Key Stage 5: Year 12 Biology

Overall Curriculum Goals

A Level Biology aims to encourage learners to:

- develop essential knowledge and understanding of different areas of the subject and how they relate to each other giving students a richer understanding of the world around them through the subject of Biology.
- develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods giving students an appreciation of how developments in Biology have changed the world in which they live and an understanding of the implications of further development for future generations.
- develop competence, confidence and the use of a variety of practical, mathematical and problem solving skills which are pertinent to current and future developments in the field of Biology. Linked to this students should understand how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society (as exemplified in 'How Science Works' (HSW)).
- develop their interest in and enthusiasm for the subject, including nurturing an interest in further study and careers associated with the subject

Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
KEY IDEAS/CONCEPTS **Teacher 1:** All life on Earth shares a common chemistry. This provides indirect evidence for evolution. Despite their great variety, the cells of all living organisms contain only a few groups of carbon-based compounds that interact in similar ways. Carbohydrates are commonly used by cells as respiratory substrates. They also form structural components in plasma membranes and cell walls. Lipids have many uses, including the bilayer of plasma membranes, certain hormones, and as respiratory substrates. The most common component of cells is water; hence our search for life elsewhere in the universe involves a search for liquid water. Proteins form many cell structures. They are also important as enzymes, chemical messengers, and components of the blood. **Teacher 2:** All life on Earth exists as cells. These have basic features in common. Differences between cells are due to the addition of extra features. This provides indirect evidence for evolution. All cells arise from other cells, by binary fission in prokaryotic cells and by mitosis and meiosis in eukaryotic cells.	**KEY IDEAS/CONCEPTS** **Teacher 1:** Proteins form many cell structures. They are also important as enzymes, chemical messengers, and components of the blood Nucleic acids carry the genetic code to produce proteins. The genetic code is common to viruses and to all living organisms, providing evidence for evolution. **Teacher 2:** An understanding of cells membrane structure builds on the foundations of cell structure. The basic structure of all cell membranes, including cell-surface membranes and the membranes around the cell organelles of eukaryotes, is the same. Cells may be adapted for rapid transport across their internal or external membranes by an increase in surface area of, or by an increase in the number of protein channels and carrier molecules in, their membranes.	**KEY IDEAS/CONCEPTS** **Teacher 1:** To develop an understanding of cell membrane structure through adaptations linked to gas exchange. The internal environment of a cell or organism is different from its external environment. The exchange of substances between the internal and external environments takes place at exchange surfaces. To truly enter or leave an organism, most substances must cross cell plasma membranes. In large multicellular organisms, the immediate environment of cells is some form of tissue fluid. Most cells are too far away from exchange surfaces, and from each other, for simple diffusion alone to maintain the composition of tissue fluid within a suitable metabolic range. **Teacher 2:** Understand how interactions between cells, membranes and proteins combine in the study of the immune system. Cell-surface membranes contain embedded proteins. Some of these are involved in cell signalling – communication between cells. Others act as antigens, allowing recognition of 'self' and 'foreign' cells by the immune system. Interactions between different types of cell are involved in disease, recovery from disease and	**KEY IDEAS/CONCEPTS** **Teacher 1:** Mass transport - building on an understanding of the need for exchange systems and a GCSE knowledge of the heart, circulation and plant transport. In large organisms, exchange surfaces are associated with mass transport systems that carry substances between the exchange surfaces and the rest of the body and between parts of the body. Mass transport maintains the final diffusion gradients that bring substances to and from the cell membranes of individual cells. It also helps to maintain the relatively stable environment that is tissue fluid. **Teacher 2:** Build on an understanding of nucleic acids and the cell cycle to develop link between mutation, meiosis and genetic diversity linked to Natural Selection and evolution. A gene is a section of DNA located at a particular site on a DNA molecule, called its locus. The base sequence of each gene carries the coded genetic information that determines the sequence of amino acids during protein synthesis. The genetic code used is the same in all organisms, providing evidence for evolution. Genetic diversity within a species can be caused by gene mutation,	**KEY IDEAS/CONCEPTS** Build on genetic diversity and GCSE knowledge of ecology to look at species richness, biodiversity and conservation. **Teacher 1:** Mass Transport in plants. Xylem as the tissue that transports water in the stem and leaves of plants. The cohesion-tension theory of water transport in the xylem. Phloem as the tissue that transports organic substances in plants. The mass flow hypothesis for the mechanism of translocation in plants. The use of tracers and ringing experiments to investigate transport in plants **Teacher 2:** Biological diversity – biodiversity – is reflected in the vast number of species of organisms, in the variation of individual characteristics within a single species and in the variation of cell types within a single multicellular organism. Variation within a species can be measured using differences in the base sequence of DNA or in the amino acid sequence of proteins. Genetic diversity is acted upon by natural selection, resulting in species becoming better adapted to their environment.	**KEY IDEAS/CONCEPTS** **Biology Field Trip:** Biodiversity within a community can be measured using species richness and an index of diversity**.** Populations of different species form a community. A community and the non-living components of its environment together form an ecosystem. Ecosystems can range in size from the very small to the very large. Within a habitat, a species occupies a niche governed by adaptation to both abiotic and biotic conditions. An ecosystem supports a certain size of population of a species, called the carrying capacity. This population size can vary as a result of the effect of abiotic factors, interactions between organisms, interspecific and intraspecific competition and predation. The size of a population can be estimated using randomly placed quadrats, or quadrats along a belt transect, for slow-moving or non-motile organisms, the mark-release-recapture method for motile organisms. The assumptions made when using the mark-release-recapture method.

