

## Bramble Academy **Science Progression**

Year 1 - Plants							
<ul> <li>National Curriculum Objectives: <ul> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify and describe the basic structure of a variety of common flowering plants.</li> <li>Identify and name the roots, trunk, branches and leaves of a tree.</li> </ul> </li> <li>Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted.</li> <li>They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</li> <li>Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees.</li> <li>Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.</li> </ul>			<ul> <li>Key Ideas/Sticky knowledge <ul> <li>a) Plants usually grow from seeds and bulbs.</li> <li>b) Plants need warmth, light and water to grow and survive.</li> <li>c) Flowering plants make seeds to reproduce and make more plants. Some plants die after producing seeds and others live for many generations.</li> </ul> </li> <li>Duplicated in Year 2.</li> </ul>				
<ul> <li>Prior Learning</li> <li>In Early Years: <ul> <li>Develop an understanding of growth.</li> <li>Shows care and concern for living things and the environment.</li> <li>Make observations of plants and explain why some things occur, and talk about changes.</li> <li>Can talk about some of the things they have observed, such as plants.</li> </ul> </li> <li>(Novel study Bee and Me Autumn 2)</li> </ul>	<ul> <li>Concept 1: Where plants come from. Most plants start growing from a seed or bulb.</li> <li>Provide a range of seeds, bulbs and objects that look like these. Children predict what they think might be real seeds and bulbs andthen plan how they could check.</li> <li>Go on a seed hunt trying to identify any seeds from a key (you will need to constructone for the kinds of seeds they may find). Plant the seeds they have found and tried toidentify and see if they grow into the plants they predicted.</li> <li>Plant a seed in a jar so it is possible to see it germinate. As it germinates children observe and describe and predict what they think each bit emerging from the seed is for. Continue observing and describing over a few weeks and refine their ideas.</li> </ul>	<ul> <li>How do Plants Grow?</li> <li>Concept 2: Plant survival.</li> <li>All plants need water, light and warmth togrow and survive.</li> <li>Using quick growing plants like mustard, cress, fast growing grass and beans to test if light, water and warmth are needed. (Do needoften different conditions to germinate and we don' need to confuse children)</li> <li>How does the amount of light or warmth affect how well my plant grows?</li> <li>What are the perfect conditions for my cresstor grow?</li> </ul>	<ul> <li>Concept 3: How plants get what they needto survive.</li> <li>A seed produces roots to allow water to get into the plant and shoots to produce leaves tocollects the sunlight.</li> <li>Which direction do shoots and roots growafter germination?</li> <li>If a seed is planted upside down will the roots pop out of the soil?</li> <li>How long does a stem need to be before it produces leaves and is it the same for all plants?</li> <li>If plants need water could we grow cress in water but no soil? (Let them grow cress in water and on wet cotton wool and examinethe differences)</li> <li>Do all plants have roots, how could we findout?</li> <li>If plants need water to grow, then surely the more the better. How does the amount of water affect how well a plant grows?</li> </ul>	Vocabulary Leaves, blossom, petals, roots, buds, bulb, trunk, branches, stem, evergreen, garden plants, deciduous, wild plants, seeds, wild plants,garden plants. All on Knowledge organisers Link to Novel- where the wild things are Spring 2			

## In Year 2:

- Observe and describe how seeds and bulbs grow into mature plants.
- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.



Year 2 - Plants							
<ul> <li>National Curriculum Objectives: <ul> <li>Observe and describe how seeds and bulbs grow into mature plants.</li> <li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> </li> <li>Pupils should use the local environment throughout the year to observe how different plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants. Note: Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.</li> <li>Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</li> </ul>			<ul> <li>Key Ideas <ul> <li>a) Plants usually grow from seeds and bulbs.</li> <li>b) Plants need warmth, light and water to grow and survive.</li> <li>c) Flowering plants make seeds to reproduce and make more plants. Some plants die after producing seeds and others live for many generations.</li> </ul> </li> <li>Duplicated in Year 1.</li> </ul>				
Prior Learning	Making New Plants		Vocabulary				
<ul> <li>In Year 1: <ul> <li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>Identify and describe the basic structure of a variety of common flowering plants.</li> <li>Identify and name the roots, trunk, branches and leaves of a tree.</li> </ul> </li> <li>Link to Novel- where the wild things are Spring 2</li> </ul>	Concept 1: What are flowers for? All flowering plants make seeds that can grow into new plants Grow some flowers, let them pollinate and show children where the seed grows. They then go on a walk looking for plants and flowers, taking pictures and deciding if a seed could form from the plant and ifit has yet formed. Does cress produce seeds, how could we find out? Do all plants produce flowers and seeds? Pupils choose a few plants inthe school grounds and keep simple diaries of how they change over the year in order to answer the question (see next Concept for extension of this problem)	<ul> <li>Concept 2: What has Sometimes the plant plant lives for many</li> <li>Do all plants protection</li> <li>Do all plants protection</li> <li>keep simple diarities the question.</li> <li>From this inform and those that can what happens to seed and how is to seed and how is</li></ul>	appens after a plant has produced seeds? In t dies after it has produced its seed and sometimesthe y generations producing seeds each year duce flowers and seeds and what happens to them after ed? Pupils choose a few plants in the school grounds and ies of how they change over the year inorder to answer ation pupils group plants into those that die afterflowering arry on living, are there any patterns? a daffodil (or other such flower) if it is left outside toform a this different if it is cut and placed in water inside?	VocabularyObservation, growth, compare, record, seeds, bulbs, temperature, roots, stem, predict, leaf, flower, measure, diagram, measure, comparative tests, life cycle, life process, germinate, grain.(Vocab on Kos)Link to Novel -Magic Paintbrush Spring 1)			
In Year 3:							

- Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.
- Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
- Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary from plant to plant. •
- Know the way in which water is transported within plants.