

Subject Name:	Science
Key Stage 5 (A Level Biology)	
Curriculum Intent Statement	
<p>As Science teachers, it is our intent is to provide a science curriculum, which will develop scientific knowledge, skills and conceptual understanding through the disciplines of Biology, Chemistry and Physics. Our teaching of science must encourage students to be scientifically literate, think critically about the world, so that in their futures they will recognise the impact of science on their everyday lives.</p>	
Autumn Term 1	
<p>Biological molecules</p> <ul style="list-style-type: none"> • Monomers • Carbohydrates • Lipids • Proteins <p>Cell structure</p> <ul style="list-style-type: none"> • Structure of eukaryotic cells • Structure of prokaryotic cells • Methods of studying cells 	
Autumn Term 2	
<p>Biological molecules</p> <ul style="list-style-type: none"> • Proteins as enzymes • Structure of RNA and DNA • DNA replication <p>Cell structure</p> <ul style="list-style-type: none"> • Mitosis • Transport across cell membranes • Cell recognition and immune system 	

Spring Term 1

Biological molecules

- ATP
- Water
- Inorganic molecules
- DNA, genes and chromosomes
- DNA and protein synthesis

Spring Term 2

- Genetic diversity
- Genetic diversity and adaptation
- Species and taxonomy
- Biodiversity within a community
- Surface area to volume ratio

- Gas exchange
- Digestion and absorption
- Mass transport in animals

Summer Term 1

- Investigating diversity
- Mass transport in plants

Summer Term 2

- Work experience & Academy exams

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Autumn Term 1	
<ul style="list-style-type: none"> • Genetics • Monohybrid and dihybrid crosses • Linkage, Epistasis • Chi-squared test • Hardy Weinberg principle • Variation and selection • Speciation and genetic drift • Variation in population size • Investigating populations • Mutations and mutagenic agents • Conservation Evidence and Data • Interpreting data on cancer 	
Autumn Term 2	
<ul style="list-style-type: none"> • Cancer • Stem cells and stem cells in medicine • Regulation of transcription and translation • Epigenetic control of gene expression • Evaluating data on phenotypes • Genome projects • Making and amplifying DNA fragments • Recombinant DNA technology and gene therapy • Gene probes and medical diagnosis • Genetic fingerprinting • Photosynthesis, respiration and energy • Photosynthesis and light dependent reaction • Photosynthesis and light independent reaction • Limiting factors in photosynthesis • Aerobic and anaerobic respiration 	

Spring Term 1

- Mitochondrial reactions
- respiration experiments
- Energy transfer in ecosystems
- Farming practices and production
- Nutrient cycles and eutrophication
- Survival and response
- Nervous communication
- Responses in plants
- Receptors
- Control of heart rate

Spring Term 2

- Neurones
- Synaptic transmission
- Muscle structure and muscle contraction
- Homeostasis
- Control of blood glucose concentration
- Diabetes and blood glucose concentration
- The kidneys
- Controlling blood water potential

Summer Term 1

- Revision
- Final Exams

Summer Term 2