		prevention of symptoms occurring at a later date if exposed to the same antigen, or antigen-bearing pathogen.	chromosome mutation or random factors associated with meiosis and fertilisation. Differences between species reflect genetic differences. Differences between individuals within a species could be the result of genetic factors, or environmental factors, or a combination of both.		
Key language					
Optical microscope Transmission electron microscope Scanning electron microscope Magnification Resolution Eyepiece graticule Stage micrometer Cell fractionation Ultracentrifugation Eukaryotic cell Prokaryotic cell Specialised cell Tissue Organ Organ system Mitosis Interphase Centromere Chromosome Chromatid Cytokinesis Binary fission Acellular	Phospholipid Hydrophilic Hydrophobic Hydrogen bond Polar Fluid-mosaic model Glycoprotein Glycolipid Cholesterol Diffusion Facilitated diffusion Osmosis Active transport Co-transport Carrier protein Channel Protein	Pathogen Toxin Antigen Phagocytosis Lysozyme T lymphocytes Antigen-presenting cell B lymphocytes Monoclonal antibodies Cell mediated immunity humoral immunity agglutination plasma cell memory cells ELISA test	Chromosome Histone Gene Locus genetic code degenerate intron exon genome proteome transcription translation mutation non-disjunction meiosis crossing over diploid haploid independent segregation	genetic diversity allele directional selection stabilizing selection species phylogenetic diagram hierarchy taxon binomial name domain biodiversity species richness diversity index standard deviation	
Sequence of Teaching (Teacher 1 & Teacher 2 run parallel)					
Key Topics/Subtopics: **Biological molecules (Teacher 1)** Structure & function of: • Carbohydrates • Lipids • Water & Inorganic Ions • Proteins	**Key Topics/Subtopics:** **Biological molecules continued (Teacher 1)** **Proteins & Enzymes** • General properties of proteins. • Many proteins are enzymes	**Key Topics/Subtopics:** **Exchange with the environment (Teacher 1)** • SA: Vol ration • Exchange Systems in: o Insects o Plants o Fish o Humans • Digestion & Absorption	**Key Topics/Subtopics:** **Mass Transport (Teacher 1)** • Haemoglobin and transport of oxygen • Circulatory System • Cardiac Cycle • Blood Vessels • Mass transport in plants (xylem & phloem)	**Key Topics/Subtopics:** **Environment - populations** • Standard Deviation • Biodiversity • Populations • Succession	**Key Topics/Subtopics:** **Ecosystems** • Biomass • Energy Transfer • Nutrient Cycles • Agriculture **BIOLOGY FIELDTRIP**

