OUR CHANGING WORLD: PLANTS

INTRODUCTION

This module provides children with an opportunity to apply much of the early knowledge and understanding of plants that they encounter during Module 1, Plant Detectives, where they identify and name, describe and compare, for example, flowers and trees in their local environment. It also links to OCW: Sensing Seasons and introduces ideas that will be further developed in Year 2, Module 2, The Apprentice Gardener, and in the Our Changing World module where children grow seeds and bulbs over time.

Lessons within this module require children to revisit plants and trees repeatedly over an extended period of time and helps them to develop their understanding that plants change as they grow and according to the seasons and weather conditions. In the case of trees, children learn about the differences between a deciduous and an evergreen tree and look at real examples across the seasons. The children also explore changes to leaves and flowers, and observe the variety of both, describing them in detail and becoming more aware of how their numbers and appearance change during different seasons.

In order to ensure that children have access to a variety of plants and trees teachers will need to identify parts of the school grounds where plants are accessible. If the immediate environment does not provide the necessary variety, then the search may need to be extended beyond the school grounds to include, for example, a local community garden, allotments, parks, verges or any green spaces where there are plants that the children can safely access.

Creating a ‘square foot’ garden

Measure out a suitable 120 cm x 120 cm area. Edge the bed with untreated wooden boards. Make sure that the soil is weed free and remove as many stones as possible. Dig in compost mixed with some well-rotted manure. Divide the area into sixteen 30 cm (1 ft) squares. These can be marked out by nailing string across the bed. When planning the layout, make sure that the tallest plants are at the back of the bed, with sizes decreasing towards the front. The bed should face south for maximum sunlight. For more information and advice visit: www.schoolsorganic.net

National Curriculum:

Observe changes across the four seasons

Identify and describe the basic structure of a variety of common flowering plants, including trees

Working Scientifically:

Observing closely using simple equipment

Identifying and classifying

Scientific Enquiry:

Observing changes over time

Key vocabulary:

plant (verb and noun), leaf, leaves, bud, twig, branch, tree, roots, stem, shoot, bud, flower, leaf, rough, smooth, shiny, glossy, wrinkled, crinkled, crunchy, crisp, soft, green, olive, brown, orange, red, yellow, rust, flower, blossom, petals, stem, stalk, small, little, big, large, single, lots, deciduous, evergreen, plug plant, soil, compost, manure, dig, prepare, water, watering, vegetable, fruit, names of vegetables and fruits, salad, wash, clean, peel, cut, chop, grate, mix, sprinkle, combine

FACT FILE:

The main function of leaves is to make food for the plant by the process of photosynthesis. Light acts on the chlorophyll pigments, which give plants their green colour, and by a complex series of reactions combine carbon dioxide and water to produce carbohydrates (sugars and starch). During winter the conditions are not conducive for growth in most trees and other plants. Deciduous trees and plants rest, and live off the food that they stored during the summer. They begin to shut down as the days shorten and temperatures drop. The green chlorophyll disappears from the leaves. As the bright green fades away, yellow and orange colours begin to be visible. Small amounts of these colours have always been in the leaves. They cannot be seen in summer because they are masked by the green chlorophyll.

A simple flower, for example, a buttercup or lily, has petals and contains a single set of reproductive organs at the centre. Many common flowers that children will be familiar with are ‘compound’ flowers. Compound flowers appear to be single flowers, but the flower itself is actually made up of numerous small flowers or ‘florets’, arranged within a flower head. Daisies, dandelions and sunflowers are good examples of compound flowers. The petals around the outside of a sunflower are in fact ‘ray flowers’. At the centre of the flower head there are many tiny button shaped florets, each containing both male and female reproductive organs. It is acceptable for young children to use the broad term ‘flower’ to describe both simple and compound flowers at this stage.

An evergreen tree (or plant), for example, holly, ivy, pine and spruce varieties, has leaves throughout the year. Leaves are shed continually and replaced, but not in a particular season. Deciduous trees, for example, oak, horse chestnut, beech, silver birch and cherry, lose leaves at some point during the autumn, as the end of the growing season arrives. The leaves firstly change colour, as the level of chlorophyll used by the trees to make food during the growing season falls. Each tree then has a period of dormancy, when they may at first sight appear ‘dead’. In spring, signs of life become evident and the tree produces buds and then leaves in preparation for the new growing season.