Year 3 – Plants	**Main Outcomes:** • 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.	**Focus:** Science - biology

What should I already know?

- The names of some **common** garden **plants** (e.g. poppy, rose) and the names of some **common** wild **plants** (e.g. daisy, dandelion, nettle).
- That deciduous trees lose their **leaves** in the autumn every year.
- That **evergreen** trees have green leaves all year round.
- The parts of a plant including **petals, fruits, roots, bulbs, seeds, stem, trunks** and **branches.**
- That **plants** are living things that require things to grow
- That **plants** often have **flowers.**

What I will do

I will have weekly or blocked science lessons. In lessons, I will be taught a skill and I will gain knowledge and understanding through the process of scientific enquiry (observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources).

Possible lines of enquiry

- Compare the effect of different factors on plant growth, for example, the amount of light, water, fertiliser or space they have.
- Discover how seeds are formed by observing the different stages of plant life cycles over a period of time.
- Look for patterns in the structure of fruits that relate to how the seeds are dispersed.
- Observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.

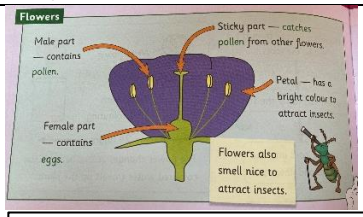
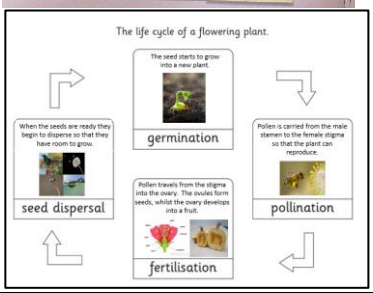
Vocabulary	Meaning
carbon dioxide (CO_2)	Carbon dioxide is a chemical compound that is usually in the form of a gas that can be found in the air. It is made up of one atom of carbon and two atoms of oxygen.
common	something that is found in large numbers or it happens often
egg or ovule	a single cell produced by flowering plants, which contains the female sex cell (gamete)
fertilisation	when **pollen** and an **egg** join together to make a **seed**
flower	the part of a **plant** which is often brightly coloured and grows at the end of a stem
flowering	trees or plants which produce **flowers**
fruit	something which grows on a tree or bush and which contains **seeds** or a stone covered by a substance that you can eat
germination or sprouting	the beginning of growth, usually of a seed, spore or bud, in response to warmth, air and water
growth	a gradual increase in size
leaf/leaves	the parts of a tree or plant that are flat, thin, and usually green
life cycle	the different stages of life for a living thing
nutrients	substances that help plants and animals to live and grow
nutrition	A plant or animal getting all the nutrients it needs to stay healthy
plant	a living thing that grows in the earth and has a **stem, leaves,** and **roots**
pollen	a fine powdery substance produced by flowering plants, which contains the male sex cell (gamete)
pollination	the transfer of pollen from the male to the female part of the plant
reproduce	when an animal or **plant** produces one or more individuals similar to itself
reproduction	when old plants make new plants; **pollination** and **fertilisation** are steps in **reproduction.**
roots	the parts of a **plant** that grow under the ground; they take in **nutrients** and water, and help to support the **plant**
seed	the small, hard part from which a new **plant** grows; **formation** is when the seed forms; **dispersal** is when the seeds are spread to a new area
stem (or trunk)	the thin, upright part of a **plant** on which the **flowers** and **leaves** grow

Resources

Hamilton Science planning: plants (all planning also saved on SharePoint).
https://www.hamilton-trust.org.uk/science/year-3-science/plants-roots-and-shoots/

Knowledge and Skills Map – Science at Estcots School

Knowledge to understand

Plants need five things to be strong and healthy	1. Light from the sun 2. Air (which contains CO_2) 3. Water 4. **Nutrients** (e.g. minerals from the soil) 5. Room to grow Different plants will need different amounts of these five things – e.g. ferns need lots of water but cacti need only a little.
Flowering plants have different parts with different functions; **plants** make their own food, which is a source of energy to grow and **reproduce**	**Reproduction: Flowers** have colours and smells to attract insects. They also make **pollen** and **eggs**, which are needed to make **seeds**. **Nutrition: Leaves** use sunlight to change water and **carbon dioxide** (CO_2) **gas** into food. The **stem** (or **trunk**) carries water and **nutrients** from the **roots** to the rest of the plant. **Roots** absorb water and **nutrients** from the soil. **Support**: The **stem** holds the plant up towards the light. **Roots** fix the plant to the ground so it doesn't blow away.
Plants transport water from the **roots** through the **stem** to all parts of the **plant**	Water is absorbed from the soil by the roots. It is then sucked up by the stem. Finally, it goes into the leaves and flowers.
Flowers contain the parts needed for the plant to **reproduce** and that the **life cycle** includes **pollination, seed formation, seed dispersal** and **germination**	 

Skills to learn (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.

Cross-curricular (maths)

- statistics: interpret and present data using bar charts, pictograms and tables
- measurement: measure, compare, add and subtract: lengths (m/cm/mm)

Equipment to become familiar with

Rulers/tape measures for measuring in cm and mm

Data loggers (we have these in the resources room)

Evidence of Learning

Science books
Photos
Videos
Pupil conferencing
Teaching and learning observations
Learning walks
Data analysis

How will I know what I've learnt?

See KS2 teacher assessment exemplification for science

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/763065/2018_key_stage_2_teacher_assessment_exemplification_science.pdf

See also Hamilton Science_Assessment_Y3 (saved in planning folder on Sharepoint).

KS2 quizzes:

https://gcequiz.com/quiz/ks2-science-quizzes

https://churchfieldsjunior.com/test-your-skills-science/