

KS4 Curriculum Overview (GCSE PHYSICS)

YEAR 10

Year 1 GCSE/BTEC Option Subjects

TERM 1 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Particles at work: P7 Radioactivity (continued) Forces in action: P8 Forces in balance Particles at work: P4 Electric circuits	<p>P7 Identification of alpha, beta, and gamma radiation emission. Evaluate the dangers of exposure to radioactivity. Peer review. Undertaking half-life calculations.</p> <p>P8 Application of math skills to situations where forces are in balance.</p> <p>P4 Circuit design. Calculations involving power, resistance p.d, current and charge flow.</p> <p>Math Link - Drawing and interpreting graphs, half-life calculations. Math Link – vectors and scalars, parallelogram of forces, resolution of forces. Math Link – subject of the formula, standard form, significant figures.</p>	<p>Career links</p> <p>Nuclear Medicine Radiologist, Radiocarbon dating e.g., archaeologist, historian, forensic scientist. Architect, mechanical engineer, gymnast, pilot, vehicle design. Electrician, product design, electronics, electrical engineer.</p> <p>British Values Mutual Respect and Tolerance: Students learn about scientific discoveries from a diverse range of people from our culture and other cultures, e.g., Curie, Becquerel, Rutherford, and Bohr. Students learn about the continual evolution of scientific ideas which occurs through the acceptance that different people have different ideas about a concept, e.g., the model of the atom. Rule of Law: Regulations regarding the safe storage and disposal of radioactive waste. Students follow laboratory rules for the safety of all.</p>

TERM 2 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Forces in action: P8 Forces in balance (continued) Particles at work: P4 Electric circuits (continued) P5 Electricity in the home Forces in action: P9 Motion	<p>P8 and P4 refer to Term 1 above.</p> <p>P5 Wiring a plug. Choosing a fuse. Comparing appliances that do the same job.</p> <p>P9 Drawing and interpreting motion graphs. Undertaking calculations involving velocity and acceleration.</p> <p>Math Link – manipulation of data, unit conversion. Math Link – calculating a gradient, area of regular shapes.</p>	<p>Career links Electrician, electrical engineer. Forensic Road Traffic Accident Engineer, Racing car driver.</p> <p>British Values Rule of Law: Regulations regarding the National Grid and delivering energy to homes. Students follow laboratory rules for the safety of all. Laws relating to speed limits.</p>
TERM 3 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Particles at work: P5 Electricity in the home (continued) Forces in action: P9 Motion (continued) P10 Force and Motion	<p>P5 and P9 refer to Term 2 above.</p> <p>P10 Practical skills: Investigating forces and elasticity, Graph plotting with lines of best fit. Identifying relationships between variables.</p> <p>Math Link – manipulation of data, unit conversion, graph drawing skills, drawing a line of best fit, trends and relationships.</p>	<p>Career links Vehicle crash test engineer, Road safety data analyst, Car manufacturing.</p> <p>British Values Rule of Law: Students learn about the need to regulate road worthiness of vehicles (MOT), the need for speed limits and safety features e.g., seatbelts and airbags.</p>

TERM 4 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Forces in action: P10 Force and Motion (continued) P11 Force and pressure	P10 refer to Term 3 above. P11 Use of the pressure equation. Explain how to use a U tube to find out the density of sea water. Practical skills: Investigating upthrust and flotation.	Career links Sea Captain, boat pilot, aerospace engineer, automotive industry British Values Rule of law: plimsol line.
TERM 5 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Forces in action: P10 Force and Motion (continued) P11 Force and pressure (continued)	P10 and P11 refer to Term 3 above.	
TERM 6 TOPIC/s	*Key Skills/Subject Links	*Career links & BV
Year 10 Exams Y10 Work experience P12 Wave properties	P12 Practical techniques to investigate the speed of waves in a string and in water. Setting up a standing wave on a string.	Career links Sound mixer, audio engineer, acoustic engineer. British Values Individual Liberty: There are opportunities for students to work independently and make choices in a safe environment when carrying out investigations.