Curriculum Summary Documents

Year 11 Separate Science

Module/Unit of Learning	Taught During	What will students learn?	How does this deepen understanding and enrich experience?	Links to other Subjects
B5 Homeostasis and Response **Biology 1**	**Autumn 1**	Students will learn all about how we respond to changes in our environment to maintain optimal internal conditions. Students will study the nervous system and endocrine system to understand how they allow us to respond to different stimuli. Later in the module students will build on work they did in Y7 and study reproductive hormones. Students learn how the brain and eye work.	Students have covered the basics of nerve cell adaptations, menstrual cycle and hormones throughout Y7, 8 and 9. Students' knowledge is stretched and deepened by building on these fundamentals. Students also cover the mechanics of how we learn which is beyond the specification.	**PSHE**
C6 Rate and extent of Chemical reactions **Chemistry 1**	**Autumn 1**	In this unit, students learn all about how to increase the speed of chemical reactions to maximise the products formed. This is particularly useful in industries where they rely on their products to make profit. There are lots of opportunities for students to apply their knowledge to practical situations to observe factors that affect the rate of reaction.	Using practical tasks and observations develops students' scientific skills and provides opportunities for them to think more like a scientist.	**Maths**
P5 Forces **Physics 1**	**Autumn 1**	Students will learn all about forces and how they interact with objects and the effect on the objects motion. Students will also apply Newton's laws of motion to different scenarios such as skydivers. Triple students study waves (please see above for more information).	Application of knowledge to real world examples such as a skydiver or Usain Bolt's 100m world record requires a higher level of understanding.	**Maths**
B7 Ecology **Biology 2**	**Autumn 2**	Classification of living organisms. Adaptations, interdependence and competition. Organisation of an ecosystem. How materials are cycled. Biodiversity and the effect of human interaction on ecosystems.	Apply sampling techniques learnt in the classroom to a different habitat.	**Geography** **Animal care**
C7 Organic **Chemistry 2**	**Autumn 2**	Carbon compounds as fuels and feedstock	Students apply their knowledge of fractional distillation and cracking to be able to compare them. Students are also taught how to write and balance symbol equations showing cracking. Knowledge of covalent molecules from the previous module is used to deepen students understanding.	**Geography**

C8 Chemical Analysis **Chemistry 3**	**Autumn 2**	Students will learn all about how scientists analyse chemicals, mixtures and formulations using techniques such as chromatography and flame testing.	Students can apply these techniques to real life scenarios and careers. This module helps students to develop a range of analytical skills.	**Maths**
P6 **Waves** **Physics 2**	**Autumn 2**	Waves in air, fluids and solids Electromagnetic waves	Application of EM waves to wider uses requires a higher level of understanding.	**Mathematics** **Music** **Child Development**
B6 Inheritance, variation and evolution **Biology 3**	**Spring 1 & 2**	Reproduction The development of understanding of genetics and evolution	History of The Genome Project. Students will follow the evolution of MRSA and antibiotic resistant bacteria outbreaks in local Cornish hospitals.	**Child Development** **PSHE**
C9 **Atmosphere** **Chemistry 4**	**Spring 1**	The composition and evolution of the Earth's atmosphere. Carbon dioxide and methane as greenhouse gases. Common atmospheric pollutants and their sources.	Students will have the opportunity to discuss and research how human activities impact the atmosphere and the Earth's natural resources.	**Geography** **Physics**
C10 **Resources** **Chemistry 5**	**Spring 1 & 2**	Using the Earth's resources and obtaining potable water. Life cycle assessment and recycling	Students explore how human activities impact the atmosphere and the Earth's natural resources. We will also discuss how we can be more sustainable.	**Geography**
P7 **Magnetism** **Physics 3**	**Spring 1**	Permanent and induced magnetism, magnetic, forces and fields The motor effect	Applying knowledge to everyday uses requires a high level of understanding. Some students will also use and manipulate the F=BIL equation.	**Mathematics**
P8 **Space** **Physics 4**	**Spring 2**	The classification of objects within our solar system. The name of our galaxy and our place within it. The birth of a star from its beginnings as a nebula to how it reaches main sequence. The lifecycle of small and large stars. The red shift of light provides evidence for the Big Bang model (theory) for the creation of the universe.	Builds on the prior knowledge of Space from KS3 and applies challenging concepts/theories to the history of the universe.	**Mathematics** **PSHE** **RE**
Summer 1 **Revision and preparation for GCSE exams**				