Science: Plants

Definition:a living organism of the kind exemplified by trees, shrubs, herbs, grasses, ferns, and mosses, typically growing in a permanent site, absorbing water and inorganic substances through its roots, and synthesizing nutrients in its leaves by photosynthesis using the green pigment chlorophyll.

Biology definition: The word **biology** is derived from the greek words /bios/ **meaning** /life/ and /logos/ **meaning** /study/ and is **defined** as the science of life and living organisms. An organism is a living entity consisting of one cell e.g. bacteria, or several cells e.g. animals, plants and fungi.

POS: Y3 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.

Prior learning Y1/Y2

- 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.

Links to other science topics:
Plants Year 1 and 2
Plant Reproduction Year 5

Disciplinary concepts:
Function: what is the function of each part of the flower?
Growth: what are the requirements for growth, pollination, seed formation and dispersal?
Variation: How do plants vary?

Common misconceptions:
•plants eat food
•food comes from the soil via the roots
•flowers are merely decorative rather than a vital part of the life cycle in reproduction
•plants only need sunlight to keep them warm
•roots suck in water which is then sucked up the stem

Core Knowledge:

- many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom.
- roots absorb water and nutrients from the soil and anchor the plant in place.
- stem transports water and nutrients/minerals around the plant and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal.
- leaves use sunlight and water to produce the plant's food.
- some plants produce flowers which enable the plant to reproduce. Pollen, which is produced by the male part of the flower, is transferred to the female part of other flowers (pollination). seeds, sometimes contained in berries or fruits which are then dispersed in different ways.
- different plants require different conditions for germination and growth.

Wider Knowledge:
Jan Ingenhousz (1730-1799) was a Dutch scientist who is best known for showing that light is essential for photosynthesis. As a consequence he is remembered as the person who discovered photosynthesis.
Pollination, the process of transferring pollen grains was first discovered by the German botanist Rudolf Jakob Camerarius.

Working scientifically:

- identifying everyday objects according to the given property
- asking simple questions and recognise that they can be answered in different ways
- observing closely using simple equipment
- perform simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

End Goals:
•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

CPD: Reach out CPD
Science Association / STEM website