Y11 PHYSICS

SCIENCE AT YARDLEYS
INTENT: Science helps students gain an understanding of the world around them, from the micro-level of particles and atoms to the macro-level of our expanding universe. It encourages students to question and enquire in order to learn more. We want our students to acquire the scientific knowledge and skills to meet their academic, practical and "real life" challenges of the future.
Y11 Physics
In year 11 the students will first build upon their work on electricity from year 10 by looking at some of the physics that follows on from this and the links between electricity and magnetism. Finally, the students will consider matter in terms of particles and how materials can be stretched and squashed.

YEAR 11

	Static Electricity	Magnetism and Motor Effect	Electromagnetic Induction	Particle Model	Forces and Matter
SUBSTANTIVE KNOWLEDGE	• Electrical charge. • Static electricity. • Dangers and uses of static electricity. • Electric fields.	• Magnets and magnetic fields. • Electromagnets • Magnetic forces and motors. • Fleming's hand rules.	• How a current can be induced in a circuit. • The National Grid • Transformers	• Particles and density. • Energy and changes of state. • Energy calculations. • Gas pressure related to temperature and volume.	• Bending and stretching. • Extension and energy transfers. • Pressure in fluids.
DISCIPLINARY KNOWLEDGE	• Drawing and interpreting electric fields.	• Calculating using equations. • Using Fleming's hand rules. • Find a magnetic field with a compass. • Drawing and interpreting magnetic fields.	• Equations with four terms comparing a before and after state. • Evaluating advantages of using AC for the National Grid.	• Equations with four terms comparing a before and after state. • Identifying where anomalies may arise from.	• Calculating using equations. • Interpreting graphs.