



What have I done previously in my learning journey?								
Previously....		You have learnt previously about photosynthesis. This has involved learning about: - The different reactants needed in photosynthesis. - The importance of adaptations of the root.						
In this topic...		You will learn more about plant systems. This will include learning about: - How the leaf is adapted for photosynthesis. - The transport methods such as transpiration and translocation. - The importance of the stem and the use of chromatography in separating the pigments in a leaf. - 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
9B.11 The Leaf - Explain the adaptations of the leaf - Describe how each part is adapted to its function - Know the different parts of the leaf								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
9B.12 Chromatography - Describe what a mixture. - Describe chromatography, including the terms stationary phase and mobile phase, and identify pure substances using paper chromatography - Investigate how paper chromatography can be used to separate different colour substances (including calculation of Rf values)								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
9B.13 Chromatography of the Leaf (Part 1) Investigate how paper chromatography can be used to separate different colour substances (including calculation of Rf values)								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
9B.14 Chromatography of the Leaf (Part 2) Investigate how paper chromatography can be used to separate different colour substances (including calculation of Rf values)								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
9B.15 The Stem - Describe the structure and function of parts of the plant stem. - Explain how the xylem and phloem are adapted for their functions.								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
9B.16 Transpiration and Translocation - Describe the process of transpiration and translocation including the role of the different plant tissues. - Describe the process of diffusion, including examples. - Describe the role of stomata and guard cells in the control of gas exchange and water loss								☐ Scientific Methods ☐ Practical ☐ Number skills ☐ Application ☐ Communication
Key Vocabulary								
Leaf	Stomata	Guard cells	Palisade	Spongy mesophyll	Epidermis	Vasular bundle	Glucose	Oxygen
Chlorophyll	Chloroplast	Transpiration	Translocation	Xylem	Phloem	Glucose	Chromatography	Rf
Mobile phase	Stationary phase	Solvent	Soluble	Mixture	Element	Separation	Photosynthesis	Carbon dioxide



Future Learning	You will learn more about plants! You will study in detail the different methods available for exchanging materials such as: diffusion, osmosis and, active transport. You will also investigate how different pathogens can affect the internal transport system and therefore the health of the plant. Plants are an important part of medicine – in Triple Science you will read about how plants are used to make and treat some common diseases. Finally, you will explore photosynthesis in much more detail exploring the factors that affect the rate of photosynthesis.
In careers	From research and development to working with farmers in the field, there are many interesting jobs for those wishing to pursue careers in plant science. If it's a visit to the Botanical Gardens or looking after your own garden, knowledge of how plants work is extremely useful! 1. Floral designer National average salary: £37,121 per year Primary duties: A floral designer is responsible for designing and arranging real and artificial flowers for display. They may fill special orders based on customer requests, make traditional decorations for weddings, dances, funerals and other events and create their own original designs with various types of flowers and plants. 2. Horticulturist National average salary: £43,666 per year Primary duties: A horticulturist is responsible for cultivating, harvesting, planting, pruning and feeding plants to help them thrive. They may work for a garden centre, arboretum or another similar facility that has a lot of plants that require constant care. patterns, botany and soil science. 4. Professor National average salary: £56,434 per year Primary duties: A professor of plant science teaches the topics related to this focus of science to college students, typically in the botany or biology department. 5. Environmental scientist National average salary: £59,489 per year Primary duties: An environmental scientist is responsible for managing and protecting the environment and problems that threaten it, including pollution. Environmental scientists collect and aggregate data from air, food, water and soil samples, analyse the samples to identify environmental threats and concerns and develop plans to manage those threats. 11. Chemist National average salary: £76,344 per year Primary duties: A chemist analyses inorganic and organic compounds, testing chemical products and refining substances. They must perform research as they develop new products and test various components to ensure their safety. 14. Toxicologist National average salary: £95,310 per year Primary duties: Toxicologists, who often work in the field of biomedical science, are responsible for testing samples to determine the presence of various chemicals and toxins. They may test human or animal samples, such as tissue and bodily fluids, or they may test plant life to determine the effectiveness of various chemicals used to manage weeds and other growth.