

**St. Benedict's Primary School**  
**SCIENCE**  
**KNOWLEDGE AND SKILLS BUILDER**

Science element from the National Curriculum – PLANTS

Phase	Context for learning	Skills and Knowledge for PLANTS
EYFS	Traditional Tales Context Jack and the Beanstalk Understanding the World – The Natural World	Explore the natural world around them, making observations and drawing pictures of (animals and) <b>plants</b>
KEY STAGE 1	<p><b>YEAR 1 Autumn 1</b>  <b>ILP Enchanted Woodland</b>  <b>Context: Woodland Visit, Plant Parts, Planting Seeds and Bulbs</b>  <b>Big Question</b> Who lives in a woodland?  <b>Programme of Study</b>            Use their observations and ideas to suggest answers to questions.            Observe and describe how seeds and bulbs grow into mature plants.</p> <p><b>Year 1 Summer 2</b>  <b>ILP Dinosaurs Planet</b>  <b>Context:</b>  <b>Big Question</b> What is a dinosaur?  <b>Programme of Study Living Things</b>            Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.</p>	<p><b>Skills</b> (linked to habitats)            Observe the local environment throughout the year and ask and answer questions about living things and seasonal change.            Observe and describe how seeds and bulbs change over time as they grow into mature plants.</p> <p><b>Knowledge</b>            The local environment is a habitat for living things and can change during the seasons.            Plants grow from seeds and bulbs. Seeds and bulbs need nutrients from soil, water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers.</p> <p><b>Skills</b>            Describe, following observation, how plants and animals change over time</p> <p><b>Knowledge</b>            All living things (plants and animals) change over time as they grow and mature.</p>

	<p><b>Year 2 Summer 1</b>  <b>ILP Scented Gardens</b>  <b>Context: Growing a pizza garden/Windowsill Garden/Plant Parts/planting sunflowers</b>  <b>Big Question</b>  <b>Programme of Study</b>  Observe and describe how seeds and bulbs grow into mature plants.  Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.  Identify and classify.</p>	<p><b>Skills</b>  Observe and describe how seeds and bulbs change over time as they grow into mature plants  Describe how plants need water, light and a suitable temperature to grow and stay healthy  Observe objects, materials, living things and changes over time, sorting and grouping them based on their features and explaining their reasoning  <b>Knowledge</b>  Plants grow from seeds and bulbs. Seeds and bulbs need nutrients from soil, water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers.  Plants need water, light and a suitable temperature to grow and stay healthy. Without any one of these things, they will die.  Objects, materials and living things can be looked at, compared and grouped according to their features</p>
<p>LOWER  KEY  STAGE 2</p>	<p><b>Year 3 Autumn 1</b>  <b>ILP Heroes and Villains</b>  <b>COMPANION PROJECT Are all mushrooms deadly?</b>  <b>Programme of Study PARTS AND FUNCTIONS</b>  Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p>	<p><b>Skills</b> To learn about fungi and how they have positive and negative roles in our everyday lives.  <b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Fungi are a distinct type of organism. Yeast is a type of fungus. Beneficial uses of fungi include fungus-based medicines such as penicillin, food and drink production such as bread and some cheeses, recycling of nutrients and as a microhabitat for animals.</li> <li>• Harmful fungi include fungal diseases of plants and animals, including humans. Examples include athlete's foot and ringworm. Our houses and buildings can get fungal 'rot'.</li> <li>• Most of a fungus lives underground, feeding on dead and decaying organic matter. The only visible part appears as a 'mushroom', which is the fruiting body of a fungus.</li> <li>• Mushrooms have a 'volva' at the base of the mushroom, a stem (or stipe), a ring on its stem, a cap, and gills on the underside of the cap. Some mushrooms do not have all these parts, including the puffball, morel and bolete.</li> <li>• A mushroom's gills produce microscopic spores. Spores are like a plant's seeds and allow a mushroom to reproduce, dispersing by wind and rain. We can use mushrooms with 'exposed gills' to produce spore prints.</li> <li>• A spore print is a powdery deposit created by the spores of a mushroom falling onto a surface. Spore prints can be white, brown, black, purple, pink or yellow.</li> <li>• We can identify mushrooms in a number of ways, including their parts, smell, taste, colour, habitat, spore print and growing season.</li> <li>• Roughly speaking, only 1% of mushrooms are deadly and 4% are edible..</li> </ul>

<p>UPPER KEY STAGE 2</p>	<p>Year 5 Summer 2 ILP Allotment Context: What effects germination?/Propagators/Dissection /Plant reproduction Big Question? Context Allotment visit, composting, germination, propagation, dissecting flowers. Programme of Study linked to INVESTIGATION</p> <ul style="list-style-type: none"> <li>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> </ul> <p>Programme of Study linked to GATHERING AND RECORDING DATA</p> <ul style="list-style-type: none"> <li>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</li> <li>Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> </ul> <p>Programme of Study linked to PARTS AND FUNCTION</p> <ul style="list-style-type: none"> <li>Describe the life process of reproduction in some plants and animals.</li> </ul>	<p><b>Skills</b> Plan and carry out a range of enquiries, including writing methods, identifying variables and making predictions based on prior knowledge and understanding.</p> <p><b>Knowledge</b> A method is a set of clear instructions for how to carry out a scientific investigation. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.</p> <p><b>Skills</b> Gather and record data and results of increasing complexity, selecting from a range of methods (scientific diagrams, labels, classification keys, tables, graphs and models). Within a group, decide which observations to make, when and for how long, and make systematic and careful observations, using them to make comparisons, identify changes, classify and make links between cause and effect.</p> <p><b>Knowledge</b> Data can be recorded and displayed in different ways, including tables, bar and line charts, classification keys and labelled diagrams. An observation involves looking closely at objects, materials and living things. Accurate observations can be made repeatedly or at regular intervals to identify changes over time.</p> <p><b>Skills</b> Label and draw the parts of a flower involved in sexual reproduction in plants (stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal).</p> <p><b>Knowledge</b> Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants.</p>
	<p>Year 6 Spring 2 ILP Darwin's Delights</p>	

	<p><b>Context:</b> Strawberry DNA</p> <p><b>Big Question</b></p> <p><b>Programmes of Study</b></p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p>	<p><b>Skills</b></p> <p>Plan and carry out a range of enquiries, including writing methods, identifying and controlling variables, deciding on equipment and data to collect and making predictions based on prior knowledge and understanding.</p> <p><b>Knowledge</b></p> <p>A method is a set of clear instructions for how to carry out a scientific investigation, including what equipment to use and observations to make. A variable is something that can be changed during a fair test. A prediction is a statement about what might happen in an investigation based on some prior knowledge or understanding.</p>
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