Curriculum Summary Document

Year 8 - Science

Module/Unit of Learning	Taught During	What will students learn?	How does this help to build a broad and strong foundation?	Links to other Subjects
Working scientifically	**Autumn 1**	Continue to develop fundamental practical and working scientifically skills needed for the 5-year journey through science.	Having good scientific skills and being able to work safely are crucial for the rest of their science journey. These skills will be used throughout their 5 years.	**Maths**
Respiratory system **Biology Block 1**	**Autumn 1**	Students will learn how the process of diffusion links to gas exchanges in the lungs. We use this knowledge to learn about the impact of smoking on the body. They will then learn about the processes of cellular respiration and fermentation.	Students previously learnt about cells in Y7 which this module builds on. Understanding diffusion and respiration, fundamental biological processes, will allow students to comprehend more complex organ systems they study later in Y8 and Y9.	**P.E**
Chemical reactions **Chemistry Block 1**	**Autumn 1/2**	The purpose of this module is to develop their knowledge of different chemical reactions and how this affects the atoms of the elements and compounds involved.	In Y7 students learnt all about the fundamental knowledge of atoms, elements and compounds so this module deepens their understanding. Students will start to construct word and symbol equations which is a skill they will need at GCSE. This module also provides an excellent opportunity to continue to develop students practical and working scientifically skills.	**Maths**

Electricity **Physics Block 1**	**Autumn 2**	The purpose of this module is to give students the fundamental knowledge of series and parallel circuits as well as knowing what current, potential difference and resistance are	In Y10 students will study electricity to GCSE level. As electricity is such a conceptual topic, it is important that students know the fundamentals of current, potential difference and resistance. On top of this, students are introduced to circuits, how to buid and draw them.	**Maths**
Metals **Chemistry Block 2**	**Spring 1**	Students will learn about the reactivity series of metals and then delve into how the reactivity series can help us to determine how metals are obtained. Students will then look at how metals react with acids and displacement reactions.	Students learnt about the properties of metals and non-metals in 'the periodic table' module during Y7. This module enables students to recap that fundamental knowledge and then develop their understanding by looking at the reactivity series and extraction of metals. This also allows students to comprehend this to a higher level when it is studied in Y9.	
The Earth **Chemistry Block 2**	**Spring 1**	Students will learn about how the Earth is structured and then at the composition of the atmosphere. We will then look at how the carbon and water cycles impact the atmosphere and lithosphere. The module finishes with students learning about finite and renewable resources.	The atmosphere, cycles and resources are key processes and content required in Y9 chemistry and physics at GCSE level. Understanding the key processes in the carbon cycle is crucial to making links between these processes to human impacts in Y9.	**Geography**
Human body part 2 and Plants **Biology Block 2**	**Spring 2**	Students start by recapping their understanding of plant cells. We then look at plant reproduction and how plants are adapted to do a key process of photosynthesis. We finish the module by discussing the importance of the process of photosynthesis.	Students covered in Y7 the fundamentals of cells and how they are then organised into tissues, organs and organ systems in the human body. This module recaps the fundamentals of plant cells and then how they are organised into plant tissues, organs and organ systems – linking in photosynthesis and the role of stomata.	**Geography – Joint trip to Eden project**
Waves **Physics Block 2**	**Spring 2/ Summer 1**	This topic will enable students to understand the science behind sound waves (why we can hear) and light waves (why we can see).	Knowing the difference between transverse and longitudinal waves is fundamental to understanding how waves behave.	

Magnets **Physics Block 2**	**Summer 1**	Students will learn about magnets, electromagnets and how compasses work.	Magnets draws links between forces, energy and electricity. Having an understanding of magnets and electromagnets will allow students to comprehend more complex content such as motors in Y10.	**Maths**
Evolution	**Summer 1/2**	Students will learn about the basic structure of DNA and how this links to variation. We will then move onto studying about species and adaptations and how species evolve through the mechanism of natural selection	In Y10 students will learn in more detail about how variation leads to natural selection and speciation. This module gives students the strong foundational knowledge of key biological terms such as DNA and variation.	