



Half-term	Y9 Content Covered (plus N10)	Y10 Content Covered	Y11 Content Covered
<b>Autumn 1</b>	<b>Energy part 1 –</b> Stores, Conservation of energy, efficiency, Insulation and conduction, Insulation investigation, Power, use of standard form and prefixes, uncertainty of a set of data.	<b>Waves part 1 –</b> Classify waves, Measure waves, Reflection and absorption, Refraction and transmission, Reflection and refraction investigations, Sound waves and ultrasound, SONAR and seismic waves.	<b>Particle model of matter –</b> Density, Kinetic theory, Changes of state and internal energy, Specific Heat Capacity, Specific Latent Heat, Particle motion in a gas, Pressure in gases, Boyle's Law. <b>Atomic physics and radiation part 1 –</b> Structure of atoms, Mass number, atomic number and isotopes, Nature and discovery of radioactivity.
<b>Autumn 2</b>	<b>Energy part 2 –</b> Energy resources for the generation of electricity.	<b>Waves part 2 –</b> Electromagnetic spectrum, Uses and dangers of electromagnetic waves, comparisons of all electromagnetic waves, visible light spectrum, lenses, eye and camera comparisons.	<b>Atomic physics and radiation part 2 –</b> Alpha, beta, gamma and neutron radiation, Background radiation sources, Nuclear equations, Atomic model development, Half-life, Radioactive hazards, contamination and irradiation, Nuclear fission, Nuclear power stations, Nuclear fusion.
<b>Spring 1</b>	<b>Forces and motion part 1 –</b> Speed, acceleration, motion graphs Vectors and scalars, contact and non-contact forces, Resultant force and terminal velocity, Newton's 1st and 2nd laws.	<b>Electricity and circuits part 1 –</b> Electric fields and charges, Drawing basic circuits, Electrical charge and current, Resistance and Ohm's law, Resistance of a wire, Non-ohmic conductors, Series and parallel connection rules.	<b>Space physics –</b> Galaxies and Stellar formation, Stellar evolution, Chemical element formation, Our solar system, Orbital motions. Satellites, Doppler effect and red shift The big bang theory, evidence of faster expansion.
<b>Spring 2</b>	<b>Forces and motion part 2 –</b> Newton's 3rd law, $F=ma$ investigations, Weight and mass, Parachute investigation, Forces and elasticity, Hooke's law investigation.	<b>Electricity and circuits part 2 –</b> Semiconductor components, AC and DC, Cables and plugs, Earthing, Insulation, fuses and circuit breakers, Electrical energy and power, National Grid.	<b>Revision part 1 –</b> Examination-focussed revision.
<b>Summer 1</b>	<b>Linking Forces and energy part 1–</b> Work done as an energy transfer, Stopping distances, Momentum Conservation of momentum, Rate of change of momentum.	<b>Magnetism part 1 –</b> Magnetic poles. Induced and permanent magnetism, Electromagnetism and applications, Motor effect and calculations, Electric motors.	<b>Revision part 2 –</b> Examination-focussed revision. Paper 1 examination.
<b>Summer 2</b>	<b>Linking Forces and energy part 2 –</b> Calculating energy using equations: kinetic energy, work done, gravitational potential energy, elastic energy, Moments and levers, Pressure and density, Pressure in a fluid, Floating and sinking, Atmospheric pressure.	<b>Magnetism part 2 –</b> Loudspeakers, Generator effect, Microphones, Transformers.	Study leave. Paper 2 examination.

