Yr12 Medical Science – Unit 1

MAGHULL HIGH SCHOOL – CURRICULUM MAP

	Sequence		
TOPIC (S) **Biological Molecules, Cells and Organisation**	1. Carbohydrates 2. Proteins 3. Lipids 4. Nucleic Acids 5. Coenzymes 6. Disorders involving metabolism	7. Cell structure 8. Cell Membrane 9. Microscopes & Calculating Magnification 10. Transport across membranes 11. Mass Transport	12. Cell Cycle and Mitosis 13. Meiosis 14. Cancer 15. Stem Cells 16. Aerobic and Anaerobic Respiratio 17. Cell Death
Knowledge & Skills development	• Define monomers, polymers, monosaccharides, condensation reaction and hydrolysis • Polysaccharides are formed by the condensation of many glucose units. • Describe how triglycerides are formed by the condensation of one molecule of glycerol and three molecules of fatty acid. • recognise, from diagrams, saturated and unsaturated fatty acids and their properties • Describe and compare the structure of DNA and RNA • Describe the structure and role of ATP • Describe the structure and role of Coenzymes • Recall the symptoms and treatments of various disorders including Galactodaemia, PKU, Coeliac Disease andLactose Intolerance • Describe the role and structure of cells and their associates organelles		• Be able to observe cells using a light microscope and carry out calculations involving magnification • To be able to describe the various mechanisms for transporting substances across cell membranesand the mass transport of substances in the human body • Be able to describe the cell cycle and mitosis • Describe meiosis and be able to compare to mitosis • Have an understanding of how cancer cells frm and how most common treatments are designed to interrupt their replication • Describe the location and structure of stem cells in humans and their potential to treat various disorders • Describe the four stages of aerobic respiration and recall the role of coenzymes in this process • Describe aerobic respiration in human • Be able to explain cell death in terms of apoptosis and necrosis • Be able to describe the organisation from the human body down to sub cellular structures (organelles)
Assessment / Feedback Opportunities	**Formative Assessment** Teacher questioning Quizzes Exam style questions		**Summative assessment** Half Termly Assessments Mock Exams

Personal Development (Including British Values, RSE, Citizenship)	• **Healthy Lifestyles** : Understanding the importance of diet • **Personal Development:** Collaborative problem solving • **Respect and Tolerance:** conflict of interest and other concepts with regards to ethical issues in Biology
Reading opportunities	Subject specific vocabulary introduced before reading of related texts Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error, Covalent, Ionic, Hydrogen, Monomer, Polymer, Polymerisation, Condensation, Hydrolysis, Monosaccharide, Disaccharide, Triglyceride, Phospholipid, Hydrophilic, Hydrophobic, Double helix, Resolution, Magnification, Mitosis, Meiosis
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators Sport – Understanding processes within the human body Health and Social Care – Understanding how disorders impact everyday life, Human Lifespan
Careers	Forensics, Archaeology, Biological Scientists, Microbiology, Biochemistry, Medicine, Pathology, Nursing, Health Visitor, Health Care Assistant, Paramedic Radiologist