

Year Group: 11	Subject: Combined Science	Term: Autumn 2021
Topic	Key Learning points	Assessment
Biology: Plant structures and Animal coordination	<p><i>End Point: To understand transport systems in plants and how photosynthesis can be measured. To understand homeostasis in animals.</i></p> <ul style="list-style-type: none"> • Know how to describe photosynthesis and explain the factors that affect rate of photosynthesis. • Know how plants absorb water and mineral through the roots and how it is transported via transpiration and xylem vessels. • Know how sucrose is transported in phloem vessels through translocation. • Know the structure and general function of the endocrine system to include names of glands and hormones. • Know how blood glucose is regulated and the importance of insulin. • Know how diabetes is a malfunction in blood glucose regulation and that it is treated with exercise, diet and insulin injections depending on the type. • Know the sequence of the menstrual cycle and how hormones control different events such as ovulation. • Know how hormones such as adrenaline and thyroxine contribute to changes in metabolism. 	<p>Students will be formatively assessed during each topic by past paper question end of topic tests completed in lesson time.</p> <ul style="list-style-type: none"> • Students will complete a variety of consolidation homework throughout the term
Chemistry: Rates of Reaction	<p><i>End Point: To understand the features of chemical reactions and how we measure them.</i></p> <ul style="list-style-type: none"> • Know that the rate of a reaction is the speed at which reactants are converted into products. • Know that the rate of a reaction can be measured by measuring change in mass of the reactants or products in a reaction. • Know how factors such as concentration, temperature, pressure and surface area can affect the rate of reactions. • Know that reactions can be classed as endothermic or exothermic depending on whether they absorb or release energy. • Know that catalysts reduce the activation energy of a reaction thereby speeding it up. • Know that dynamic equilibrium occurs in a reversible reaction where forward and backward reactions balance each other but that this can only occur in a closed system. 	<ul style="list-style-type: none"> • After each end of topic test there will be an opportunity for students to review their understanding • Teachers will provide students with targeted feedback, based on their test performance
Physics: Electricity and Magnetism	<p><i>End Point: To understand how force fields exert a force on particles and how the components of an electrical circuit function.</i></p> <ul style="list-style-type: none"> • Know the components in an electrical circuit and how they function. • Know that current is the flow of electrons in a circuit and that potential difference is the energy difference between two points in a circuit. • Know that resistance slows down the current and can lead to heating of components. • Know that power is a measure of transfer of energy per second. • Know calculations involving current, potential difference, resistance and power. • Know that magnets exert a force on magnetic objects within the forcefield surrounding the magnet. • Know that an electromagnet is where a current is passed through a coil of wire surrounding an iron core creating a magnetic field. • Know that a transformer uses electromagnetic induction to vary the voltage in different circuits. • Know that a step-up transformer increases the voltage of a circuit whilst decreasing the current and vice versa for a step-down transformer. 	<p>At the end of the term students will have a summative assessment. This will be a 60-mark exam paper (20 marks from each discipline), which will be marked by their teacher.</p>