Cells (Teacher 2) • Ultrastructure & comparison of prokaryotes, eukaryotes and viruses • Methods of studying cells & measuring – optical and scanning microscopy. • All cells arise from other cells – cell cycle and mitosis	**Transport across membranes (Teacher 2)** • Cell membrane structure • Movement across membranes occurs by: ○ Simple diffusion ○ Facilitated diffusion ○ Osmosis ○ Active transport ○ Co-transport	**Immunity (Teacher 2)** • Phagocytosis • Immune Response • Vaccination • HIV • Monoclonal Antibodies.	**Variation** • DNA, genes & chromosomes • Genetic Code • Protein Synthesis • Mutation • Meiosis	**Diversity** • Natural Selection • Courtship • Classification Investigating diversity 7 populations.	**Year 12 Revision/Finals preparation**
CPAC					
Required Practical 2 (Teacher 2): Preparation of stained squashes of cells from plant root tips; set up and use an optical microscope to identify the stages of mitosis and calculation of mitotic index AT d, e and f CPAC 2a, 3a, 3b, 4a and 5a	**Required Practical 1 (Teacher 1):** Investigation into the effect of a named variable of an enzyme-controlled reaction. AT a, b, c, f, and l CPAC 1, 2c, 4b, 5a and 5b **Required Practical 3 (Teacher 2):** Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of a plant tissue. AT c, h, j and l CPAC 1, 2d, 4b, 5a and 5b **Required Practical 4 (Teacher 2):** Investigation into the effect of a named variable on the permeability of cell surface membranes AT a, b, c, j and l CPAC 2a, 2b, 2c, 2d, 4b and 5a	**Required Practical :** N/A	**Required Practical 5 (Teacher 1):** **Dissection of animal or plant gas exchange system or mass transport system or of organ within such a system.** **AT e, h and j** **CPAC 3a, 3b, 4a and 5b**	**Required Practical 6 (Teacher 2) :** **Use of aseptic techniques to investigate the effect of antimicrobial substances on microbial growth.** **AT c and i** **CPAC 2a, 2b, 3a and 3b**	**Required Practical 12:** **BIOLOGY FIELD TRIP – Rocky Shore Investigation.** **AT a, b, h, k and l** **CPAC 1, 2a-d, 3a, 3b, 4a, 4b, 5a and 5b**
ILC: CONSOLIDATION & RETRIEVAL					
ILC Half Term 1	**ILC Half Term 2**	**ILC Half Term 3**	**ILC Half Term 4**	**ILC Half Term 5**	**ILC Half Term 6**
1. GCSE Enzymes 2. GCSE Osmosis	1. GCSE Evolution and speciation 2. Carbohydrates and Lipids	1. Nucleic acids 2. Cells	1. Proteins and Enzymes 2. Transport across membranes	1. Immunity	Year 12 Finals
ILC: KEY SKILLS					
Use of standard form / Converting between units / Using significant figures Plotting a graph / reading off graphs with a range of different scales / describing the shape of a graph	Calculating percentage change and percentages Calculating rate – tangents and dividing mass of substance produced by time, 1/t	Producing and using a calibration curve Proportional and serial dilution	Mean, median and mode / calculating ratios	Evaluating whether data supports conclusions	Calculating area / volume Using error bars and standard deviations
Formative Assessment Materials ○ **Topic Booklet exam starters/plenary** ○ **Interim Topic Assessed Homework – Open Book**					

- **Biology Bytes**
- **Seneca**
- **Zig Zag Learning Grids**

Summative Assessment

HT1	HT2	HT3	HT4	HT5	HT6
Bridging material benchmark assessment (week3) **Mid Topic Open Book Assessment:** • Biological Molecules • Cells **Half Term Synoptic Assessment (Assessment week 1)** ○ *GCSE Enzymes* ○ *GCSE Osmosis* ○ Biological Molecules ○ Nucleic Acids ○ Proteins & Enzymes ○ Cells	**Mid Topic Open Book Assessment:** • Proteins & Enzymes • Nucleic Acids • Transport Across Membranes **Half Term Synoptic Assessment (Assessment week 2)** ○ *GCSE Evolution and speciation* ○ *Carbohydrates & Lipids* ○ Proteins & Enzymes ○ Nucleic Acids ○ Transport Across membranes	**Mid Topic Open Book Assessment:** • Exchange • Immunity **Half Term Synoptic Assessment (Assessment week 3)** ○ *Nucleic Acids* ○ *Cells* ○ Exchange ○ Immunity	**Mid Topic Open Book Assessment:** • Exchange • Mass Transport • Variation **Half Term Synoptic Assessment (Assessment week 4)** ○ *Proteins & Enzymes* ○ *Transport Across Membranes* ○ Exchange ○ Mass Transport ○ Variation	**Mid Topic Open Book Assessment:** • Mass transport • Diversity **Half Term Synoptic Assessment (Assessment week 5)** ○ *Immunity* ○ Mass transport ○ Diversity	**Year 12 Finals Mock** **Year 12 Finals** • Carbohydrates, Lipids & Water • Proteins & Enzymes • Nucleic Acids • Cells • Transport Across Membranes • Exchange • Immunity • Mass Transport • Variation • Diversity

