

Key Stage 1 & Key Stage 2

## WORLD OF PLANTS

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### General points about this talk:

Talks generally last 30-40 minutes and take place out in the Park in all weathers; please ensure that your pupils wear suitable clothes for the conditions.

This talk is led by the Gardeners and may vary slightly between different staff members. We will adapt this talk according to the age of the children and as such it is suitable for pupils from KS1 right through to GCSE level.

We endeavour to keep group sizes below 20 children as some of this talk may take place in our Tropical House.

The normal meeting point for this talk will be at the greenhouses at the bottom of the Walled Garden.

### What we will cover in the talk:

There are estimated to be over 400,000 species of plants worldwide which form the basis for life on Earth. Our World of Plants talk takes a look at just some of the ways that plants provide life, through flowers, food, oxygen and the regulation of the water cycle.

Everything we eat comes directly or indirectly from plants. Throughout human history, approximately 7,000 different plant species have been used as food by people in the forms of fruit, grains and vegetables. In this talk, we examine some of the food plants that we can grow here at the Park and we may also discuss plants that can be used for other uses such as shelter, fuel, latex, clothing and pigments. In addition, we may cover plants that are used for medicines; with 25% of all prescription drugs coming from plants (directly or as derivatives).

Plants form the basis of most habitats and an important aspect of this talk will be plant and animal interactions. We take a look at how animals utilise plants for protection and for their homes and also at how plants protect themselves from animal predation. Finally, we take a look at some of the more unusual plants at the Park from carnivorous plants through to plants that were alive when the dinosaurs roamed the Earth.



## Animals we may include:

We cannot guarantee which plants you will see during your talk but you will be shown several of the following:

Banana palms	carnivorous plants
buttress roots	gingko
lianas	deciduous trees
coco de mer	coniferous trees
brazil nuts	

## Areas of the new National Curriculum that this talk addresses:

### Year 1

Plants:

- 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, including trees.

**Non-statutory guidance:** 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, stem). 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.

### Year 2

Living things and their habitats:

- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including microhabitats



- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants:

- 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.

**Non-statutory guidance:** Pupils should be introduced to the terms 'habitat' and 'microhabitat'. Study a variety of plants and animals within their habitat and observe how living things depend on each other. They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.

Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants. Note: seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.

### Year 3

Plants:

- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, 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
- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Rocks:

- describe in simple terms how fossils are formed when things that have lived are trapped within rock.

**Non-statutory guidance:** 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. Note: pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens.



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.

#### Year 4

Living things and their habitats:

- recognise that environments can change and that this can sometimes pose dangers to living things.

**Non statutory guidance:** Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals, flowering plants and non-flowering plants. Note: plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, for example ferns and mosses. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.

#### Year 5

Living things and their habitats:

- describe the life process of reproduction in some plants and animals.

**Non-statutory guidance:** Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.

#### Year 6

Evolution and inheritance:

- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution
- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.



**Non statutory guidance:** Pupils might work scientifically by: observing and raising questions about local animals and how they are adapted to their environment; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels. They might analyse the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.

