Curriculum Summary Documents
Year 10 Combined Science

Module/Unit of Learning	Taught During	What will students learn?	How does this deepen understanding and enrich experience?	Links to other Subjects
Particle Model **Physics 1**	**Autumn 1**	Students continue their physics journey by learning about particle model of matter and how this links to the density of objects and the energy required to change the state of matter.	Students will investigate the density of different objects and discuss the history behind calculating the density of irregular shaped objects	**Maths**
Infection & Response **Biology 1**	**Autumn 1**	Students return to biology content and learn all about communicable diseases and how our body's immune system works. Students then learn about how vaccinations, antibiotics and painkillers are used and developed.	Students can discuss the use of vaccines as well as the ethical issues surrounding drug testing.	**History** **PSHE**
Bioenergetics **Biology 1**	**Autumn 1**	Students will learn about the key biological processes of photosynthesis and respiration. They will then deepen their understanding by looking at how plants are adapted to maximise photosynthesis as well as studying the two types of respiration (aerobic and anaerobic).	Researching how farmers can maximise profits from their crops using knowledge of photosynthesis	**P. E**
Chemical changes & Energy changes **Chemistry 1**	**Autumn 2**	In these two chemistry modules, students cover the process of electrolysis as a way of separating metals and non-metals. Students also learn about endothermic and exothermic reactions and build on the knowledge they gained in Y8.	Students are required to link their knowledge of ionic compounds and metal reactivity into how electrolysis works. Students will construct energy level diagrams and calculate bond energies to show endo and exo reactions.	**Maths**
Atoms & Radiation **Physics 2**	**Spring 1**	Students will learn about how the atomic model was developed through the work done by Rutherford and Marsden. They will then look at radioisotopes, radioactive decay and half-life.	History of the atomic model. Students also have a chance to relate radioactive decay to the Chernobyl incident.	**History**
Quantitative Chemistry 2	**Spring 2**	Quantitative chemistry is all about calculating how much reactant or product is used or made during chemical reactions. Students will learn the skills and techniques used to tackle mathematical problems.	Students use the required practical of making a salt to apply their knowledge and skills of calculating the mass of reactants used and products formed	**Maths**
Rate and extent of Chemical reactions **Chemistry 3**	**Spring 2**	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**

Electricity **Physics 3**	**Summer 1 & 2**	In electricity students learn all about current, potential difference, resistance and how they behave in series and parallel circuits. Students will also learn about domestic appliances and mains electricity.	Electricity is a difficult concept to grasp for many students so visual models are used to help students have a good understanding of electricity.	**Maths**