



Year 11 Curriculum Grid – 3 teachers

Combined Science

Year/Term	Unit	Intent
Curriculum purpose		<ul style="list-style-type: none"> • Ensure students have a secure understanding of the key concepts of Biology, Chemistry and Physics building on knowledge from KS3. • Encourage students to carry out practical work safely with increasing independent skills. • Enthuse students with a love of the Sciences by incorporating a holistic approach and relating concepts to actions and behaviours.
Autumn	CB8 – Exchange and transport in animals CB9 – Ecosystems and material cycles (start) CC13 - Groups in the periodic table CC14 - Rates of reaction CP10 – Magnetism and the motor effects CP11 – Electromagnetic induction	<ul style="list-style-type: none"> • Explain the structure of the blood vessels, heart and blood • Compare the processes of aerobic and anaerobic respiration • Describe the different levels of organisation from individual organisms to the whole ecosystem • Explain how some elements can be classified based on their position in the periodic table • Explain the relative reactivity of Groups 1, 7 and 0 • Explain how reactions occur using collision theory • Explain how the addition of a catalyst increases the rate of a reaction in terms of activation energy • Describe the shape and direction of the electric field • Explain the difference between permanent and induced magnets • Explain where and why step-up and step-down transformers are used in the transmission of electricity in the national grid
Spring	CB9 – Ecosystems and material cycles (continued) CC15 - Heat changes in chemical reactions CC16 – Fuels CP12 – Particle model CP13 – Forces and matter	<p><i>Students will sit their PPEs at the start of this term</i></p> <ul style="list-style-type: none"> • Explain the positive and negative human interactions within ecosystems and their impacts on biodiversity • Describe how different materials cycle through the abiotic and biotic components of an ecosystem • Show knowledge and understanding of the energy transfers during exothermic and endothermic reactions • Describe processes using hydrocarbons to extract useful products • Explain the pressure of a gas in terms of the motion of its particles • Explain the effect of changing the temperature of a gas • Explain why atmospheric pressure varies with height above the Earth • Describe how pressure in fluids increases with depth and density
Summer	CC17 - Earth and atmospheric science CB1-CB9 revision CC1-CC17 revision CP1-CP13 revision	<ul style="list-style-type: none"> • Explain how the Earth's atmosphere and oceans were formed • Evaluate the evidence for human activity causing climate change • Practise examination technique and time management • Revisit core practicals and assess understanding • Prepare for the public examinations • Students are encouraged to become more reflective of their learning through self-assessment of their examination answers • Students will have frequent exposure to exam style questioning and practice papers • Intervention sessions will allow students to revisit topics from Years 9 and 10 up until the summer examinations