**LANGDON PARK SIXTH FORM**

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| **Subject: Biology**  In Biology we want our students to have an inquisitive mind and be curious about the world around them. | **Year: Y12 Term 1** | **Topic: Communication and** Hom Ho  **Enquiry Question: What are you made of?** |
| ***What and Why*?** The cells of all living organisms are composed of biological molecules. Proteins, carbohydrates and lipids are three of the key groups of biological macromolecules that are essential for life. Students will have studied these molecules at GCSE but this will be the first time that they will study the structure of these macromolecules and gain a better understanding of their functions in living organisms and cells. | | |

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| **Tier 2 Vocabulary**  monomer  polymers  synthesis  hydrolysis  condensation | **Tier 2 Vocabular** | **Key terms**  Isomer  monosaccharide  disaccharide  triose  pentose  hexose | **Numeracy:**  Calculation of retention (Rf) values |

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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Independent Learning** | **Extension – Cultural Capital and Reading** |
| the concept of monomers and polymers and the importance of condensation and hydrolysis reactions in a range of biological molecules  the ring structure and properties of glucose as an example of a hexose monosaccharide and the structure of ribose as an example of a pentose monosaccharide.  the synthesis and breakdown of a disaccharide and polysaccharide by the formation and breakage of glycosidic bonds  the structure and properties of starch, glycogen and cellulose molecules  the synthesis and breakdown of dipeptides and polypeptides, by the formation and breakage of peptide bond  the synthesis and breakdown of triglycerides by the formation (esterification) and breakage of ester bonds between fatty acids and glycerol  the structure and function of globular proteins including a conjugated protein  how hydrogen bonding occurs between water molecules, and relate this, and other properties of water, to the roles of water for living organisms  the key inorganic ions that are involved in biological processes | Consult your issued textbooks in the first instance, then look at other textbooks in the library for alternative diagrams, other examples or further explanations.  <https://alevelnotes.com/notes/biology/biological-molecules/biological-molecules>  <http://brilliantbiologystudent.weebly.com/biuret-test-for-protein.html> | Required practical  Written Task  Practical write up.  How to carry out and interpret the results of biochemical tests  • End of unit assessment | Research and planning on practical work.  A written task on history of microscope.  [www.seneca.co.uk](http://www.seneca.co.uk) | <https://jcp.bmj.com/content/jclinpath/25/10/892.full.pdf> |

**Pre-assessment content review**

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| I feel secure in | I need to focus on | My action plan |

**Pre-assessment skills review**

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| I feel secure in | I need to focus on | My action plan |

**Post-assessment review**

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| Weaknesses in content knowledge | Skills I need to focus on | My action plan |
| Retest / review – teacher and student comment | | |

**Revision planning**

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| Spec point | Notes complete | Revision materials | Past paper Qs | Timed conditions |
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