



Learning Journey – 8I Photosynthesis

What have I done previously in my learning journey?									
Previously....	Identified and described the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explored the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigated the way in which water is transported within plants.								
In this topic...	We will explore how plants harness the Sun's energy in photosynthesis in order to make food. We will also learn how the plant's transport system is dependent on environmental conditions to ensure that leaf cells are provided with the water and carbon dioxide that they need for photosynthesis.								
We will develop our learning by studying the following each lesson:							RAG	Skills in Science checklist	
8I.01 Photosynthesis								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • State the word equation for photosynthesis. • Describe where plants get the reactants needed for photosynthesis and how they get into the plants. • Explain why plants need to photosynthesise. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.02 The Structure of the Leaf								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • Label the parts of the leaf structure. • Describe adaptations of plant leaves. • Explain how structural adaptations of plants' leaves aid photosynthesis. • Observe stomata under a light microscope. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.03 Products of photosynthesis and respiration								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • State how glucose is used in plants. • Describe how plants can make larger molecules from glucose molecules. • Explain that respiration is happening all the time in plants, but photosynthesis only happens when there is light. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.04 Testing leaves for starch								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • Use a given method to carry out the starch test on a leaf. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.05 Rate of photosynthesis – Planning (Day 1)								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • State that photosynthesis is a chemical reaction. • Describe what is meant by a limiting factor. • Explain how limiting factors can affect the rate of photosynthesis. • Plan an investigation into how light affects the rate of photosynthesis. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.06 Rate of photosynthesis – Planning (Day 2)								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • State that photosynthesis is a chemical reaction. • Describe what is meant by a limiting factor. • Explain how limiting factors can affect the rate of photosynthesis. • Plan an investigation into how light affects the rate of photosynthesis. 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.07 Transport systems in plants								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • Recall the plant parts that transports substances around the plant. • Describe and explain how xylem and phloem are adapted to their functions. • Investigate the transport systems of plants 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
8I.08 Evaporation and Transpiration								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
<ul style="list-style-type: none"> • Recall the plant parts that transports substances around the plant • Describe and explain how xylem and phloem are adapted to their functions • Investigate the transport systems of plants 								<input type="checkbox"/> Scientific Methods <input type="checkbox"/> Practical <input type="checkbox"/> Number Skills <input type="checkbox"/> Application <input type="checkbox"/> Communication	
Photosynthesis	Carbon dioxide	Glucose	Transpiration	Xylem	Phloem	Iodine	Starch	Limiting factor	
Stomata	Translocation	Light intensity	Temperature	Respiration	Endothermic	Oxygen	Chloroplast	Chlorophyll	



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Ad Astra 

Future Learning	In Year 11 you will study in more detail the process of photosynthesis. You will investigate the different methods used to measure the rate of photosynthesis. You will also understand how knowledge of photosynthesis can be used in green houses. More time will be spent on the transport systems in plant and investigations related to transpiration.
In careers	If you enjoy gardening, then photosynthesis will be extremely useful. Understanding how greenhouses work allows us to control the growth of different plant species. Learning about how plants transport minerals and water enables people who work with plants to determine the best conditions for growth and hence profit.