



Portfields Primary School Medium Term Plan



Year Group – 3

Subject - **Science**

Strand -

Topic - **Plants**

Term – **Spring 2**

National Curriculum		Key Questions		Substantive Knowledge	Key Vocabulary	Real-Life Links
<p>Pupils should be taught to:</p> <ul style="list-style-type: none">identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersexplore 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 plantinvestigate the way in which water is transported within plantsexplore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal		<ul style="list-style-type: none">How do plants reproduce?Do all flowers look the same?How do insects know which flowers to pollinate?Why do flowers smell?What do seeds do?Can a plant live without its leaves?Do grass/trees make flowers?What conditions are perfect for a seed to grow?Where do weeds come from?How does the space between seeds affect how well they grow?Does seed size match plant size?Do plants take in water through their roots?How does water move through the plant?How do plants make their food?How does light affect plant growth?		<ul style="list-style-type: none">Know and identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersKnow what plants need for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plantKnow how water is transported within plantsIdentify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eatIdentify that humans and some other animals have skeletons and muscles for support, protection and movement	<p>structure flowering plants, roots, stem/trunk, leaves, flowers</p> <p>function nutrition, support, reproduction, makes its own food</p> <p>requirements for life and growth air, light, water, nutrients from the soil, room to grow needs vary, fertiliser</p> <p>life cycle flowers pollination, seed, formation, seed dispersal</p>	
Notes and guidance (non-statutory)		Technical Questions		Disciplinary Knowledge	Technical Vocabulary	Key Scientists
<p>Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p> <p>Note: Pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.</p> <p>Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.</p>		<p>What are nutrients? <i>These substances are needed by living things to grow and survive. Plants get nutrients from the soil and also make their own food in their leaves.</i></p> <p>What is fertilisation? <i>When the male and female parts of the flower have mixed in order to make seeds for new plants.</i></p> <p>What is the stamen? <i>The male parts of the flower. The stamen is made up of the anther and the filament. The filament's job is to hold up the anther. The job of the anther is to make the pollen.</i></p> <p>What is the carpel? <i>The female parts of the flower. Made up of the stigma, style and ovary. The job of the style is to hold up the stigma. The stigma collects the pollen when a pollinator brushes by it. The ovary contains the ovules, which are the part of the flower that gets fertilised and eventually becomes the new seed.</i></p>	<p>What is the Sepal? <i>Leaf-like structures that protect the flower and petals before they open out.</i></p> <p>What is pollination? <i>When pollen (a fine powdery substance produced by a flowering plant) is moved from the male anther of a flower to the female stigma.</i></p> <p>What is a Pollinator? <i>Animals or insects which carry pollen between plants. Examples include birds, bees and bats.</i></p> <p>What is germination? <i>When a seed starts to grow.</i></p> <p>What is seed dispersal? <i>A method of moving the seeds away from the parent plant so that the seeds have the best chance of survival.</i></p>	<ul style="list-style-type: none">making systematic and careful observations and, where appropriate, taking accurate measurementsusing results to draw simple conclusions and make future predictionsrecording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		
Lesson Breakdown						
Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	
<p><u>Learning Objective</u> LO: To identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers by labelling the parts of a plant.</p> <p><u>Success Criteria</u> <i>I can name the different parts of flowering plants and explain their jobs.</i></p> <p>Star Knowledge Plant nutrients <i>Plants get nutrients from the soil and also make their own food in their leaves.</i> Roots</p>	<p><u>Learning Objective</u> LO: To explore the requirements of plants for life and growth by investigating what plants need to grow well.</p> <p><u>Success Criteria</u> <i>I can set up an investigation to find out what plants need to grow well.</i> <i>I can make realistic predictions.</i> <i>I can use my observations to make conclusions.</i></p> <p>Star Knowledge What do plants need to grow well? <i>In order to grow well, plants need sunlight, water and carbon dioxide. Plants also need</i></p>	<p><u>Learning Objective</u> LO: To record findings over consecutive using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables by observing and recording plant growth.</p> <p><u>Success Criteria</u> <i>I can explain the different stages of a scientific investigation.</i> <i>I can record my observations using the PPS investigation template.</i> <i>I can present the results of my investigation using scientific language.</i></p> <p>Star Knowledge</p>	<p><u>Learning Objective</u> LO: To investigate the way in which water is transported within plants by observing the transport of food colouring through celery.</p> <p><u>Success Criteria</u> <i>I can investigate how water is transported in plants.</i> <i>I can predict what will happen?</i></p> <p>Star Knowledge How is water transported in flowers?<ul style="list-style-type: none">The roots absorb water from the soil.The stem transports water to the leaves.Water evaporates from the leaves.</p>	<p><u>Learning Objective</u> LO: To name the parts of the flowering plants involved in reproduction</p> <p><u>Success Criteria</u> <i>I can name the different parts of a flower and explain their role in pollination and fertilisation.</i></p> <p>Star Knowledge What is a flower? <i>A flower is the part of a plant that blossoms. Flowers produce the seeds that can become new plants. The flower allows the plant to reproduce via pollination.</i></p>	<p><u>Learning Objective</u> LO: To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p> <p><u>Success Criteria</u> <i>I can understand and order the stages of the life cycle of a flowering plant.</i></p> <p>Star Knowledge What is germination? <i>Germination where a seed starts to grow into a plant.</i></p>	

<p><i>The function of roots in plants is to convey water and nourishment to the rest of the plant</i></p> <p>Stem/Trunk <i>A plant's stem supports the plant and holds it upright to help it grow toward sunlight. The stem transports water and nutrients from the soil.</i></p> <p>Leaves <i>Leaves help plants collect sunlight, which they can then turn into energy (food).</i></p> <p>Flowers <i>Flowers are brightly coloured to attract pollinators (insects and birds). The insects carry pollen to other flowers. Flowers use the pollen to make seeds to grow new plants.</i></p>	<p><i>soil to grow in, from which they can extract nutrients, air and space to grow in.</i></p>		<ul style="list-style-type: none">• <i>This evaporation causes more water to be sucked up the stem.</i>• <i>The water is sucked up the stem like water being sucked up through a straw.</i>	<p>What is pollination? <i>Pollination is the process of transferring pollen from the male part of the plant, the anther, to the female part of the plant, the stigma, to fertilize the plant and make seedlings.</i></p>	<p>How are seeds dispersed? <i>seeds can be dispersed in various ways (by: wind, carrying (animals including humans), water, bursting, eating, carrying, shaking)</i></p>
Assessment Statements					
Working At					
<ul style="list-style-type: none">• Explain the functions of the different parts of plants.• Set up an investigation and make predictions.• Make observations and conclusions.• Identify different parts of a flower.• Identify and describe the stages of the life cycle of flowering plants. <p>Be able to answer questions based on their learning.</p>					