

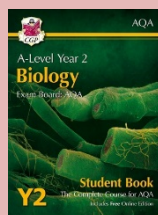
The English Martyrs Catholic School and Sixth Form College



Biology Year 13 - A	Module 1	Module 2	Module 3
<u>Topic Theme and Intent</u>	Students explore the intricacies and reactions involved in the processes of photosynthesis (how light energy is used to produce organic molecules) and respiration (how energy contained within glucose is unlocked to help sustain life).	Students look at the transfer of energy between organisms in communities . They will consider the efficiencies of these energy transfers and how this can be improved. They consider the roles of Nitrogen and Phosphorus in ecosystems.	Students consider how gene technologies allow scientists to further their understanding of the genome . They also consider the practical uses of this knowledge.
<u>Knowledge</u>	<ul style="list-style-type: none"> • Photosynthesis – chloroplast structure, light dependent reaction, light independent reaction • Respiration – aerobic and anaerobic respiration 	<ul style="list-style-type: none"> • Energy transfer in Ecosystems • Nutrient cycles – Nitrogen and Phosphorus • Mutations and Cancer • Stem cells in medicine • Transcription, Translation, & Epigenetics 	<ul style="list-style-type: none"> • Genome projects • Making and amplifying DNA fragments • Gene therapy • Gene probes and medical drugs • Genetic fingerprinting
<u>Skills</u>	Investigate the pigments in leaves using chromatography, and the activity of dehydrogenase in chloroplasts.	Evaluate the use of stem cells in medicine	Consider the practical uses of genetic fingerprinting.
<u>Literacy Links</u>	<p>Reading – Students will read about the different stages of photosynthesis, and of respiration.</p> <p>Writing – Students start to communicate scientific ideas and concepts through writing.</p> <p>Oracy – Students start to use scientific vocabulary in discussion and question and answering.</p>	<p>Reading – Students will read about the transfer of energy through cycles.</p> <p>Writing - Students practise communicating scientific ideas and concepts through writing.</p> <p>Oracy – Students practise the use scientific vocabulary in discussion and question and answering.</p>	<p>Reading – Students will read about gene therapy.</p> <p>Writing - Students will communicate scientific ideas and concepts through writing.</p> <p>Oracy – Students use scientific vocabulary in discussion and question and answering.</p>
<u>Essential Vocabulary</u>	Adenosine Triphosphate, Phosphorylation, Oxidation, Reduction, Glycolysis, Respirometer.	Saprobionts, Nitrogen Fixation, Methylation, Totipotent, Pluripotent, Multipotent, Unipotent.	Recombinant, Transgenic, Amplifying, Bacteriophage, Promotor, Terminator, Electrophoresis.

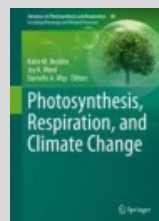
Disciplinary Reading

CGP Books – A level Biology, & Oxford Revise A level Biology.

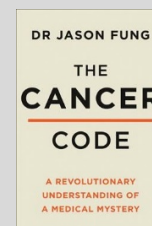


Reading for Pleasure

K.Becklin *et al* – Photosynthesis, Respiration and Climate Change



J. Fung – The Cancer Code



M. Ridley - Genome

