Year 3 Science Medium Term Plan - Summer 1 - Plants

Unit Rationale

This unit builds on children's learning and enquiry from Nursery to Year 2. It allows children to apply their knowledge of the growth of plants from seeds and bulbs and the name of plant parts and their functions. It then develops their understanding of the function and life cycle of the flower.

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.

National Curriculum Objectives

- 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. (L7, L8, L9 & L10- some covered in Y2)
- Investigate the way in which water is transported within plants. (L11)
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (L2, L3, L4 & L6)

Cross Curricular Links:

The Flower by John Light
Under the canopy – Tales of trees

LYFTA – One billion trees:
https://teacher.lyfta.com/search-content/storyworlds/preview/1660
Beekeeping:
https://teacher.lyfta.com/search-content?query=beekeeping&sortby=relevant

Disciplinary Knowledge: Working Scientifically

Substantive knowledge:

Know that different plants have the same parts.
The names of parts of plants and their function - Root, flower, petal, stem, leaf
The functions these parts play in a plant.
Name the different parts of a flower.
Describe the function of different parts of a flower.
Bees are attracted to flowers for their nectar

	Pollen sticks to a bee when it visits a flower The bee takes the pollen to another flower, where it sticks to the stigma That seeds are dispersed in different ways. - wind - water - explosion - attached to animals - eaten by animals Name and describe the 5 main stages of the life cycle of a flowering plant: 1 - germination 2 - growing and flowering 3 - pollination 4 - fertilisation and seed formation 5 - seed dispersal
Trips and Visits	**Modern Day Links: STEM**
Midfield bees Local area (field, park etc)	Bee keeping – bees role in pollination Gardening
Prior learning:	**What next?**
Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (y1) Identify and describe the basic structure of a variety of common flowering plants, including trees (y1) Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants) Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 – Plants)	Year 4 - living things and their habitats ● Identify and study plants ● group a wide selection of living things that include flowering and non-flowering plants Year 5 - Living things and their habitats ● describe the life processes of reproduction in some plants Year 6 - living things and their habitats ● classify plants Year 6 - evolution and inheritance ● identify how plants are adapted to suit their environment in different ways and that adaption may lead to evolution.

Lesson	WALT	What should the children remember?	Lesson plan and outcome	Key Vocabulary	Key Questions
Lesson 1	**WALT:** identify parts of a plant and know their function **Resources:** images of a plant or an actual plant. **Enquiry skills/Working scientifically:** Research using secondary sources. **Scientific skills:**	Know that different plants have the same parts. The names of parts of plants and their function Root, flower, petal, stem, leaf The functions these parts play in a plant.	**Organisation** For this lesson children will recap the functions of a plant from year 1. They will also use outside space within the school to look at plants and discuss similarities and differences. **Retrieval** (SLIDES 3 & 4) **Introduction** Explain that the topic this term is all about plants. (SLIDE 6 and 7) Give the children a plant or a picture of a plant where all of the parts are visible. Get the children to write the parts of the plant that they already know and then write what the function is. Children complete this in groups - oracy purpose - gather and share information (SLIDE 8) Recap the vocabulary from Year 2 **Main Part** Explain that we are going to look in more detail about the role of each part of the plant. Watch the video https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-parts-of-a-plant/zvdkpg8 (SLIDE 9) Leaves - make food through photosynthesis	roots, stem, plants, leaves/leaf, flower, function, photosynthesis.	What are the parts of this plant? What are the functions of these parts? Do all plants have the same parts?