Assessment Week Resit (as applicable)

Super curricular opportunities

- Biology Olympiad
- MDV

CIAG

A Level Biology is usually studied with other science-based subjects and can lead to the following degree course: Biomedical Sciences, Biochemistry, Dentistry, Dietetics, Earth Sciences, Environmental Science, Forensic Science, Geology, Medical Science, Medicine, Nursing, Pharmacy, Physiotherapy, Sports Science, and Veterinary Science. It is a particularly good choice for people who want to pursue a career in health and clinical professions.
Links:

Key Stage 5: Year 13 Biology

Overall Curriculum Goals

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- develop essential knowledge and understanding of different areas of the subject and how they relate to each other giving students a richer understanding of the world around them through the subject of Biology.
- develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods giving students an appreciation of how developments in Biology have changed the world in which they live and an understanding of the implications of further development for future generations.
- develop competence, confidence and the use of a variety of practical, mathematical and problem solving skills which are pertinent to current and future developments in the field of Biology. Linked to this students should understand how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society (as exemplified in 'How Science Works' (HSW)).
- develop their interest in and enthusiasm for the subject, including nurturing an interest in further study and careers associated with the subject

Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
KEY IDEAS/CONCEPTS Teacher 1: Life depends on continuous transfers of energy. In photosynthesis, light is absorbed by chlorophyll and this is linked to the production of ATP. In photosynthesis, ATP production occurs when protons diffuse down an electrochemical gradient through molecules of the enzyme ATP synthase, embedded in the membranes of cellular organelles. Teacher 2: Ecosystems are dynamic systems. Primary succession, from colonisation by pioneer species to climax community. At each stage in succession, certain species may be recognised which change the environment so that it becomes more suitable for other species with different adaptations.	**KEY IDEAS/CONCEPTS** Teacher 1**:** In respiration, various substances are used as respiratory substrates. The hydrolysis of these respiratory substrates is linked to the production of ATP. In respiration, ATP production occurs when protons diffuse down an electrochemical gradient through molecules of the enzyme ATP synthase, embedded in the membranes of cellular organelles. Teacher 2: Biological diversity – biodiversity – is reflected in the vast number of species of organisms, in the variation of individual characteristics within a single species and in the variation of cell types within a single multicellular organism. A species exists as one or more populations. There is variation in the phenotypes of	**KEY IDEAS/CONCEPTS** Teacher 1: A stimulus is a change in the internal or external environment. A receptor detects a stimulus. A coordinator formulates a suitable response to a stimulus. An effector produces a response. Receptors are specific to one type of stimulus. Nerve cells pass electrical impulses along their length. A nerve impulse is specific to a target cell only because it releases a chemical messenger directly onto it, producing a response that is usually rapid, short-lived and localised. Teacher 2: Gene technologies allow the study and alteration of gene function allowing a better understanding of organism function and the design of new industrial and medical processes	**KEY IDEAS/CONCEPTS** Teacher 1: In contrast to nervous transmission, which is specific to a target cell, mammalian hormones stimulate their target cells via the blood system. They are specific to the tertiary structure of receptors on their target cells and produce responses that are usually slow, long-lasting and widespread. Plants control their response using hormone-like growth substances. Homeostasis in mammals involves physiological control systems that maintain the internal environment within restricted limits. The importance of maintaining a stable core temperature and stable blood pH in relation to enzyme activity. The factors that influence blood glucose concentration and the role of the liver in glycogenesis, glycogenolysis and gluconeogenesis.	**KEY IDEAS/CONCEPTS** Essay preparation and targeted revision	

