



Subject: Year 8 Photosynthesis

Prior Key stage 2 Knowledge			
<ul style="list-style-type: none"> Plants - identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore 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. Investigate the way in which water is transported within plants. 			
Overarching Topic:			
<p>Why is this topic being studied at this time?</p> <p>How does it fit into the wider subject curriculum?</p>	<p>Without photosynthesis, life as we know it would not exist; Photosynthesising organisms increased the amount of oxygen in the atmosphere, creating an environment suitable for animals. In an era where there is such a focus on deforestation and the negative impact of this on human health and the atmosphere it is essential students understand the process that makes plants important.</p> <p>This unit builds on Variation and classification 'Environment and feeding relationships'. It relates to Energy resources, digestion, Respiration, interdependence, Compounds and mixtures, Environmental chemistry. It provides the foundation for work in key stage 4 on limiting factors in Photosynthesis, energy transfer through an ecosystem and the mineral requirements of plants.</p>		
	Essential	Core	Ambitious
<p>The Big Questions (What questions will students be able to answer upon mastery of the topic?)</p>	<p>What is the name of the green pigment found in chloroplasts? What is the job of the stomata? What are the reactants and products of photosynthesis? How do plants obtain resources for photosynthesis?</p>	<p>What is the word equation for photosynthesis? Why are guard cells needed? How are other organisms are dependent on Photosynthesis? Can I Sketch a line graph to show how the rate of photosynthesis is affected by changing conditions.</p>	<p>What are particular conditions that could affect plant growth? What adaptations do plants have to help them survive? Why are most plants green? What differences do we see with plants throughout the seasons? Why do these happen? What are the products of photosynthesis used for? Compare photosynthesis and respiration. How could we survive without plants?</p>
<p>The Key Skills/ Techniques</p>	<p>The sophistication and application of skills will become more advanced as students' progress through the essential, core and ambitious knowledge</p>		
	<p>Skill/Technique</p>	<p>How will this skill be developed?</p>	
	<p>1. Graphing & Drawing</p>	<p>Draw graphs with suitable scales, axes and units. Correct line of best fit. Appreciation of anomalies and processed data. Scientific drawing of cells, concepts and scientific equipment.</p>	
	<p>2. Variables</p>	<p>Identify independent, dependent and control variables and devise experiments to include these to ensure valid results. Appreciation of uncertainty.</p>	
	<p>3. Data Analysis</p>	<p>Describe, explain and predict trends. Graph and table data interpretation. Identify links and patters within and between topics. Statistical analysis of data to include mode/median/mean/range determination. Drawing justified conclusions from presented data.</p>	
	<p>4. Application</p>	<p>Apply known and taught theory in unfamiliar contexts. Making links to taught theory and extracting key ideas. Communicating using correct scientific terminology.</p>	
<p>5. Working Scientifically</p>	<p>Identify hazards and planning to limit risk. Describe how to improve accuracy/precision/repeatability/reproducibility/validity. Evaluate reliability of methods and investigations, taking in to account data analysis.</p>		