



## Year 10 : ASK Yourself!

**Subject: Biology**

**Unit: 2 – Bioenergetics: Photosynthesis and respiration**

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
<div style="display: flex; align-items: center; justify-content: center;"> <div style="background-color: #5dade2; color: white; padding: 10px; font-size: 2em; margin-right: 5px;">S</div> <div style="font-size: 1.5em;">kills</div> </div>				
	To be able to, prepare, observe and draw stomata seen under a microscope.	Be able to investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed. Be able to measure and calculate rates of photosynthesis Plot and draw appropriate graphs selecting appropriate scale for axes.	To be able to use data to relate limiting factors to the cost effectiveness of adding heat, light or carbon dioxide to greenhouses. Be able to measure the rate of transpiration by the uptake of water. Be able to investigate the effect of exercise on the body. Be able to extract and interpret graphs of photosynthesis rate involving one limiting factor.	Process data from investigations involving stomata and transpiration rates to find arithmetic means, understand the principles of sampling and calculate surface areas and volumes. Calculate stomatal density. Calculate the inverse square law. Translate information between graphical and numeric form.
<div style="display: flex; align-items: center; justify-content: center;"> <div style="background-color: #5dade2; color: white; padding: 10px; font-size: 2em; margin-right: 5px;">K</div> <div style="font-size: 1.5em;">knowledge</div> </div>				
	Be able to describe photosynthesis as an endothermic reaction.	Describe & explain the role of stomata and guard cells. Describe where active transport occurs in humans and plants. Describe cellular respiration as an exothermic reaction.	Be able to explain the effects of temperature, light intensity, carbon dioxide concentration, and the amount of chlorophyll on the rate of photosynthesis.	To be able to explain the use of glucose and how such materials support plant growth. To be able to compare the processes of aerobic and anaerobic respiration with regard to the need for oxygen.

