

KS4 – Year 10 – Combined Science GCSE

Term	Topic Titles	Brief Overview
1	B3 - Infection and response	Students learn about the 4 different types of pathogens and how these cause disease in plants and animals. Students also learn how the body uses barriers to protect against disease.
	B4 - Bioenergetics	Students learn about the process of photosynthesis in plants and the process of respiration in plants and animals.
	P4 - Atomic structure	Students delve into into the fundamental concepts of atoms and isotopes, nuclear forces and stability.
	C5 - Energy changes	Students study endothermic and exothermic reactions, the concept of activation energy, and the calculation of energy changes in chemical reactions.
	P5 - Forces	Students learn about how resultant forces cause accelerations, and how motion can be recorded and analysed. Students learn how forces are used for energy transfer in simple machines.
2	C6 - The rate and extent of chemical change	Students explore factors affecting reaction rates, including temperature, concentration, surface area, and catalysts, as well as the principles of dynamic equilibrium in reversible reactions.
	B5 - Homeostasis and response	Students learn how organisms maintain internal stability through control systems, including the nervous and hormonal systems, and their responses to stimuli from the environment.
	P6 - Waves	Students learn how oscillations transfer energy, and their uses and dangers. Students learn about the properties and uses of electromagnetic wave
	C7 - Organic chemistry	Students learn the structures, properties, and reactions of carbon-based compounds, including hydrocarbons, alcohols, and carboxylic acids.
	C8 - Chemical analysis	Students cover techniques for identifying and separating substances, including chromatography, qualitative analysis of ions, and the interpretation of results to determine the purity and composition of chemical samples.
	B6 - Inheritance, variation and evolution	Students learn about the mechanisms of inheritance, the causes and consequences of genetic variation, and the processes of natural selection and evolution by natural selection.
	P7 - Magnetism and electromagnetism	Students learn how electricity is inextricably linked to magnetism, and how these two phenomena interact.
3	C9 - Chemistry of the atmosphere	Students learn about the composition and evolution of the Earth's atmosphere, the impact of human activities on atmospheric composition, and the consequences of pollutants such as greenhouse gases and particulates.
	C10 - Using resources	Students learn about the sustainable use of Earth's resources, including the extraction and processing of materials, water treatment, and life cycle assessments to minimise environmental impact.