

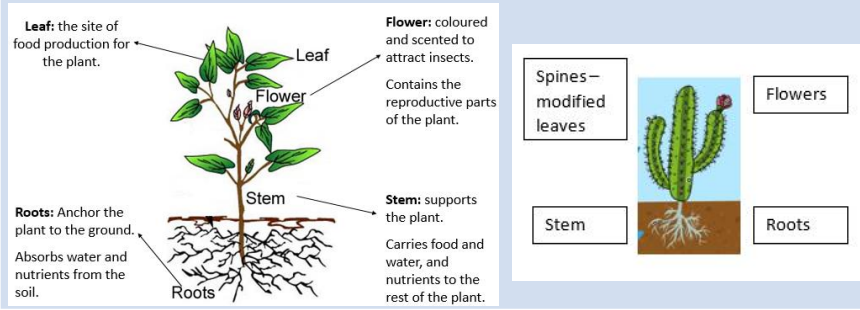
National Curriculum Science - Knowledge

Key Learning

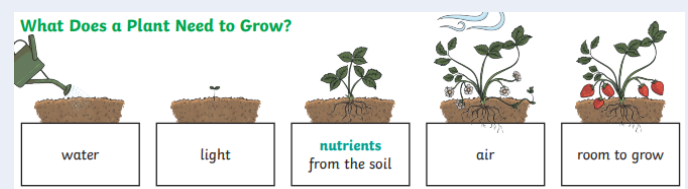
Vocabulary

- 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

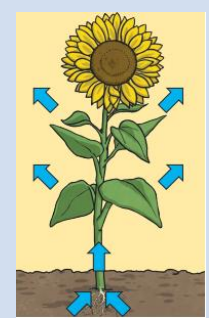
Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. Each of these have a different job to do.



Explore the requirements of plants for life and growth and how they vary from plant to plant eg: Cactus and carnations



Water is transported up the stem to the leaves where it evaporates. This evaporation causes more water to be drawn up the stem.



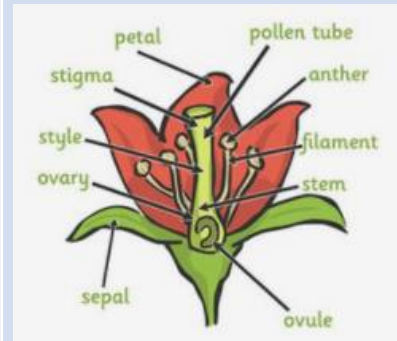
- Nutrients** – these substances are needed by living things to grow and survive
- Evaporation** – the process when liquids turn into a gas.
- Germination** – the development of a plant from a seed
- Seed dispersal** – A method of moving the seeds away from the parent plant so that the seeds have the best chance of survival.
- Stamen** - The male parts of the flower includes anther and filament
- Anther** – Makes pollen
- Filament** – holds up the anther
- Fertilisation** – when the male and female parts of the flower mix to make seeds
- Carpel** – The female parts of the flower includes the stigma, style and ovary
- Stigma** – collects the pollen as it brushes by
- Style** – holds up the stigma
- Ovary** – contains the ovules that get fertilised to become the new seed
- Pollination** – when pollen is moved from the anther to the stigma of another plant.
- Pollinator** – animals or insects that carry pollen between plants

National Curriculum Science – working scientifically

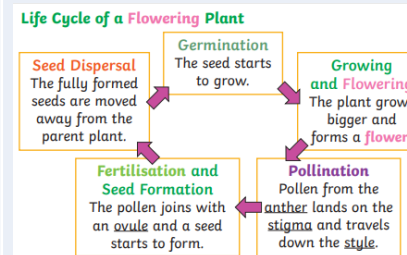
- Asking relevant questions and using different types of scientific enquiries to answer them
- **Setting up simple practical enquiries, comparative and fair tests**
- **Making systematic and careful observations** and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- **Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables**
- **Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions**
- **Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions**
- **Identifying differences, similarities or changes related to simple scientific ideas and processes**
- **using straightforward scientific evidence to answer questions or to support their findings.**

Key Learning continued...

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). This forms seeds.



Seeds are sometimes contained in berries or fruits which are then dispersed in different ways.



Scientific investigations

What do plants need to grow well? (build on Y2 investigation –what do plants need to grow: light, water, temp) to focus on what they need to grow well.

- Plan a simple practical enquiry to answer the question.
- Report on findings of enquiry results
 - Draw simple conclusions to answer the question.

How is water transported in plants?

- Set up practical enquiry (comparative)
- Make careful observations and record over time. Identifying changes.
- Record findings using scientific vocabulary.

Sequence of learning - Plants

- 1** **Parts and functions of flowering plants:** Retrieve prior knowledge about parts of a flowering plant – root, stem, trunk, leaves, flowers and be able to identify the functions of these parts. Show children two different types of flowering plant lily and a cactus – compare parts and functions.
- 2** **What do plants need to grow well?** Retrieve prior knowledge about the 7 life processes (MRS GREN) what does this tell us about what plants need to grow well? Plan an investigation to test their ideas (observing and measuring strand) Make a prediction. Set up the investigation.
- 3** **What do plants need to grow well? Part 2** – describe your observations – why might this be the case? What does it tell us about what plants need to grow well? Record and present findings of the investigation and write a conclusion to answer their question. Do all plants need the same? Discuss the difference for the cactus – can survive without much water etc
- 4** **How is water transported in plants?** Recap the function of the stem – as support and to transport water and nutrients. Set up a practical enquiry to find out how temperature affects the speed water is drawn up the stem – water with food colouring and white carnations. How are we going to make it a fair test?
- 5** **How do flowers help plants reproduce?** Retrieve learning about the function of a flower. Dissect lily/ tulip to identify the key parts of a flower (petal, anther, stamen, filament, stigma, ovary and style) what jobs do each of these parts have? How do they work together for pollination and fertilisation.
- 6** **The lifecycle of a plant** – Retrieve learning from last lesson about the parts and functions of the flowers and how they work together for pollination and fertilisation. How does pollination, fertilisation and seed dispersal fit into the life cycle of flowering plants? Create a lifecycle diagram with details of each stage.