YEAR 10 SCIENCE: BIOLOGY

Half Term 4

MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit: **Bioenergetics** **LESSONS**	1. Photosynthesis reaction 2. Rate of photosynthesis (req prac)	3. Uses of glucose from photosynthesis 4. Aerobic & anaerobic respiration	5. Body response to exercise 6. Metabolism
Knowledge & Skills Development	• Recall the photosynthesis equation & classification as exothermic and endothermic reaction. • Explain the factors that can alter the rate of reaction of photosynthesis. • Practical skills development: measuring volume, calculating averages, variables.	• Detail how a plant uses the glucose made during photosynthesis • Outline the equations for aerobic and anaerobic respiration, classifying as exothermic or endothermic. • Describe and explain the responses of the body to exercise. • Link respiration to metabolism.	
Assessment / Feedback Opportunities	**Formative Assessment** Teacher questioning Quizzes Exam style questions	**Summative assessment** End of topic assessment Exam questions in future end of topic assessments to assess recall	
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest Light intensity, Chlorophyll, Glucose, Starch, Carbon dioxide, Water, Temperature, Aerobic respiration, Exothermic, Anaerobic respiration, Fermentation, Lactic acid, Oxygen debt, Metabolism		
Literacy/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 including structuring methods, comparisons and evaluations		
Cross Curricular Themes	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators PE - The pathway of air, Gaseous exchange, Cardiac output, stroke volume and heart rate Understanding the terms aerobic exercise (in the presence of oxygen) and anaerobic exercise (in the absence of enough oxygen) Immediate effects of exercise (during exercise)		
Personal Development (Including British Values, RSE, Citizenship)	Health and Wellbeing including exercise		

Career Opportunities	Horticulturist, florist, physiotherapist, coaching