The new species may change the environment in such a way that it becomes less suitable for the previous species. Changes that organisms produce in their abiotic environment can result in a less hostile environment and change biodiversity. Conservation of habitats frequently involves management of succession. In communities, the biological molecules produced by photosynthesis are consumed by other organisms, including animals, bacteria and fungi. The process of photosynthesis is common in all photoautotrophic organisms and the process of respiration is common in all organisms, providing indirect evidence for evolution. In communities, the biological molecules produced by photosynthesis are consumed by other organisms, including animals, bacteria and fungi. Some of these are used as respiratory substrates by these consumers. Photosynthesis and respiration are not 100% efficient. The transfer of biomass and its stored chemical energy in a community from one organism to a consumer is also not 100% efficient.	organisms in a population, due to genetic and environmental factors. Two forces affect genetic variation in populations: genetic drift and natural selection. Genetic drift can cause changes in allele frequency in small populations. Natural selection occurs when alleles that enhance the fitness of the individuals that carry them rise in frequency. A change in the allele frequency of a population is evolution. The theory of evolution underpins modern Biology. All new species arise from an existing species. This results in different species sharing a common ancestry, as represented in phylogenetic classification. Common ancestry can explain the similarities between all living organisms. The individuals of a species share the same genes but (usually) different combinations of alleles of these genes. An individual inherits alleles from their parent or parents. A species exists as one or more populations. There is variation in the phenotypes of organisms in a population, due to genetic and environmental factors. Two forces affect genetic variation in populations: genetic drift and natural selection. If a population becomes isolated from other populations of the same species, there will be no gene flow between the isolated population and the others. This reproductive isolation means that a new species has evolved.		Osmoregulation as control of the water potential of the blood. The roles of the hypothalamus, posterior pituitary and antidiuretic hormone (ADH) in osmoregulation. Teacher 2: Cells can control their metabolic activities by regulating the transcription and translation of their genome. Although the cells within an organism carry the same coded genetic information, they translate only part of it. In multicellular organisms, this control of translation enables cells to have specialised functions, forming tissues and organs. There are many factors that control the expression of genes and, thus, the phenotype of organisms. Some are external, environmental factors, others are internal factors. The expression of genes is not as simple as once thought, with epigenetic regulation of transcription being increasingly recognised as important.		
Sequence of Teaching (Teacher 1 & Teacher 2 run parallel)					
Key language					
Chemiosmotic effect Oxidation Photosynthesis Reduction Photoionisation	Chemiosmotic effect Oxidation Anaerobic respiration Reduction Aerobic respiration	Tropism Taxes Kinesis Reflex arc Receptor	Homeostasis Negative feedback Glycogenesis Glycogenolysis Gluconeogenesis		

Chloroplast Light dependent reaction Photolysis Chlorophyll Grana Stroma Thylakoids Electron transfer chain Light independent reaction ATP synthase Calvin cycle Glycerate-3-Phosphate Triose Phosphate Limiting Factor Compensation point	Glycolysis Phosphorylated glucose Pyruvate Acetyl Coenzyme A Krebs Cycle Substrate level phosphorylation Electron transfer chain Oxidative phosphorylation Respiratory substrate ATP synthase Triose Phosphate	Pacinian corpuscle Stimulus Generator potential Effector Autonomic nervous system Sensory neurone Motor neurone Intermediate neurone Central nervous system Peripheral nervous system Sympathetic nervous system Parasympathetic nervous system Action potential Actin Effector Endocrine gland Hormone Impulse Neurone Synapse Myelin Myofibril Myosin Neuromuscular junction Phosphocreatine Neurotransmitter Refractory period Skeletal muscle	Insulin Glycogen Second messenger model Adenylcyclase Protein Kinase Diabetes Osmoregulation Hypothalamus Antidiuretic hormone Nephron Glomerulus		
Key Topics/Subtopics: **Photosynthesis (Teacher 1)** • ATP – revisit ATP biochemistry/hydrolysis • Photosynthesis – LDR/LIR • Chlorophyll structure • Factors affecting photosynthesis **Environment (Teacher 2)** • Populations • Population growth • Studying populations • Mark-capture release • Biodiversity & Species diversity • Biodiversity & Agriculture	**Key Topics/Subtopics:** **Respiration (Teacher 1)** • Glycolysis • Link Reaction & Krebs Cycle • Electron Transfer Chain • Anaerobic Respiration **Inheritance & Speciation (Teacher 2)** • Monohybrid Cross – revisit GCSE • Dihybrid Cross/co-dominance & Multiple Alleles • Linkage • Epistasis	**Key Topics/Subtopics:** **Stimuli & Response (Teacher 1)** • Tropisms • Taxes & Kinesis • Reflex Actions • Receptors – The Retina • Control of Heart Rate • **Coordination & Control (Teacher 1)** • Coordination • The Nervous Impulse • Synaptic transmission • Muscle Control **Recombinant DNA Technology (Teacher 2)**	**Key Topics/Subtopics:** **Homeostasis (Teacher 1)** • Homeostatic Principles & Feedback Mechanisms • Control of blood glucose • Diabetes • Control of water potential • Hormonal control of water potential **Gene Expression (Teacher 2)** • Protein Synthesis & Mutations – Revisit Year 12 • Cell specialisation		

