

## GCSE Biology – Key Stage 4

### Intent:

Science is changing our lives and is vital to the world's future prosperity; because of this all students should be taught essential aspects of the knowledge, methods, processes and uses of science. They should be helped to appreciate the achievements of science in showing how the complex and diverse phenomena of the natural world can be described in terms of a number of key ideas relating to the sciences which are inter-linked, and which are of universal application. Biology is the science of living organisms (including animals, plants, fungi and microorganisms) and their interactions with each other and the environment. The study of biology involves collecting and interpreting information about the natural world to identify patterns and relate possible cause and effect. Biology is used to help humans improve their own lives and to understand the world around them.

### Implementation:

	Term 1	Term 2	Term 3
Year 1	<b>Genes and DNA</b> Students learn to identify DNA sequences and the role of chromosomes within the human body.	<b>Reproduction and evolution</b> We focus on how DNA is replicated through fertilisation and how dominant genes affect our characteristics. We also look at how our DNA has changed through the process of evolution.	<b>Ecology</b> Students learn to identify adaptations within several species and how humans effect the ecosystem.
Year 2	<b>Communicable disease, plant disease, bioenergetics, respiration.</b> Students learn how diseases caused by viruses, bacteria, protists and fungi are spread in animals and plants.	<b>Evolution, Reproduction</b> In this section we discover how the number of chromosomes is halved during meiosis and then combined with new genes from the sexual partner to produce unique offspring.	<b>Ecology</b> In this section we explore how materials including carbon and water are continually recycled by the living world, being released through respiration of animals, plants and decomposing microorganisms and taken up by plants in photosynthesis.

*'You cannot teach a man anything; you can only help him discover it in himself.'* Galileo Galilei