



KS4 Physics – Year 10

	Key content (knowledge)	Key skills	Assessments	Challenge and enrichment
Autumn half term 1	Static electricity and electric fields Circuit electricity Current Potential difference Resistance Series and parallel circuits Characteristics of components in a circuit	Use and rearrangement of equations Practical skills: building a circuit using a circuit diagram Investigating factors affecting resistance.	End of topic test on the particle model of matter	Use the PhET online simulator to build your own circuits Circuit Construction Kit: AC - Virtual Lab - RLC Circuit AC Circuits Kirchoff's Law - PhET Interactive Simulations Explore the Physics of electric cars and the recharging technology Electric vehicles: all you need to know - Energy Saving Trust
Autumn half term 2	Electricity in the home Alternating current Domestic electricity Power, current, energy and pd, efficiency. Atomic structure Nuclear radiation, activity and half life Fission Fusion Hazards and benefits Use in medicine	Use and rearrangement of equations Interpreting graphs Evaluating risks and benefits Drawing scale diagrams	End of topic test on electricity in the home and radioactivity	Explore ideas about the future of nuclear fusion power: Nuclear Fusion Power - World Nuclear Association (world-nuclear.org) Do a virtual tour of a nuclear power plant: Watch the latest virtual tour of Hinkley Point C EDF (edfenergy.com) Find out about careers in nuclear medicine: Nuclear medicine Health Careers

Spring half term 1	Vectors and scalars Moments Levers and gears Resultant forces Resolving forces Motion Motion graphs	Use and rearrangement of equations Drawing scale diagrams Drawing and interpreting graphs	End of topic test on forces and motion	Find out more about levers and gears: Levers and Gears — Isaac Physics Explore motion by watching slow motion: BBC One - Richard Hammond's Invisible Worlds, Speed Limits - Clips
Spring half term 2	Forces and acceleration Weight Momentum Forces and impulse Forces and elasticity	Use and rearrangement of equations Practical skills: Investigating the link between force and acceleration Practical skills: Investigating the relationship between force and extension of a spring	End of topic test: more forces	Investigate different car safety features and the Physics behind them. Find out about careers in forensic science, e.g. collision investigator: nationalcareers.service.gov.uk/job-profiles/road-traffic-accident-investigator
Summer half term 1	Pressure in solids, liquids and gases Upthrust and flotation Nature and properties of waves Reflection and refraction	Use and rearrangement of equations Use and rearrangement of equations Practical skills: Investigating reflection and refraction. Drawing ray diagrams	End of topic test: Forces and pressure	Explore the Physics of scuba diving: The Physics of Scuba Diving WIRED Find out how different lenses are used in prescription glasses: The Science of Eyeglasses Williams Eye Works Find out about becoming an optometrist: nationalcareers.service.gov.uk/job-profiles/optometrist

Summer half term 2	Sound Ultrasound Seismic waves	Interpreting data Using equations	End of Year exam	Find out about the work of seismologists Seismologist Explore Careers National Careers Service
--------------------	--------------------------------------	--------------------------------------	------------------	--