

Science Curriculum Overview KS4 – Year 10

	Autumn	Spring	Summer
1	<p><b>Cell Biology</b> To develop understanding of human and plant cell biology, the building block of all living organisms on the planet.</p> <p>Identify features and functions of a prokaryotic and eukaryotic cell. Able to use estimation and relative size to calculate cell size Explain the importance of cell differentiation</p> <p>Life Skills –Understanding of how the body grows and develops. This allows pupils to understand how the world around them also develops. Students will understand complex ideas, including cell specialisation, cell differentiation and stem importance.</p>	<p><b>Infection and Response</b> Able to group communicable and non-communicable diseases. And explain methods to prevent and cure disease.</p> <p>Distinguish between viral/ Protist/ bacterial and fungal diseases whilst being able to state some characteristic of each. Describe the bodies’ response to disease. Explain disease prevention methods.</p> <p>Life Skills- Become conscious of methods to keep them safe and prevent illness or disease. Benefits of exercise in a healthy lifestyle Need for personal hygiene, vaccinations and Historical practises to cure some diseases. To understand why we should ‘catch it., kill it bin’.</p>	<p><b>Homeostasis</b> To Describe the process of maintaining a stable internal environment</p> <p>Recall keywords – homeostasis , receptor, effector Describe the process of the nervous system. Link homeostasis to kidney/eye/menstrual function.</p> <p>Life Skills – Able to understand how the body responds to imbalance. Students will learn to describe the process that impulses take in order to maintain the bodies’ normal state, including hormonal response and nerve response.</p>
2	<p><b>Organisation * Potential to move into Spring 1*</b> To understand the importance of different biological systems that takes place within the body.</p> <p>Identify an enzyme as a biological catalyst that speeds up reactions within an organism. Describe the function and purpose of the different organs that make up the circulatory system.</p> <p>Have a deeper understanding of why we breathe and the importance of the blood. Also the importance of healthy eating and how are bodies utilise food.</p>	<p><b>Bioenergetics</b> To Describe the process of how plants produce food and respire</p> <p>Recall the formula for photosynthesis. Describe the process of photosynthesis Describe some factors affecting photosynthesis</p> <p>Life Skills – This is ideal as students can use this knowledge to grow produce. This could promote students to consider gardening and agriculture as potential careers.</p>	<p><b>Inheritance</b> Explain the process of genetics in relation inheritance/ variation and evolution.</p> <p>Define what DNA stands for Describe how sex is determined Explain the evolutionary theory.</p> <p>Life Skills – It gives pupils an insight into how they became who they are today. It teaches pupils about the consequences of sex</p>

## Science Curriculum Overview KS4 – Year 11

	Autumn	Spring	Summer
1	<p><b>Ecological Relationships &amp; Nature Studies</b></p> <p>To explain that organisms only survive in a habitat where they have all the essentials for life and reproduction To know that that green plants can be subdivided into those with vascular tissues (xylem and phloem) and complex leaves with a waterproof cuticle, and those without.</p> <p>Classifying animals: vertebrates &amp; invertebrates Classifying green plants, preserving rainforests Habitats and adaptation</p> <p>To show sensitivity to living things in their environment. Students will understand the importance of organism within a community to sustain it.</p>	Revision	
2	Revision	Revision	