• Succession & Conservation • Biomass • Efficiency of energy transfer • Nutrient Cycles	• Hardy-Weinberg Equation • Variation & Selection • Speciation	• Producing DNA Fragments • Amplifying DAN – In Vitro/In Vivo • Marker Genes • DNA Probes • Gel Electrophoresis • DNA Fingerprinting • Ethical, Financial & Social Issues	• Control of Gene Expression • Epigenics • Cancer • Genome Project		
CPAC					
Required Practical 7 (Teacher 1) Use of chromatography to investigate the pigments isolated from leaves of different plants AT b, c and g CPAC 1, 3a, 3b, 5a, 5b **Required Practical 8 (Teacher 1)** Investigating dehydrogenase activity in chloroplasts AT a, b and c CPAC 2b, 2c, 4a and 4b	**Required Practical 9 (Teacher 1)** Investigating the effect of temperature on respiration in yeast AT b CPAC 2a, 2d, 4b, 5a and 5b	**Required Practical 10 (Teacher 1):** Investigating the effect of an environmental variable on the movement of an animal AT h CPAC 2b, 2c, 2d, 5a	**Required Practical 11 (Teacher 1)** Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown 'urine' sample. AT b and c CPAC 1, 2a, 4a and 5a		
ILC: CONSOLIDATION & RETRIEVAL PRACTICE					
ILC Half Term 1	**ILC Half Term 2**	**ILC Half Term 3**	**ILC Half Term 4**	**ILC Half Term 5**	**ILC Half Term 6**
1. Variation / diversity 2. Carbohydrates and lipids / Nucleic acids	1. Mass transport 2. Environment	1. Photosynthesis / respiration 2. Cells/ transport across membranes	1. Proteins and Enzymes 2. Inheritance	1. DNA technology 2. Exchange	
ILC: KEY SKILLS					
1. Calculating uncertainty and percentage error **2. Using logs**	**1. Choosing a statistical test and interpreting the results** **2. Magnification questions**	**1. Using a graticule** **2. Scientific Drawing**	**1. Evaluating whether data supports conclusions** **2. Calculating rate**	**1. Proportional & serial dilution** **2. Using error bars and standard deviations**	
Formative Assessment Materials					
○ **Topic Booklet exam starters/plenary** ○ **Interim Topic Assessed Homework – Open Book** ○ **Biology Bytes** ○ **Seneca** ○ **Zig Zag Learning Grids**					
Summative Assessment					
HT1	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**
Mid Topic Open Book Assessment: • Photosynthesis • Environment **Half Term Retrieval Assessment (Assessment week 1)** ○ *Variation / diversity* ○ *Carbohydrates and lipids / Nucleic acids*	**Mid Topic Open Book Assessment:** • Respiration • Inheritance **Half Term Retrieval Assessment (Assessment week 2)** ○ *Mass transport* ○ *Environment* ○ Respiration	**Mid Topic Open Book Assessment:** • Stimuli & Response • Coordination and Control • Recombinant DNA technology **Half Term Retrieval Assessment (Assessment week 3)**	**Mid Topic Open Book Assessment:** • Homeostasis • Gene Expression **Half Term Retrieval/Synoptic Assessment (Assessment week 4)** ○ *Proteins and Enzymes*	**Revision** **Synoptic – Past paper questions** **Essay Questions**	

○ Photosynthesis ○ Environment	○ Inheritance	<u>Year 13 Mocks (Feb</u> **All Year 12 Topics** **Year 13 Topics:** ○ Photosynthesis ○ Environment ○ Respiration ○ Inheritance ○ Stimuli & Response	○ *Inheritance Photosynthesis / respiration* ○ *Cells/ transport across membranes* ○ Homeostasis ○ Gene Expression ○ Stimuli & Response ○ Coordination and Control ○ Recombinant DNA technology		
Assessment Week Resit (as applicable)					
Super curricular opportunities					
○ Biology Olympiad ○ MDV					
CIAG					
A Level Biology is usually studied with other science-based subjects and can lead to the following degree course: Biomedical Sciences, Biochemistry, Dentistry, Dietetics, Earth Sciences, Environmental Science, Forensic Science, Geology, Medical Science, Medicine, Nursing, Pharmacy, Physiotherapy, Sports Science, and Veterinary Science. It is a particularly good choice for people who want to pursue a career in health and clinical professions. Links:					