



Year 9 Curriculum Grid – 1 or 2 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	CB1 – Key concepts in Biology	<ul style="list-style-type: none"> Explain how the structures of eukaryotic and prokaryotic cells are related to their function Explain the importance of enzymes as biological catalysts
	CC1 - States of matter CC2 - Methods of separating and purifying substances	<ul style="list-style-type: none"> Describe the arrangement, movement and the relative energy of particles in each of the three states of matter Explain the experimental techniques for separation of mixtures
	CP1 - Motion	<ul style="list-style-type: none"> Explain the difference between vector and scalar quantities Interpret distance time graphs and velocity time graphs
	CB2 – Cells and control	<ul style="list-style-type: none"> Describe the stages in the cell cycle and the importance of mitosis Describe the structures and functions of the nervous system
	CC3 - Atomic structure CC4 - The periodic table	<ul style="list-style-type: none"> Describe the structure of an atom and isotopes Describe how Mendeleev arranged the elements in a periodic table Understand the different aspects of the modern periodic table
Spring	CP2 – Forces and motion	<ul style="list-style-type: none"> Recall Newton’s Laws and use them in appropriate situations
	CB3 – Genetics	<ul style="list-style-type: none"> Outline the structure of DNA and explain its role Describe the impacts of gene mutations and the outcomes of the Human Genome Project
	CC5 - Ionic bonding CC6 - Covalent bonding CC7 - Types of substance	<ul style="list-style-type: none"> Explain how ionic and covalent bonds are formed and the properties shown by these compounds Describe the structure of simple polymers, graphite, diamond, fullerenes and graphene and explain their properties Explain the properties of metals
	CP3 – Conservation of energy	<ul style="list-style-type: none"> Describe how energy is transferred between stores of energy Compare the advantages and disadvantages of energy resources
Summer	CB4 – Natural selection and genetic modification	<ul style="list-style-type: none"> Describe the work of Darwin in the development of the theory of evolution by natural selection Evaluate the benefits and risks of genetic engineering and selective breeding
	CP4 – Waves CP5 – Light and the electromagnetic spectrum	<ul style="list-style-type: none"> Explain, with the aid of ray diagrams, reflection and refraction Describe some uses and dangers of electromagnetic radiation Define and use appropriate terms associated with waves Explain uses of ultrasound and infrasound
	CB1-4, CC1-7 and CP1-5 revision	