skills

		Units Unit conversion Calculating gradients.		Choosing appropriate equipment resolution Calculations Units Unit conversation Calculating gradients.
		Density Mass Volume Intermolecular Solid Liquid Gas Melting Boiling Evaporating Freezing Condensing Temperature Heat Latent Pressure Collision	Nucleus Atom Alpha particle Beta particle Gamma ray Ionising Shielding Mutation Cancer Half life Random Spontaneous Fission Fusion	Electron Charge Current Potential difference Voltage Resistance Power Coulomb Amp Volt Ohm Watt Diode Thermistor Ammeter Voltmeter Series Parallel Transformer Efficiency
			Atomic weapons-Hiroshima and Nagasaki Nuclear medicine	Understanding of our electrified world and the National Grid Wiring a plug and changing a fuse
		Material scientist Material engineer Science journalist Patent examiner	Nuclear scientist/engineer Radiographer Health and safety officer Science journalist Astronomer Consultant	Electronic/electrical engineer Computer systems engineer Telecommunications Physicist Electrician Lighting technologist Renewable energy engineer
		P1 and P3 CKT Molecules and matter	P4 CKT Molecules and matter	P2 KMP Electricity P2 CKT Electricity