

Y10 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.

Y10 Physics

Year 10 the students will study the science of very small objects in radioactivity, then very large objects in astronomy. They will then study some more complex work in energy and forces before learning the fundamentals of electric circuits.

YEAR 10

	Radioactivity	Astronomy	Energy (Forces doing work) & Forces and their effects	Electricity and circuits
SUBSTANTIVE KNOWLEDGE	<ul style="list-style-type: none"> Atomic models and their history. Types of radiation and properties. Half-life. Uses and dangers of radiation. Nuclear power. 	<ul style="list-style-type: none"> The Solar System Gravity and orbits. Life-cycle of stars. Red-shift and the origins of the universe. 	<ul style="list-style-type: none"> Work and power. Objects putting forces on each other. Vector diagrams. Rotational forces. 	<ul style="list-style-type: none"> Electric circuits. Current, voltage, power, resistance. Electricity transferring energy. Electrical safety.
DISCIPLINARY KNOWLEDGE	<ul style="list-style-type: none"> Measuring radiation with a Geiger counter. Control variables and accounting for background radiation. Interpreting half-life graphs. 	<ul style="list-style-type: none"> How evidence changes our understanding of the universe. Standard form and new units such as light years. 	<ul style="list-style-type: none"> Drawing vector diagrams. Use of different scales in drawings. Drawing and interpreting gravitational field diagrams. 	<ul style="list-style-type: none"> Calculating using equations. Interpreting graphs. Improving experimental accuracy. Developing models and evaluating their strengths and weaknesses.