

OUR CHANGING WORLD

INTRODUCTION

In this module children will build on work in the Year 3 Plants module (How does your garden grow?) by going outside and observing plants in the local area at different times of the year. They will observe how the leaves on deciduous trees change greatly through the year whereas those on evergreen plants change less dramatically. They will observe that seeds, berries and flowers are visible on different plants throughout the year according to their different life cycles. As they learn about and explore their local environment, they will survey the variety of plant life found around the school and its locality and observe how this changes across the school year and with the seasons. They will observe the variety of flying insects that visit these plants, noticing how the quantity and variety of insect life varies at different times of the year and in different weather conditions. They will plant and grow sunflower seeds themselves, growing plants to produce flowers and seed heads in order to experience a complete growth cycle.

When working scientifically children will make careful observations of plants, leaves, seeds, fruits, berries and flowers. They will use these observations to identify how plants change throughout the year. They will observe changes that take place over time, noticing patterns in the measurements and observations they make, as they grow sunflower seeds and plants through a complete growth cycle.

Key vocabulary:

leaf, deciduous, evergreen, seed, berry, fruit, flower, seedling, seed head, grow, growth, habitat, soil type, variation, season, seasonal change, pollen, pollinate, nectar, honey bee, bumblebee, butterfly – Large White, Tortoiseshell, Peacock, observe, record, present

FACT FILE:

Leaves are important to a plant as it is here that the plant produces the food it requires to grow.

In winter it is difficult for **deciduous trees** to maintain their leaves properly so they therefore become dormant during this period and do not grow. In preparation for this the trees shed their leaves during autumn. The green chlorophyll is no longer produced and the other pigments in the leaves give rise to the reds and yellows, which start to become more visible. The leaves begin to die due to lack of nourishment and fall to the ground where they rot, often leaving leaf skeletons.

The leaves of **evergreen trees** do not change so dramatically through the year.

Not all plants have **flowers**, as they reproduce in different ways. This will be studied further in Year 5.

When a flower is fertilised many plants produce **seeds** in order to reproduce. New plants grow from them. Seeds are different shapes and sizes, which influences their method of dispersal.

In many plants fleshy tissue is produced around the seed to protect it: this is the **fruit**. The size of the fruit and the thickness of its tissue vary from species to species. Brightly coloured, fleshy fruits encourage animals to eat them, which in turn results in the seeds being dispersed. **Berries** are fruits but they are juicy. Blueberries and blackcurrants are true berries, while blackberries and raspberries are made up of lots of small fruits. In some plants, such as strawberries, the fleshy part of the fruit is at the centre and the seeds are on the outside. These are often referred to as 'false fruits'.

Flowering plants have the same basic parts – **petals**, **sepals**, **stamen**, and **ovule** – and are often brightly coloured, scented and contain nectar, but there is a vast variety of different shapes and sizes.

Insect-friendly planting includes: buddleia and hebe varieties, cherry, horse chestnut and other blossoming trees, cornflower, lavender, a nettle patch, a wild flower meadow, a vegetable patch, annual bedding plants and bulbs.

Flying insects are much more likely to be seen during sunny, calm periods of weather. If conditions are dull or, more significantly, cold and wet, very few will be seen regardless of the time of year.

It is not necessary at this stage for children to identify a wide variety of flying insects precisely. They should be given guidance about what to look for in broad terms, such as what a bumblebee and a honey bee look like. They do not need to know the names of different types of bumblebee or

honey bee. There are a number of common species of butterfly that might be seen in gardens or in the school grounds. These are relatively easy to identify – Large White, Tortoiseshell and Peacock.

Common misconceptions:

- Deciduous trees die in the winter and then come alive again in the spring. They do not die; they are simply dormant.
- In order to reproduce all plants must produce flowers and seeds. (There are vegetative means of reproduction that do not involve flower and/or seed production).
- Seeds need light to germinate, because plants need light in order to grow well. In most cases, seeds do not require light in order to germinate: they do need water, the right temperature conditions and oxygen. Exceptions to this would be plants in forests or woods. Seeds there are stimulated to grow when the right amount of light comes through the canopy.

Children often do not realise that seeds, berries and fruits can be found on different plants throughout the year as their life cycles are at different stages. For example, blackberries are seen on plants from June to November whereas holly bears its fruit through winter. Conkers, the seeds of chestnut trees, fall in October and November, whereas dandelions disperse their seeds in spring.

Big Cat book links

Catching Flies June Crebbin 978-0-00-746181-3 Band 9 Gold	A beautiful poetry book exploring the themes of wildlife, the seasons and life's simple pleasures.
Star Gazing Celia Warren 978-0-00-746531-6 Band 12 Copper	A beautifully illustrated poetry book focusing on the delights of the natural world.
Jaws and Claws and things with Wings Valerie Bloom 978-0-00-746539-1 Band 14 Ruby	A poetry collection inspired by the strange and wonderful creatures in the natural world