

The English Martyrs Catholic School and Sixth Form College



Biology Year 12 - B	Module 1	Module 2	Module 3
<u>Topic Theme and Intent</u>	Students explore the key differences between Eukaryotic and Prokaryotic cells and how they divide . They consider what happens when cell division becomes uncontrolled . They also look at why viruses are not classed as alive .	Students look at the structure of cell membranes , and how this relates to cell transport . They also consider how our bodies defend against pathogens , and how we test for pathogens and antibodies .	Students compare the differences in the DNA of Eukaryotes and Prokaryotes . They look at how DNA is used to produce polypeptide chains , and how mutations in DNA and sometimes drive Natural Selection and Evolution .
<u>Knowledge</u>	<ul style="list-style-type: none"> Eukaryotic and Prokaryotic cells Viruses Microscope skills Cell Fractionation and analysis Cell division – mitosis and cancer 	<ul style="list-style-type: none"> The Fluid Mosaic model Cell transport – diffusion, osmosis, active transport Antigens and the immune response Vaccines and immunity HIV and AIDS ELISA tests 	<ul style="list-style-type: none"> Genetic material of eukaryotic and prokaryotic organisms Transcription and Translation Meiosis Mutations Genetic Diversity, Natural Selection and Courtship behaviour
<u>Skills</u>	Estimate the mitotic index of dividing cells.	Investigate the effect of alcohol on cell membranes.	Investigate the effect of different antibiotics on killing pathogens.
<u>Literacy Links</u>	<p>Reading – Students will read about the differences between the cells of organisms, and how they divide.</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 transport across membranes, and how our bodies defences against pathogens.</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 DNA and how it is used to produce proteins, and how differences lead to evolution.</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>	Eukaryotes, Prokaryotes, Fractionation, Homogenisation, Ultracentrifugation, Prophase, Metaphase, Anaphase, Telophase, Apoptosis.	Fluid Mosaic Model, Hydrophobic, Hydrophilic, Lymphocyte, Phagocyte, Agglutination, Enzyme Linked Immunosorbent Assay.	Genome, Proteome, Homologous, Transcription, Translation, Degenerative, Independent Segregation, Phylogeny, Taxonomy, Binomial Naming System.

Disciplinary Reading	Reading for Pleasure
<p>CGP Books – A level Biology, & Oxford Revise A level Biology.</p> <div style="display: flex; justify-content: space-around;">   </div>	<p>T.Y.M Bollinger – The Truth about Cancer.</p> <div style="text-align: center;">  </div> <p>S. Gilbert – Vaxxers</p> <div style="text-align: center;">  </div> <p>J. Verdolin – Wild Connection</p> <div style="text-align: center;">  </div>