

Y3 Knowledge Organiser Science - Topic: Plants (Spring term)

Objectives/outcomes:

- I can identify different parts of flowering plants
- I can predict what will happen in an investigation
- I can make careful observations and conclusions
- I can identify and describe the main stages of the life cycle in flowering plants
- I can explain the functions of different parts of plants

Working Scientifically objectives:

- Asking relevant questions
- Setting up enquiries and choosing equipment
- Setting up fair tests (with help)
- Carefully observing and measuring
- Recognising when to use other sources of information to find answers
- Choosing how to record information - tables, tally charts, Venn and Carroll diagrams and bar charts
- Looking for patterns - identifying and classifying
- Explaining results - drawing conclusions and using results

Key vocabulary

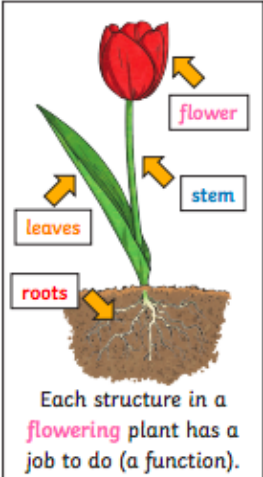
- **Roots** - These anchor the plant into the ground and absorb water and nutrients from the soil
- **Stem** - This holds the plant up and carries water and nutrients from the soil to the leaves. A stem is the trunk of the tree.
- **Leaves** - These make food for the plant using sunlight and carbon dioxide from the air.
- **Flowers** - These make seeds to grow into new plants. Their petals attract pollinators to the plant.
- **Nutrients** - These substances are needed by a living thing to grow and survive. Plants get nutrients from the soils and also make their own food in their leaves.
- **Fertilisation** - When the male and female parts of the flower have mixed in order to make seeds for new plants.
- **Petal** - The brightly coloured part of the flower that attracts insects to pollinate the plant.
- **Stamen** - The male parts of the flower. The stamen is made up of the

anther and the filament. The filament's job is to hold up the anther. The job of the anther is to make pollen.

- **Carpel (pistil)** - The female parts of the flower. Made up of the stigma, style and ovary. The job of the style is to hold up the stigma. The stigma collects the pollen when a pollinator brushes by it. The ovary contains the ovules, which are part of the flower that gets fertilised and eventually becomes the new seed.
- **Sepal** - leaf-like structures that protect the flower and petals before they open out.
- **Pollination** - when pollen (a fine powdery substance produced by a flowering plant) is moved from the male anther of a flower to the female stigma.
- **Pollinator** - Animals or insects which carry pollen between plants. Examples include birds, bees and bats.
- **Germination** - When a seed starts to grow
- **Seed dispersal** - A method of moving the seeds away from the parent plant so that the seeds have the best chance of survival.

<p><u>Investigations:</u></p> <ul style="list-style-type: none"> Dissecting a flower to examine each part Observing over time how water travels around a plant using food colouring in the water 	<p><u>Resources</u></p> <ul style="list-style-type: none"> Powerpoints Variety of flowers Videos Water Food colouring 	<p><u>Curriculum Links:</u></p> <ul style="list-style-type: none"> Maths - recording and reading data from graphs and tables, measuring, estimating, predicting
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Key knowledge

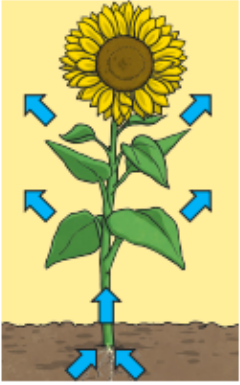


Each structure in a **flowering** plant has a job to do (a function).


How Water Moves through a Plant

- The **roots** absorb water from the soil.
- The **stem** transports water to the **leaves**.
- Water **evaporates** from the **leaves**.
- This **evaporation** causes more water to be sucked up the **stem**.


The water is sucked up the **stem** like water being sucked up through a straw.




What Does a Plant Need to Grow?




water




light



food and nutrients from the soil

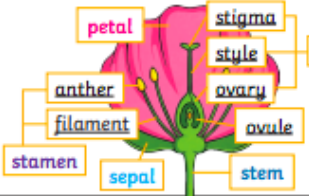


air



room to grow

Different plants vary in how much of these things they need. For example, cacti can survive in areas with little water, whereas water lilies need to live in water.




The **flower's** job is to create seeds so that new plants can be grown.

Life Cycle of a Flowering Plant


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    graph TD
      A[Seed Dispersal  
The fully formed seeds are moved away from the parent plant.] --> B[Germination  
The seed starts to grow.]
      B --> C[Growing and Flowering  
The plant grows bigger and forms a flower.]
      C --> D[Pollination  
Pollen from the anther lands on the stigma and travels down the style.]
      D --> E[Fertilisation and Seed Formation  
The pollen joins with an ovule and a seed starts to form.]
      E --> A
  
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Seed Dispersal
Seeds can be dispersed by:




dropping




carrying




eating



water



shaking



bursting