

Science

Plants Year 3

Remember when

Names for common wild and garden plants, including deciduous and evergreen trees. (Y1)

Parts and structure of a flowering plants, including trees (including leaves, flowers, fruits, roots, bulbs, seeds, stem, trunks and branches). (Y1/Y2)

Stages of growth from a seed or bulb into mature plants (Y2)

Plants need water, light and a suitable temperature to grow and stay healthy. (Y2)

Sticky knowledge

The petals on a flower are usually bright - this is to attract bees and other insects so that they can collect pollen to make seeds.

Leaves use carbon dioxide and sunlight to make food for the plant.

The stem carries water and other nutrients from the roots to the rest of the plant and also helps to keep the plant upright so that the sunlight can reach it easier.

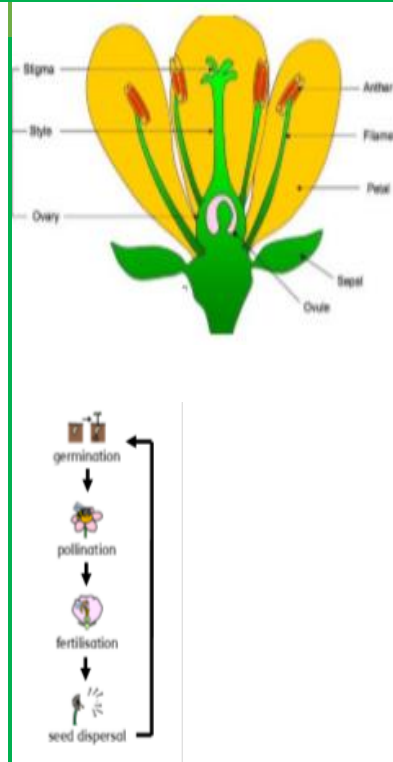
The roots help to 'anchor' the plant in the soil. They also absorb water and nutrients from the soil for the stem to carry to the rest of the plant.

Different plants need different amounts of water, sunlight, nutrients, room to grow and temperature depending on the type of plant. For example, cacti need less water than other plants.

Diagram of the parts that flowers play in the life cycle of flowering plant;

A flower produces seeds so that new plants can grow.

Pollination occurs when pollen from the anther is transferred to the stigma by bees and other insects. The pollen then travels down and meets the ovule. When this happens, seeds are formed - this is called fertilisation. Seeds are then dispersed so that germination can begin again.



Key vocabulary

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| absorb | petal |
| anther | pollen |
| carbon dioxide | pollination |
| dispersed | roots |
| fertilisation | seed |
| filament | dispersal |
| germination | seed formation |
| life cycle | sepal |
| light | stem |
| nutrients | stigma |
| ovary | style |
| ovule | temperature |
| oxygen | transferred |

National Curriculum

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.

Investigation skills

Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.

Identifying differences, patterns, similarities or changes related to simple scientific ideas and processes.

Using straightforward scientific evidence to answer questions or to support their findings.

Common Misconceptions

Some children may think:

- 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.

| | LO | Lesson outline |
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| Lesson 1 LO: To know what different parts of a plant do. Enquiry type: Research | SK: The petals on a flower are usually bright - this is to attract bees and other insects so that they can collect pollen to make seeds. Leaves use carbon dioxide and sunlight to make food for the plant. | What does each part (flower, root, stem/trunk, leaves) do? Give children clues so they can match each part to its function. Chn to name and describe the function of each part of the plant using word mats/sentence starters. SEN: Label and match function GD: detailed descriptions |

