



Year 1 Plants

National Curriculum Objectives:

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- Identify and describe the basic structure of a variety of common flowering plants.

Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted.

They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom) petals, fruit, roots, bulb, seed, trunk, branches and stem).

Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees.

Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.

Key Ideas

- Naming different plants and trees
- Identifying basic structures of plants

Assessment:

- Can they describe and name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant?
- Can they identify and name a range of common plants and trees?
- Can they name the trunk, branches and root of a tree?
- Can they discuss what they can see, touch, smell, hear or taste?

Greater Depth:

- Can they begin to describe what each part of a plant does? (e.g. roots, stem, leaves, petals, pollen) on a range of plants.

Prior Learning	Being scientists	Vocabulary
<p>In Early Years</p> <ul style="list-style-type: none"> Children plant seeds and care for growing plants Understand the key features of a life cycle of a plant. 	<ul style="list-style-type: none"> Go on a seed hunt trying to identify any seeds from a key (you will need to construct one for the kinds of seeds they may find). Plant the seeds they have found and tried to identify and see if they grow into the plants they predicted. Plant a seed in a jar so it is possible to see it germinate. As it germinates children observe and describe and predict what they think each bit emerging from the seed is for. Continue observing and describing over a few weeks and refine their ideas. How does the amount of light or warmth affect how well a plant grows? Do all plants have roots, how could we find out? Do all plants have leaves, how could we find out? If plants need water to grow, then surely the more the better. How does the amount of water affect how well a plant grows? 	Seed, evergreen, deciduous, plant, tree
<p>In Year 2:</p> <ul style="list-style-type: none"> 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. 		

Year 2 Plants

National Curriculum Objectives:

- 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. Pupils should use the local environment throughout the year to observe how different plants grow.

Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants.

Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy

Key Ideas

- a) Plants usually grow from seeds and bulbs.
- b) Plants need warmth, light and water to grow and survive.
- c) Flowering plants make seeds to reproduce and make more plants. Some plants die after producing seeds and others live for many generations.

Assessment:

- Can they describe what plants need to survive?
- Can they observe and describe how seeds and bulbs grow into mature plants?
- Can they investigate and describe the impact of removing light, soil or water from a growing or germinating plant?
- Observing changes over time.
- Can they suggest how to find things out?
- Can they use prompts to find things out?

Greater Depth:

- Can they describe what plants need to survive and link it to where they are found?
- Can they explain that plants grow and reproduce in different ways?

Prior Learning	Being scientists	Vocabulary
<ul style="list-style-type: none"> • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. 	<ul style="list-style-type: none"> • Grow some flowers, let them pollinate and show children where the seed grows. They then go on a walk looking for plants and flowers, taking pictures and deciding if a seed could form from the plant and if it has yet formed. • Does cress produce seeds, how could we find out? 	Seed, bulb, survive, life cycle, scattered, germination, plant

<ul style="list-style-type: none"> Identify and describe the basic structure of a variety of common flowering plants. 	<ul style="list-style-type: none"> Do all plants produce flowers and seeds? Pupils choose a few plants in the school grounds and keep simple diaries of how they change over the year in order to answer the question (see next chapter for extension of this problem) <p>Do all plants produce flowers and seeds and what happens to them after they have flowered? Pupils choose a few plants in the school grounds and keep simple diaries of how they change over the year in order to answer the question.</p> <ul style="list-style-type: none"> From this information pupils group plants into those that die after flowering and those that carry on living, are there any patterns? What happens to a daffodil (or other such flower) if it is left outside to form a seed and how is this different if it is cut and placed in water inside? What are the perfect conditions for my cress to grow? Which direction do shoots and roots grow after germination? 	
<p>In Year 3:</p> <ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary from plant to plant. Know the way in which water is transported within plants. 		

