Prior learning	• Year 7: Cell structure • Year 8: Biodiversity and plants • Year 9: B1a – Plant cell structure; B1b – Aerobic respiration, Diffusion, Osmosis, Active transport			
Lesson Number	**AQA Spec**	**Title**	**Content**	**Homework/ Assessments**
1	4.4.1.1 4.4.1.3	Explaining photosynthesis	• Recall the structure of a plant cell • Identify different parts of the plant and their functions – roots, stem and leaves • Write the word and balanced symbol equation for Photosynthesis • Describe photosynthesis as an endothermic reaction • Describe what starch is and the test to identify starch • Explain how the cellular structure of a leaf is adapted for efficient photosynthesis • Describe how plants use the glucose and oxygen they produce.	
2	4.2.3.1	Investigating leaves	• Explain how the external structure of a leaf is adapted for photosynthesis. • Describe the internal structures of a leaf (plant tissues) • Explain the function and role of stomata in gas exchange and water loss	

3	4.4.1.2	***Required practical 1: Investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism (Elodea)***	**Working scientifically skills**: • Identify and manage the variables in this experiment • Describe the method • Observe and record gas production accurately • **Math's skills:** Calculate rate of photosynthesis, construct a graph of light intensity against rate of photosynthesis and identify outliers, Calculate inverse square law (Higher tier only). • **Evaluate** method, suggesting improvements for obtaining more valid data • Understand the difference between repeatable and reproducible data • Understand the difference between accuracy and precision • Describe the importance of peer review	**Skills Assessment: 15 marks**
4	4.1.3.3	Plant minerals	• Describe how mineral ions from the soil help plants to grow • Describe the functions of different mineral ions in a plant (nitrates, phosphates, potassium and magnesium) • Explain the effects of mineral deficiencies on plant growth • Explain the importance of fertilisers	
5	4.4.1.2	Increasing photosynthesis& food production	• Explain the effects of temperature, light intensity, carbon dioxide concentration, and the amount of chlorophyll on the rate of photosynthesis. • Higher tier - Explain the interaction of factors in limiting the rate of photosynthesis • Higher tier - Explain graphs of photosynthesis rate involving two or three factors and decide which is the limiting factor • Higher tier - Explain how limiting factors are important in the economics of enhancing the conditions in greenhouses	
6	4.2.3.1 4.2.3.2 4.1.3.2	Looking at stomata	• Explain the structure and function of stomata. • Explain how stomata size is controlled by the guard cells	**Assessment: 25-mark multiple choice quiz**

7	4.2.3.2	Transpiration	• Describe what transpiration is in plants. • Explain the relationship between transpiration and leaf structure. • Describe how transpiration is affected by different factors • Explain and interpret results from a potometer experiment	
8	4.2.3.2	Xylem and Phloem	• Describe the structure and function of xylem and roots. • Describe the structure and function of phloem tissue • Describe what translocation is • Compare transpiration and translocation	
END OF UNIT TEST				
Where we will use these ideas again	• Year 10 – B4 Infection and response: Plant diseases and defences • Year 10 – B5 Homeostasis: Plant hormones; Seed germination Required practical (Triple only) • Year 11 – B7 Evolution: Selective breeding; GM crops • Year 11 – B8 Ecology: Abiotic factors; measuring population size in a habitat required practical; carbon cycle; deforestation; transfer of biomass			