

Foston CE, Terrington CE VA & Stillington Primary Schools in Collaboration with Langton Primary School Progression Map

Subject: Biology- Understanding Plants

Subject Intent:

Within the Foston, Stillington and Terrington Federation, in collaboration with Langton Primary School, we intend that all our children will develop a deep curiosity about the world around them, and to experience the wonder which comes with gaining a knowledge and understanding about the processes and systems they can and can't see.

Our children will further develop:

- The ability to think independently and raise questions about working scientifically and the knowledge and skills that it brings;
- Confidence and competence in the full range of practical skills;
- Excellent scientific knowledge and understanding which is demonstrated in written and verbal explanations;
- Scientific enquiry skills to be embedded in each topic throughout the school to allow the children to build upon prior knowledge;
- The ability to undertake practical work in a variety of contexts;
- Have a clear understanding of the jobs available from science specialisms.

Key Concept	Overview	EYFS	Key Stage 1	Key Stage 2	
Understanding Plants	Topic	Year A -Spring Term 2 -Growing plants	Plants (Looking after plants Cycle A, How does your garden grow? Cycle B)	Plants and their lifecycles	Plants and their lifecycles
	Objectives NC / Milestones	To make simple observations about plants and explain why some things occur. Three and Four- -Plant seeds and care for growing plants. -Understand the key features of the life cycle of a plant -Begin to understand the need to respect and care for	<ul style="list-style-type: none"> • Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. • Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. • Observe and describe how seeds and bulbs grow into mature plants. 	LKS2 Identify and describe the functions of different parts of flowering plants: roots, stem, 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.	UKS2 Relate knowledge of plants to studies of evolution and inheritance. Relate knowledge of plants to studies of all living things.

	<p>the natural environment and all living things.</p> <p>Reception -Explore the natural world around them, making observations and drawing pictures of plants.</p>	<ul style="list-style-type: none"> Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<p>Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Relate knowledge of plants to studies of evolution and inheritance.</p> <p>Relate knowledge of plants to studies of all living things.</p>	
Knowledge	<p>Three and Four- -To know what is needed to plant seeds and how to care for growing plants. -To know that seeds will germinate into seedlings and grow into mature plants -To know the need to respect and care for the natural environment and all living things, and how they can do so.</p> <p>Reception - Reception children will be able to draw plants, including details of the key features such as leaves, stems and flowers.</p>	<p>To be able to identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen.</p> <p>Specific example/s to be taught: Oak, onion, horse chestnut, daffodil, sycamore, rose, tulip, poppy, strawberry, daisy, nettle, buttercup, dandelion.</p> <p>-</p> <p>To be able to identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers.</p> <p>Specific example/s to be taught: Leaf, roots, flower, stem, trunk, branch, bulb.</p>	<p>To be able to identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers.</p> <p>Specific example/s to be taught: Sunflowers (chn to plant their own from seed to recap KS1 knowledge).</p> <p>-</p> <p>To know 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.</p> <p>Specific example/s to be taught: Tomato plants and cactus plants</p> <p>-</p> <p>To know how water is transported within plants.</p> <p>Specific example/s to be taught:</p>	<p>To relate knowledge of plants to studies of evolution and inheritance.</p> <p>Specific example/s to be taught: Rainforest: Buttress roots Emergents Lianas Epiphytes</p> <p>-</p> <p>To relate knowledge of plants to studies of all living things.</p> <p>Specific example/s to be taught: Relate sexual reproduction of plants to the sexual reproduction of animals. That plants and other living things need to have their basic needs met</p>