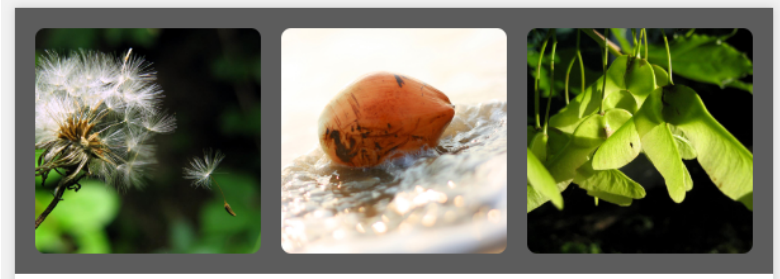
			Root: Anchors to the ground + Absorbs water Stem: Supports the plant + transports nutrients and water Flower: For reproduction - makes fruit and seeds. Petals attract insects. Task - children label and describe the functions of each part of a plant in their books, using the knowledge they now have. (SLIDE 11) Introduce that the leaves make food for the plant. This process involves turning sunlight into food in a process called photosynthesis. (SLIDE 12) Ask the children - do all plants have the same parts? Explain that we are going to go outside on a plant hunt to identify the different parts of different plants. While the children are outside, question them on what the parts are and what their functions are. Go outside to allow the children to look at some plants. (SLIDE 13) What do all the plants have in common? What differences are there between them? - observe plants- do they all have roots, stems, leaves and flowers? Give the children an opportunity to explore and then gather them around a tree and discuss the parts of a tree. (Common misconception that trees do not have stems- this is a trunk) Get the children to write what they have found into their books using the sentence stems. (SLIDE 14) **Outcome** children will be able to name and locate different parts of the plant. children will also be able to **Quiz** (SLIDES 15 & 16) **Adaptation**		

			Some children could have pictures to help support their understanding of each part and being able to name the different parts. Some children could have pictures with arrows to support labelling the different parts.		

Lesson 2	**WALT:** name and describe the parts of a flower **Resources:** Plants - like daffodils or lilies **or** the paper sheet parts of the plant. **Enquiry skills/Working scientifically:** Research using secondary sources. **Scientific skills:**	Name the different parts of a flower. Describe the function of different parts of a flower.	**Organisation** Children will work in small small groups to build a flower and label the parts for reproduction. children can use paper parts of a plant or a real plant. Children will then draw their own diagram using the new vocabulary and how they make new seeds. **Retrieval** (SLIDES 2 & 3) children to recap the parts of a plant and their function. **Introduction** Explain that today we are going to explore how new plants are created.  Get the children to discuss in their trios which plant is the odd one out. Children to write their predictions. (SLIDE 5) trios - 2 children talk, one listens and summarises at the end - purpose - generate ideas and opinions Children write which they think is the odd one out in their books. **Main Part** Explain that today we are going to think about how plants make new plants. Teach the words and definitions: anther, filament, stigma, ovary and style MTYT, repetition, actions etc. (SLIDES 6 & 7)	petal stigma style ovary filament anther function	What are the parts of this plant? What are the functions of these parts? Do all plants have the same parts?

			Get the children to identify these parts on the plant or using the image of a plant. (SLIDE 8 and/or 9) Explain that each part of the plant has a function in the making of a new plant. Watch the video. (SLIDE 10) https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-the-anatomy-of-the-flower/zjmhkmn Get the children to draw or label a diagram of the inside of the flower. children to expand on their labelling by writing their function. (SLIDES 11 & 12) Come back to the odd one out. Get the children to focus on the middle parts of the flower. Do they all look the same? What can they label or talk about the flower now? Add to their answer in a different colour. (SLIDE 13) **Outcome** children will be able to name some of the parts of the plant that are involved in the making of new plants. **Quiz** (SLIDES 14 & 15) **Adaptation** Some children to have simple parts of a plant and gradually build on what they already know.		
Lesson 3	**WALT:** understand the role of bees and insects in pollination **Resources:** parts of a plant image counters or sticky notes.	Bees are attracted to flowers for their nectar Pollen sticks to a bee when it visits a flower The bee takes the pollen to another flower, where it sticks to the stigma	**Organisation** Children will work in small groups to discuss the different parts of the pollination process. They will also role play the events to reinforce their understanding. They will also sequence the events of pollination. **Retrieval** (SLIDES 2 & 3) **Introduction**	attract pollinate nectar pollen anther stigma style ovary	

