

B4 Bioenergetics	RAG
4.1 Photosynthesis	
State the word equation for photosynthesis	
Write a balanced symbol equation for photosynthesis (HT Only)	
Explain where the energy for photosynthesis comes from	
State the factors that affect the rate of photosynthesis	
Explain limiting factors (HT only)	
Explain graphs of photosynthesis rate involving two or three factors and decide which is the limiting factor (HT only)	
Understand and use inverse proportion – the inverse square law and light intensity in the context of photosynthesis. (HT only)	
Explain how limiting factors are important in the economics of enhancing the conditions in greenhouses to gain the maximum rate of photosynthesis while still maintaining profit (HT only)	
Required practical activity 6: investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed	
State the six uses of glucose by plants	
Know how plant use nitrate ions that are absorbed from the soil.	
4.2 Respiration	
Compare the processes of aerobic and anaerobic respiration with regard to the need for oxygen, the differing products and the relative amounts of energy transferred.	
Define aerobic and anaerobic respiration	
State that reactions which transfer energy to the environment are exothermic reactions	
Name three things organisms need energy for	
State the word equation for aerobic respiration	
Write a balanced symbol equation for aerobic respiration (HT only)	
State the word equation for anaerobic respiration in muscles	
The energy transferred supplies all the energy needed for living processes.	
State the word equation for anaerobic respiration in plant and yeast cells	
Write a balanced symbol equation for anaerobic respiration in yeast and plant cells (HT only)	
State that anaerobic respiration in yeast cells is called fermentation and has economic importance in the manufacture of bread and alcoholic drinks	
Explain why anaerobic respiration takes place in muscles during exercise	
Explain muscle fatigue and oxygen debt	
Define the role of the liver in the removal of lactic acid (HT only)	
Define metabolism	
The energy transferred by respiration in cells is used by the organism for the continual enzyme controlled processes of metabolism that synthesise new molecules.	
State five metabolic processes	