Landau Learner Curriculum Overview

Subject: Biology **Director of Learning: DDB** **Year: 12**

Curriculum organisation				
Students are taught based on 5 single sessions per week. Students follow the OCR A Biology AS/A level specification. Resulting in either an AS level in Biology after 1 year or an A level in Biology after 2 years.				
What topics will students be studying this year? Includes links to National Curriculum, Curriculum Intent and Prior Related Learning*				
Term 1:	**Term 2:**	**Term 3:**	**Term 4:**	**Term 5:**
• Cell Structure • Mathematics in Biology • Biological Molecules	• Biological Molecules • Nucleotides and Nucleic acids • Cell division, diversity and cellular organisation	• Enzymes • Communicable diseases • Biological membranes • Exchange surfaces	• Transport in animals • Transport in plants • Biodiversity • Classification and Evolution	• Unit revision • Pag 12 (practical activity)
Links: Prior learning KS4 - Understanding of cell structure of a variety of cells and application of mathematics in order to calculate magnification. **Curriculum Intent:** Students will practice and embed key mathematical skills that will be required throughout the course. Students will learn the fundamentals of cell structure and the impact of microscopy on our understanding. This will form an important foundation of knowledge crucial for A-level Biology.	**Links: Prior learning KS4 -** The identification of biological molecules in food tests. Knowledge of the cell cycle key differences between mitosis and meiosis. **Curriculum Intent:** Students will study the structure of macromolecules and their properties and relate this to how they interact in biological environments. Students will deepen their knowledge of DNA through learning of Nucleic acid structure and functions. Students then build upon and apply this knowledge when studying the cell cycle and cell division	**Links: Prior learning KS4 -** Factors that affect enzyme activity and ways to investigate this. An understanding of diffusion, osmosis and active transport in living organisms. **Curriculum Intent:** Students will deepen their knowledge and scientific vocabulary when looking at enzyme action and factors effecting activity. Students will combine their knowledge of cell structure and biological molecules and apply it to the properties and functioning of Biological membrane. In addition to this, students will consider the importance of exchange surfaces in multicellular organisms.	**Links: Prior learning KS4 –** Application of the anatomy of the Heart to the cardiac cycle. Understanding of the composition and roles of the blood. The use of sampling to estimate population sizes and knowledge of the theory of natural selection. **Curriculum intent:** Students will consider the role of transport systems in a variety of organisms. Students build upon their knowledge of sampling techniques as a way of measuring biodiversity. Students employ the use of statistics to calculate biodiversity. Students develop their understanding of the five kingdom classification system.	**Links: Prior learning KS4 –** Application of practical techniques and how science works. **Curriculum Intent:** Students will review their learning during targeted retrieval practice with focus on knowledge retention and application to exam questions. Students will plan and carry out their investigation with a clear focus on scientific practical skills.

Equipment needed for sessions:	**What can you do to support your child?**
• Biology folder • A level Biology textbook • Relevant A level Biology student guides for each topic • Their Science teacher will provide worksheets and information that are being used in the session.	• Encourage your child to regularly read their A level Biology textbook • Encourage your child to complete their homework tasks they are set by their Biology teacher to a high standard, asking them to show you their finished work • Encourage your child to use the OCR website to access additional material, past papers and candidate exemplars
How will learning be assessed and progress measured?	**Extension and enrichment activities:**
• Trial examinations carried out at selected points during the year • End of topic summative assessments • Marking of homework/written assessments is carried out on a regular basis in line with the College marking policy. Regular peer and self marking	• A Level Biology Live event • Science peer mentoring