	pollination storyboard sheet. **Enquiry skills/Working scientifically:** Research using secondary sources. **Scientific skills:**		Recap with the children the vocabulary for creating a new plant: anther, filament, stigma, ovary and style MTYT, repetition, actions etc. (SLIDES 5 & 6) **Main Part** Explain to the children that today we are going to look at pollination and how insects and bees help create new plants. Introduce the vocabulary pollen, nectar and pollination. MTYT, repetition, actions etc. (SLIDES 7) Watch the video. (SLIDE 8) Children to role play pollination with some children being bees and others being flowers. Children visit different flowers for nectar and get pollen stuck to them (take a counter) This pollen is then given to other flowers when the bee visits for more nectar. The children (bees) then visit each table and take some nectar and a coloured counter (the pollen). They then visit another table and place the counter/pollen down and take some more nectar and another counter/pollen. (SLIDE 9) Children to then describe the pollination process using the sheet. (SLIDE 10) 1. attracted to the flower. 2. drinks nectar and gets covered in pollen 3. goes to another plant. 4. pollen sticks to the stigma of the new plant. 5. Plant grows new seeds. **Outcome** Children draw and write the stages of pollination based on the 5 stages that they role played. **adaptation -** provide sentence starters to support challenge by researching pollination in different flowers		

			Children to have images to help them put in order pollination from bees and insects. (SLIDE 11)Oracy - purpose - analyse and evaluate children to traverse - stand in two parallel lines opposite a partner. Change partners by moving one person down to the other end of the line. Pose the question - Are bees and insects important to plant pollination? provide sentence stems and key vocabulary **Quiz** (SLIDE 12 & 13)		
Lesson 4	**WALT:** know how seeds are dispersed. **Resources:** odd one out images images of seeds for sorting sorting table **Enquiry skills/Working scientifically:** Observing and classifying **Scientific skills:**	That seeds are dispersed in different ways. - wind - water - explosion - attached to animals - eaten by animals	**Organisation** For this lesson children will work in small groups. They will sort seeds or images of different seed by how they are dispersed. **Retrieval** (SLIDES 2& 3) **Introduction** (SLIDE 5)  Oracy - paired talk - purpose - generate new ideas and opinions discuss their ideas and then write them down using the sentence stem.	seed, fruit, dispersal, animal, wind, water and explosion,	

			Main Part Teach the word and definition of seed dispersal using MTYT, repetition, actions etc. (SLIDE 6) BBC Two - Science Clips, Life Cycles, Seed dispersal Watch the video. (SLIDE 7) oracy - paired talk - understand and reason. Get the children to think about the different ways in which the seeds were dispersed in the video. Which ways can they name that they saw in the video, by animals eaten and caught on them , wind, water and explosion. (SLIDE 8) (SLIDE 9)- optional second video Introduce the children to the plants that we are going to look at. **Ideally you will have a variety of actual seeds here for the children to look at and explore.** Ask the children which ones they recognise and if there are any they don't. (SLIDE 10) Using the resources, get the children to sort the seeds into the categories wind, animals, water and explosion. (SLIDE 11) Go through with the children which ones are dispersed in which way. (SLIDE 12) Return to the odd one out activity. What can they add now? Can they spot the ways in which the seeds are dispersed? Get the children to add in another coloured pen. (SLIDE 13) **Outcome** children will be able to name some different ways in which seeds are dispersed. children will also name some seeds that disperse in that way. **Quiz** (SLIDES 14& 15)		

			Adaptation Some children could think about seeds which could be dispersed in more than one way. Poppy seeds are eaten and they explode. Some children to have fewer pictures to sort and focus on two categories.		
Lesson 5	**WALT - know the life cycle of a flowering plant**	Name and describe the 5 main stages of the life cycle of a flowering plant: 1 - germination 2 - growing and flowering 3 - pollination 4 - fertilisation and seed formation 5 - seed dispersal	**Retrieval** (SLIDES 2& 3) **Introduction** (SLIDE 4 and 5) Ask children to nest - what is a life cycle? Discuss what they understand by 'life cycle' (SLIDE 6) -teach the meaning of life cycle. (SLIDE 7) - cold task Ask the children to draw and/or write what they think are the stages of a plant's life cycle. (SLIDE 8-13) tell the children that there are 5 main stages to the life cycle of a plant. Go through each one in turn. (SLIDE 14) chd work in groups to act out the life cycle of a flowering plant. **Task** (SLIDE 15) draw and describe the life cycle of a plant in books. Quiz (SLIDE 16 and 17)		