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| | <p>The stem carries water and other nutrients from the roots to the rest of the plant and also helps to keep the plant upright so that the sunlight can reach it easier.</p> <p>The roots help to 'anchor' the plant in the soil. They also absorb water and nutrients from the soil for the stem to carry to the rest of the plant.</p> <p>Skill: recording findings using simple scientific language, drawings, labelled diagrams</p> | <p>What would happen if a plant did not have;</p> <p>Leaves?</p> <p>Roots?</p> <p>Flowers?</p> <p>(teachers to cut these parts off an existing plant and see what happens over the course of a week.)</p> |
| <p>Lesson 2</p> <p>LO: To know what plants need to survive.</p> <p>Enquiry type: Comparative and Fair test</p> | <p>SK: Different plants need different amounts of water, sunlight, nutrients, room to grow and temperature depending on the type of plant. For example, cacti need less water than other plants.</p> <p>Skill: asking relevant questions and using different types of scientific enquiries to answer them</p> | <p>Look at different seed packets/plants/trees. Why do different plants need different amounts of space between them? Why do they need space if they don't move around?</p> <p>Pupil-led investigation (link back to Y2 knowledge):</p> <p>Place ready-grown plants in different conditions to eliminate variables (light, water, nutrients, other materials, soil)</p> <p>Do plants grow better in soil with added nutrients?</p> <p>How does this vary from plant to plant? (each class look at different types of seed) (11-12)</p> <p>Feed back and record results (after time...)</p> |
| <p>Lesson 3</p> <p>LO: To understand how water is transported in flowering plants.</p> <p>Enquiry type: Observation over time</p> | <p>SK: The stem carries water and other nutrients from the roots to the rest of the plant and also helps to keep the plant upright so that the sunlight can reach it easier.</p> <p>The roots help to 'anchor' the plant in the soil. They also absorb water and nutrients from the soil for the stem to carry to the rest of the plant.</p> <p>Skill: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> | <p>Discuss how water is transported in flowering plants (white flower)</p> <p>Observe what happens when a flower is placed in coloured water. Why does this happen?</p> <p>Children to annotate a photograph of the flower before and after. (May need leaving a few days).</p> <p>Discuss concept cartoon: Will the temperature of the water affect how quickly the plant changes colour? What would be the issues in carrying out this investigation?</p> |
| <p>Lesson 4</p> <p>LO: To understand that a flower is made of different parts.</p> <p>Enquiry type: Research</p> | <p>SK: The petals on a flower are usually bright - this is to attract bees and other insects so that they can collect pollen to make seeds.</p> <p>Diagram of the parts that flowers play in the life cycle of flowering plant;</p> <p>A flower produces seeds so that new plants can grow.</p> <p>Skill: recording findings using simple scientific</p> | <p>Children to dissect a flower, making detailed observations and answering questions about each part of the flower. Label the part of the flowers using post-it notes and take a photo for books.</p> <p>LA – paired with HA children</p> |

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| | language, drawings, labelled diagrams | |
| <p>Lesson 5</p> <p>LO: To understand how plants reproduce.</p> <p>Enquiry type: Research</p> | <p>SK: A flower produces seeds so that new plants can grow. Pollination occurs when pollen from the anther is transferred to the stigma by bees and other insects. The pollen then travels down and meets the ovule. When this happens, seeds are formed - this is called fertilisation. Seeds are then dispersed so that germination can begin again.</p> <p>Skill: recording findings using simple scientific language, drawings, labelled diagrams</p> | <p>Recall what the children already know about life cycles. How would this apply to plants? What stages do they know would be part of the life cycle of a plant? Discuss, draw and label the life cycle of a flowering plant (To draw on small pieces of plain paper).</p> <p>LA – Draw the stages, match to correct labels and descriptions and place in the correct order.</p> <p>MA – Draw the stages, label each and complete cloze activity to describe each stage and place in order.</p> <p>GD – Draw, label and describe each stage.</p> <p>Additional activity: Children to re-enact how bees transport pollen between plants using cheese puffs.</p> |
| <p>Lesson 6</p> <p>LO: To know the different ways that seeds can be dispersed.</p> <p>Enquiry type: Research/ Grouping and Classifying</p> | <p>SK: Seeds are dispersed so that germination can begin again.</p> <p>Skill: gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> | <p>What are the different ways in which seeds are dispersed?</p> <p>Are different seeds transported in different ways?</p> <p>Discuss scenarios where seeds can be spread in different ways. Children to describe the methods of seed dispersal using pictures.</p> |
| Working towards | End of unit assessment | |
| = | Working at Age related expectations | Working at a greater depth |