Year 3 Plants

Year 3 Plants	
<p><u>National Curriculum Objectives:</u></p> <ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary from plant to plant. 	<p><u>Key Ideas</u></p> <ul style="list-style-type: none"> Plants make their own food in their leaves to provide them with energy, growth, repair and reproduce. Leaves absorb sunlight and carbon dioxide. Plants have roots to provide support and to draw moisture from the soil, through stems to take water to the rest of the plant. The plant makes its food from water and carbon dioxide, using sunlight as energy, in the green parts of plants (mainly leaves).

<ul style="list-style-type: none">● Know the way in which water is transported within plants. <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>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>	<ul style="list-style-type: none">● Flowering plants have evolved specific parts to carry out pollination, fertilization and seed growth. p) Seed dispersal improves chances of enough seeds germinating and growing to mature.● Seeds and bulbs need the right conditions to germinate. They contain a food store for the first stages of growth (i.e. until the plant is able to produce its own food). <p><u>Assessment:</u></p> <ul style="list-style-type: none">● Can they identify and describe the functions of different parts of flowering plants? (roots, stem/trunk, leaves and flowers)? Range of plants.● Can they explore the requirement of plants for life and growth (air, light, water, nutrients from soil, and room to grow)?● Can they investigate the way in which water is transported within plants?● Can they explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal?● Can they record their observations in different ways? (Labelled diagrams, charts etc.) Use secondary sources● Can they plan and set up a fair test and explain why it was fair?● Can they explain what they have found out and use their measurements to say whether it helps to answer their question?● Can they set up a simple test to make comparisons? <p><u>Greater Depth:</u></p> <ul style="list-style-type: none">● Can they classify a range of common plants according to many criteria (environment found, size, climate required, etc.)?	
Prior Learning	Being scientists	Vocabulary
<p>Observe and describe how seeds and bulbs grow into mature 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. Pupils should use the local	<p>Teach children how pollination and fertilisation occur, let them dissect a flower (lilies and daffodils are good) and identify the parts of the flower. Use a microscope to observe the pollen. Children then chose a flower from the school and try and identify the reproductive organs.</p> <p>Bring in as many different flowers as possible, including grasses and trees. Children try and work out of they are wind or insect pollinated. They could check their predictions using the internet.</p> <ul style="list-style-type: none">● Leave a tub of compost outside and let weeds develop. Where did they come from? Were the seeds already in the compost or have they come from elsewhere? Plan and carry out an investigation to find out.	<p>Petal, stamen, carpel, fertilisation, dispersal, pollen, nectar, flowers, leaves, stem, roots</p>

<p>environment throughout the year to observe how different plants grow.</p>	<ul style="list-style-type: none"> • Collect as many different 'helicopter' seeds as possible and ask which ones would be able to go further (will need to explain that the longer it takes to fall the further the wind could blow them). Draw out questions like 'how does the wing length affect how long it takes to fall. This could be investigated with real seeds or modelling it with paper helicopters. • How does the space between seeds affect how well they grow? • Plants grow best when they are damp, warm and in light. Is this true for seed germination? • What can you predict about a plant and how it grows from the size of its seed? Plan and carry out investigations to test your ideas. <p>Provide children with small pots of already growing grass and cress. Cut back each plant to about 1/2 inch, predict and monitor how they both respond.</p> <ul style="list-style-type: none"> • How does the amount of light affect how well a plant grows? • Do plants take in water through their roots alone, their leaves or both leaves and roots? How could you find out? • Does the carbon dioxide enter at the top of the leaf or the underside of the leaf? How could you find out? • How are soils that retain water well different from those that don't? Do all plants prefer the same type of soil? • How is the growth of a plant affected by removing different amounts of leaves? • If we stop gases from getting in and out of leaves what will happen? How can we find out? • If you set up a sealed glass dome containing damp soil, normal air and some small flowering plants, what would you predict to happen over a long period of time? 	
<p><u>In UKS2:</u></p> <ul style="list-style-type: none"> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution 		