YEAR 3 PLANTS PLANNING

Class: **Term: Autumn 1** **Subject: Science** **Unit: Plants**

Differentiation and support (Detailed differentiation in weekly plans.) SEN: write up investigations on writing frames. Support from more able partners in mixed ability work. Additional adult support. GT: provide headings for experiment sections. Send off to experiment sooner than rest of group. Provide with equipment, but provide less scaffolding on how to conduct the experiment. Encourage conclusions that draw on scientific knowledge and enquiry skills.	English: writing up experiments in sequence using technical language Maths: measuring length and volume, drawing result tables and charts ICT: using laptops to research information Geography: how environment affects plants D&T: drawing and annotating diagrams

W	Learning Objective	Skills/knowledge/activities	Resources	Assessment: Success criteria	Evaluation
1a	Self-assess knowledge of plants (15 mins)	Children complete a mind map on what they know already about plants	Mind map frames	Formative assessment exercise	
1b	Explore the requirements of plants for life and growth (air, sunlight, water, nutrients, warmth, time and room to grow) and how they vary from plant to plant Understand that climate impacts on the lives of plants and that they are adapted to suit their climate (45 mins)	Intro: Ask the children to think, pair, share what things plants need in order to be able to thrive Ask the children if they can think of any examples of plants that need more or less sunlight or water e.g. cacti and oranges Watch the video about what plants need to be able to grow at https://www.bbc.co.uk/bitesize/topics/zpxnyrd/articles/zkp2jsg (if the link does not work, Google 'BBC Bitesize KS1 What do plants need to grow?') – note: the video does not mention that plants need nutrients and enough space to grow Explain that there are however thousands of species of plants and they vary greatly in what they need to survive; for example, plants in the tropical rainforests need to be able to survive without having lots of space to themselves because there is such a high density of plants there Explain that plants are adapted to their environments and watch video that shows adaptations of some Arctic plants at https://www.bbc.co.uk/bitesize/clips/zwy7tfr (if the link does not work, Google 'BBC video plant adaptations') Explain independent work Revise the features of each climate zone: desert (hot and dry), polar (cold and dry), temperate (mild) and tropical (hot and wet)	Check videos work and have open and ready to play Descriptions of the adaptations of different plants Writing frames	MUST: know that plants need air, water, sunlight, nutrients, warmth, time and room to grow SHOULD: be able to tell which climate a plant lives in based on a description of its adaptations COULD: explain why a plant might not survive in a particular climate	

		Main: Children read descriptions of adaptations of plants that live in a particular climate zone / biome From the adaptations, children need to guess which climate zone / biome the plant lives in and explain their choice: I think plant number 1 lives in a _____ climate because … Extension: Answer questions on why one of the plants would not be suited to a particular climate Plenary: In partners children compare their answers and discuss reasons for any differences Discuss correct answers to independent work Revise the things that plants need to survive Watch the videos at https://www.bbc.co.uk/bitesize/topics/zy66fg8/articles/zcmtk2p (if the link does not work, Google 'BBC Bitesize What does a plant need to live') https://www.bbc.co.uk/bitesize/topics/zy66fg8/articles/z98jpbk (if the link does not work, Google 'BBC Bitesize What are the requirements for plant growth?')			
2	Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers (1 hour)	Intro: Show children a real plant and explain the names of the different parts of the plant: roots, leaves, stem, flower and fruit. Watch the video at https://www.bbc.co.uk/bitesize/topics/zy66fg8/articles/zcjnp39 (if the link does not work, Google 'BBC Bitesize What is a plant') Model how to draw and label a diagram of a plant, and add bullet point notes about each part of the plant under its name e.g. under ROOTS, have a bullet point of 'absorb water' Emphasise that their diagrams need to be large (not tiny) and that they should be tall enough to take up most of the page Revise how to use the contents and the index of a non-fiction book to find information in it Model for children how to navigate the websites that we will be using Main: Children to draw and label a diagram of a plant Split class into two groups, with each group taking it in turns to spend 15 minutes using books or computers / tablets to find out more about the function of the roots, leaves, stem, flowers and fruit of plants, and adding this information to their diagrams	Plant (ideally with fruit on it) Video open and ready to play with ads skipped and / or closed Computers / tablets Non-fiction books on plants Hyperlinks saved on network as a temple .dotx so that children can all	MUST: draw and label a diagram of a plant SHOULD: annotate their diagram with extra information COULD: find out the meaning of technical words e.g. chlorophyll, and use them to annotate their diagrams	

		After 15 / 20 minutes, group using books to switch to using computers / tablets and vice versa Have the following websites open on computers / tablets: https://www.bbc.co.uk/bitesize/topics/zy66fg8/articles/zcjnp39 (if the link does not work, Google 'BBC Bitesize What is a plant') https://www.generationgenius.com/external-plant-parts-reading-material/ http://www.mbgnet.net/bioplants/parts.html https://smartclass4kids.com/science/plants-facts/part-of-plant/ Children to move through the websites in this order, as the reading level becomes more challenging for each subsequent website Display words such as photosynthesis, chlorophyll, transpiration, osmosis, xylem, phloem and respiration on the board for G + T to find out the meaning of, and then use to label diagram Watch video on parts of a plant at https://www.youtube.com/watch?v=AfTp1ObzNHM (play and skip and / or close ads before lesson) and continue to add information to diagrams Plenary: In partners, children to compare their diagrams. Did partners have any different information to each other? Revise the key functions of each part of a plant	open them at the same time		
3	Investigate if plants grow better with or without water Use standard units to measure volume (1 hour)	Experiment: Children plant seeds in some soil in a plastic cup. Leave cups on a windowsill, watering some a little, watering some a lot and not watering others. Intro: Revise how we learnt that plants need warmth, water and sunlight to grow. We are going to investigate if plants really do need water to grow. Discuss with the children how they could investigate this. Explain the concept of a fair test – we have to keep all of the conditions the same, except for the things that we are testing Plan a fair test, with these conditions to be the same: • Amount of sunlight • Warmth • Type of soil • Depth that seed is planted at • Number of seeds planted Explain how changing these things would be make the test unfair and	Seeds e.g. cress Soil in cups Investigation frames Bar graph frame Measuring cylinders Rulers	MUST: plan and carry out an experiment by using an investigation frame, with adult support SHOULD: plan and carry out an experiment by using an investigation frame, without adult support COULD: link predictions to scientific knowledge and use scientific language	

		explain why this is the case. Emphasise need to be careful not to get soil in mouths, noses etc. (you might want the children to wear gloves) Main: Children write aim, prediction and method and then plant seeds. Children will need to water them over the next couple of weeks Plenary: Children to discuss their predictions and explain them to each other			