



The curriculum for this stage of students' education has been designed to build upon their prior knowledge from GCSE Biology. A-level Biology will give you the skills to make connections and associations with all living things around you. Biology literally means the study of life and if that's not important, what is? Being such a broad topic, you're bound to find a specific area of interest, plus it opens the door to a fantastic range of interesting careers. Studying A-level Biology at university gives you all sorts of exciting career options, including: Doctor, Clinical molecular geneticist, Nature conservation officer, Pharmacologist, Research scientist, Vet, Secondary school teacher, Marine biologist & Dentist.

<p>HALF TERM 1: <u>energy Transfer in & between organisms</u></p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • How photosynthesis occurs by the light & dark reactions. • How energy is released in cells by respiration. • The structure & function of mitochondria. • The stages in aerobic respiration. • The stages in anaerobic respiration. • Comparison of aerobic & anaerobic respiration. • Food chains & energy transfers. • Productivity in habitats. • Nutrient cycles. • The use of natural & artificial fertilisers. • The environmental impact of using fertilisers. <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.</p>	<p>HALF TERM 2: <u>Organisms responding to changes in their internal & external environments</u></p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • How organisms respond to stimuli. • How plant growth factors work. • How a simple reflex action occurs. • Receptors in animals. • How heart rate is coordinated. • Nervous communication. • How nerve impulses are initiated and carried by neurons. <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.</p>	<p>HALF TERM 3: <u>Organisms responding to changes in their internal & external environments</u></p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • The action potential. • The structure & function of synapses. • The structure & function of skeletal muscle. • How homeostasis uses feedback loops. • Hormonal regulation of blood sugar levels. • Diabetes and its control. • The structure & function of the kidneys regulating water content in the body. • The role of hormones in osmoregulation. <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.</p>
<p>HALF TERM 4: <u>Genetics, populations, evolution & ecosystems</u></p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • How mono & dihybrid inheritance works. • Calculate probability in genetic crosses. • Sex-linkage & autosomal linkage. • Epistasis & Chi squared test. • Population genetics & Natural selection. • Effects of isolation on speciation. • Variation & competition affecting populations. • Conservation of habitats. <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress</p>	<p>HALF TERM 5: <u>The control of gene expression</u></p> <p>STUDENTS MUST KNOW:</p> <ul style="list-style-type: none"> • The causes & effects of gene mutations. • Stem cells & totipotency. • How transcription is regulated. • Genome projects, Gene expression & cancer. • Recombinant DNA technology. • Gene cloning methods & locating genes. • Genetic screening. • Genetic finger printing. <p>HOW THIS WILL BE ASSESSED: Assessments will be completed at the end of each topic and one main assessment will occur during each term to assess progress.</p>	<p>HALF TERM 6: <u>Revision & Examinations</u></p>

Embedding this knowledge can be supported at home by using the AQA website, text books and suitable revision guides