Beech Hill Primary School Knowledge Organiser

Topic:	Year group	Term
Plants	3	Summer

Background knowledge

Children will recap the parts of a flowering plant, then look at their functions and why they are important to the plant. In addition to learning the functions of the different plant parts, it is important to give children opportunities and activities to apply their knowledge. This could include a discussion on what could happen to a plant if the different parts were damaged or were not functioning properly.

Children apply their knowledge of plant parts from the previous step and complete a plant dissection. When dissecting, children should carefully cut and observe the different parts of a plant including the roots, leaves, stem and flowers. Children should have the opportunity to dissect a range of plants and identify the different parts and their functions. They can apply their knowledge of plant parts and note the differences in the structures between various plants.

In Year 3, children do not need to be aware of the terms independent, dependent and controlled variables. However, they should be able to identify what is changed in the experiment, what is measured and what is kept the same.

Children should be able to describe what seeds are and the conditions in which they germinate and grow best, with reference to both water and temperature.

Children learn about the reproductive parts in flowering plants. They learn that the "stamen" is the male reproductive parts, and the "pistil" is the female reproductive parts. However, children do not need to be aware of the individual structures that make up the stamen and pistil as these will be covered in Year 5.

Children are introduced to the process of pollination. They learn that pollination involves the transfer of pollen grains from the male parts of a flower (stamen) to the female parts (pistil) of a flower. Children also learn that seeds are formed when pollen grains and eggs join together.

Seed dispersal can be through wind, animals, water or an "explosion" within the seed pod to disperse the seeds. Children should be given the opportunity to observe different types of seed and should be encouraged to link the seeds' features to seed dispersal. Children should understand the importance of seed dispersal for allowing plants to spread out and grow, and

to prevent plant overcrowding. Give children opportunities to provide verbal or written explanations on the importance of seed dispersal.

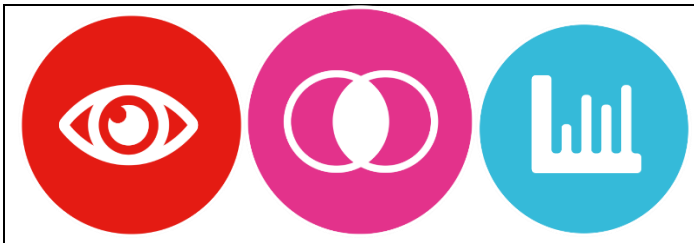
Common misconceptions

- Children may think plants get their food from the soil or that plants eat food like animals do.
- Children may think that the flowers do not have a specific function for the plant.
- Children may think that the stems, leaves and flowers of different plants all look the same.
- Children may think that the roots "suck" in the water. Clarify to them that the roots absorb the water.
- Children may think that plants take in water from the leaves or the flowers.
- Children may think that a seed and a seedling are the same thing.
- Children may think that bees are the only pollinators.
- Children may think that flowers can only be pollinated by animals. Pollination can also occur when wind carries the pollen from the stamen to the pistil.

What should I already know?
In years 1 and 2, children observed and identified plant parts, such as roots, stem, leaves and flowers.

National Curriculum Objectives / Key Skills	The Journey
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.	1. Parts of a plant and their functions 2. Plant dissection 3. Plan – plant growth 4. Plant – plant growth 5. The stem and water transportation 6. Looking at seeds 7. Reproductive parts in plants 8. Pollination 9. Seed dispersal 10. Life cycle of plants

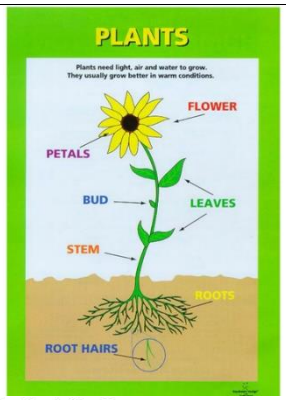
Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **<u>Working scientifically</u>** Using straightforward scientific evidence to answer questions or to support their findings. Talk about criteria for grouping, sorting and classifying (non-statutory). Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Setting up simple practical enquiries, comparative and fair tests. Identifying differences, similarities or changes related to simple scientific ideas and processes. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences (non-statutory). – Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. **<u>Scientific enquiry</u>**	

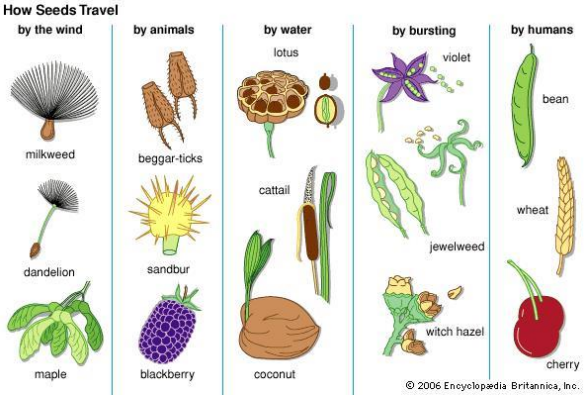


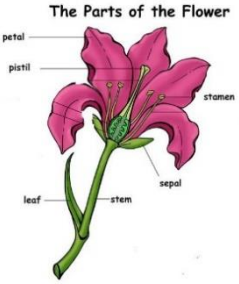
Outcomes
An overview of what children will know / can do Working towards: I can name the parts of a plant and with support, describe their functions. I can work with a group to investigate what a plant needs to grow. I am beginning to present my results. I can name some of the stages of the plant life cycle. I know some conditions a plant needs to grow. Expected: I can describe the functions of the parts of a flowering plant. I can predict and investigate what a plant needs to grow and can take simple measurements. I can present this information in a bar chart and say what it shows. I know the conditions a plant needs to grow. I can describe the life cycle of a plant. Exceeding: I can confidently describe the functions of the parts of a flowering plant. I can predict and confidently investigate what a plant needs to grow and can take accurate measurements. I can present this information in a bar chart and draw simple conclusions. I know the conditions needed for a plant to grow. I can describe the different stages of the life cycle of a plant in detail.

Key Vocabulary	Timeline / Diagrams

Plant – a living thing that grows.
Root – grows underground. It keeps the plant anchored in the soil and takes up water and nutrients.
Stem – keeps the plant upright and transports water and nutrients to the leaves and flowers.
Leaf – part of the plant that makes the plants food.
Flower; the usually colourful part of the plant where the seeds are made.
Pollen; a yellow powder which is carried from one part of a plant to another so seeds can be made.
Petal; the colourful part of the flower which attracts insects.
Pollination : the pollen is moved from one plant to another so seeds can be made.
Seed – the part of a plant which moves away from the parent plant and can grow into a new plant
Seed dispersal- the way in which a seed moves away from a parent plant.
Function- the job something does.







Key people / places

STEM career; botanist.

Assessment questions / outcomes

• What is a life cycle? • What are the stages in a plant's life cycle? • What is a seed? • What is germination? • What is pollination? • What is seed dispersal? • How does this plant disperse its seeds? • How long is this plant's life cycle? • Are all plants' life cycles the same length? • How are seeds formed? • What is seed dispersal? • What are the ways in which seed dispersal can occur? • How does the wind disperse seeds? • How do animals disperse seeds? • How does an "explosion" disperse seeds? • Why is seed dispersal important? • Are there patterns between the structure of seeds and how they are dispersed? • What is pollen? • Which part of a plant produces pollen? • What is pollination? •