			<p>-</p> <p>To observe and describe how seeds and bulbs grow into mature plants.</p> <p>Specific example/s to be taught: Sunflowers AND broad beans– germination, growth, flowering, seed.</p> <p>-</p> <p>To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>Specific example/s to be taught: With reference to their sunflowers and broad beans, children will be able to describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>-</p> <p>That plants can grow from seeds or bulbs.</p> <p>Specific example/s to be taught:</p>	<p>That water is transported through the xylem cells (example of a carnation)</p> <p>-</p> <p>To describe the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Specific example/s to be taught: Sunflowers – seeds germinate and grow into mature plants with flowers. The flowers attract pollinating insects which enables reproduction. New seeds are formed and grow once dispersed.</p> <p>-</p> <p>To relate knowledge of plants to studies of evolution and inheritance.</p> <p>Specific example/s to be taught: Rainforest: Buttress roots Emergents Lianas Epiphytes</p>	<p>to survive, but these basic needs may differ.</p>
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			<p>Sunflowers, broad beans, tulips, daffodils.</p> <p>-</p> <p>That seeds and bulbs germinate and grow into seedlings.</p> <p>Specific example/s to be taught: Sunflowers, broad beans.</p> <p>-</p> <p>That seedlings grow into mature plants.</p> <p>Specific example/s to be taught: Sunflowers, broad beans.</p> <p>That plants need light, water and a suitable temperature to grow.</p> <p>Specific example/s to be taught: Sunflowers, broad beans.</p> <p>-</p> <p>That germination is when seeds soak up water, swell and then start to grow.</p> <p>Specific example/s to be taught: Sunflowers, broad beans.</p>	<p>To relate knowledge of plants to studies of all living things.</p> <p>Specific example/s to be taught: Relate sexual reproduction of plants to the sexual reproduction of animals. That plants and other living things need to have their basic needs met to survive, but these basic needs may differ.</p>	
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Vocabulary	Seed Plant Grow Fruit Vegetable Roots Shoots Leaves Needs Food Water sunshine		<p>Soil- organic material that covers much of the earth’s surface.</p> <p>Seeds- the name given to the underground bud or stem of a seed plant at resting stage.</p> <p>Water-the liquid that makes life on Earth possible.</p> <p>Temperature- the amount of heat in something.</p> <p>Germination – the process by which a plant grows from a seed to a seedling.</p>	<p>Photosynthesis – the process by which green plants make their own food from sunlight.</p> <p>Growth – growth is an increase in size.</p> <p>Seed Dispersal – the way plants make sure the seeds are spread as far as possible from the parent plant.</p> <p>Reproduce/Reproduction - the process by which a living thing makes a likeness of itself.</p> <p>Nutrients – substances in food which our bodies process to enable it to function.</p> <p>Requirements – something which is needed.</p> <p>Germination – the phase of plant growth when a seed begins to sprout.</p>	

Parts of a Plant

Stem - the main structure that supports leaves and flowers.

Trunk- the main stem of a tree apart from branches or roots.

Flower/Petal- the main stem of a tree apart from branches or root.

Leaf/leaves- a part of a plant attached to a stem resembling a flat structure.

Root- part of a plant that is usually hidden underground.

Shoot- the above-ground part of the plant that bears the flowering buds, lateral buds and flowering stem.

Bulb- the name given to the underground bud or stem of a seed plant at resting stage.

Pollination – how insects help plants to make seeds.

Pollen – a fine powder produced by certain plants when they reproduce.

Anther – the part of a stamen where pollen is produced.

Filament – the part of a flower’s stamen which supports the anther

Stigma – the part of the pistil where the pollen germinates.

Pistil – the part of a flower which develops into a seed or fruit.

Style – the long tube which connects the stigma to the ovary.

Ovary- the female part of the flower.

Xylem – cells which carry water from the roots to all parts of the plants.

Roots – a part of the plant which holds the plant in the ground and keeps it upright.

Stems – the main stalk of the plant which develops buds and shoots and usually grows above ground.

Y5/6

Rainforest – a tall, dense forest which receives a lot of rain every year.

Buttress roots – Trees with shallow roots need the additional support in the form of buttress roots growing from the base of the trunk.

				<p>Emergents – Strong plants which grow above the rainforest canopy where there is the most sunlight.</p> <p>Lianas – Vines which climb to the canopy with roots growing in the ground.</p> <p>Epiphytes – Plants which grow on other plants, but not as parasites, taking nutrients from the air and the rain. Also known as “air plants”.</p>
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