



<b>Unit name</b>	<b>Plants</b>
<b>National Curriculum link</b>	<ul style="list-style-type: none"> <li>• Year 1 Plants</li> <li>• Year 2 Plants</li> </ul>
<b>Prior knowledge (EYFS)</b>	<ul style="list-style-type: none"> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> <li>• Explore the natural world around them.</li> <li>• Recognise some environments that are different to the one in which they live.</li> </ul>
<b>Upcoming knowledge (Key Stage 2)</b>	<ul style="list-style-type: none"> <li>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</li> <li>• Investigate the way in which water is transported within plants.</li> <li>• 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.</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>
<b>When</b>	<ul style="list-style-type: none"> <li>• Spring 2</li> </ul>
<b>INTENT (What will be taught)</b>	
<b>Substantive knowledge (Knowledge that...)</b>	<ul style="list-style-type: none"> <li>• Growing locally, there will be a vast array of plants which all have specific names, including rose, tulip, foxglove, orchid, poppy, daffodil, fuchsia, dandelion, daisy, crocus, sunflower, buttercup, snowdrop, pansy, lily, forget-me-not.</li> <li>• Plants have common parts, although these can vary between plants, including roots, leaves, stem, flowers, petals, fruit, berries, stalk, seed, bulb, shoots.</li> <li>• Plants may grow from seeds or bulbs.</li> <li>• Seeds and bulbs germinate and grow into seedlings which then continue to grow into mature plants.</li> <li>• These mature plants may have flowers which then develop into seeds, berries, fruits etc.</li> <li>• Plants need water, light, space and a suitable temperature to grow and stay healthy.</li> </ul>



<p><b>Vocabulary</b></p>	<p>Pupils can read, write, spell and define with growing confidence:          Leaf, flower, petal, fruit, berry, root, seed, stem, stalk, bud, light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling, fair test, observe, results, conclusion          rose, tulip, foxglove, orchid, poppy, daffodil, fuchsia, dandelion, daisy, crocus, sunflower, buttercup, snowdrop, pansy, lily, forget-me-not</p>
<p><b>Disciplinary knowledge (Knowledge how...)</b></p>	<ul style="list-style-type: none"> <li>• To identify known common wild and garden flowers.</li> <li>• To closely observe and carefully dissect flowering plants, seeds and bulbs.</li> <li>• To produce scientific drawings based on my observations.</li> <li>• To set up a fair test to investigate the ideal conditions for cress to grow indoors.</li> <li>• To draw conclusions from the results of a fair test.</li> </ul>
<p><b>Common misconceptions (These will be specifically discussed and corrected)</b></p>	<ul style="list-style-type: none"> <li>• Plants are flowering plants grown in pots with coloured petals and leaves and a stem.</li> <li>• Trees are not plants.</li> <li>• All leaves are green.</li> <li>• All stems are green.</li> <li>• A trunk is not a stem.</li> <li>• Blossom is not a flower.</li> </ul>
<p><b>IMPLEMENTATION (How this will be taught)</b></p>	
<p><b>Pedagogy</b></p>	<p><b>At the start of the unit (Lesson 1):</b>          All children will receive a child-friendly version of this document to stick into their science books which will be discussed and explained at the beginning of each unit. The purpose of this is to ensure that they are clear:</p> <ul style="list-style-type: none"> <li>- What substantive knowledge they will be learning.</li> <li>- What disciplinary knowledge they will be learning.</li> <li>- What vocabulary they will be learning.</li> </ul>



We will refer back to this at the beginning of each lesson and throughout the unit so children can see how their learning is progressing. This will replace a specific learning objectives and success criteria for each lesson as the children will be encourage to see their learning as an interwoven, interdependent and spiralled process rather than as separate, linear lessons.

**Each lesson:**

- **Vocabulary:** All lessons will begin with a fifteen minute vocabulary section, involving writing and spelling, discussing and defining the vocabulary for this unit. It is the expectation that this vocabulary be learnt by the end of year 2, but as this unit will be taught twice within KS1, the more complex vocabulary will receive more focus in year 2.
- **Substantive knowledge:** Each lesson will then move onto a fifteen minute discussion-based session, which will include some parts of the unit PowerPoint presentation (either to recap and recall or as new learning), plus a class discussion activity based on a question or visual stimulus such as Explorify activities or the Primary Science Teaching Trust Pictures for Talk, Odd one Out or Big Questions stimulus; or teacher model. All pupils will be expected to contribute using teaching methods based on collaborative learning and methods such as cold questions.
- **Disciplinary knowledge:** The lesson will then move onto a 'enquiry' session of approximately forty-five minutes, looking at teaching the disciplinary knowledge in this unit based on the 'I do, we do, you do' principles to encourage pupils to be confident and independent scientists.
- **Recall and retention:** Following the principles of cognitive science and the definition of learning as *knowing more and remembering more*, each lesson will finish with a fifteen minute recall and retention activity. This may take the form of a low-stakes quiz (either computer- or paper-based), a mind-mapping or 'drawing' exercise, a story and discussion, or an internet-based activity.



**IMPACT (How we will know if teaching has been successful)**

**Assessment**

- **Formative assessment:** questioning, discussion and observation will be used throughout teaching. Pupils will also be encouraged to identify 'what a good one looks like' prior to beginning a task.
- **Evidence:** evidence of learning will be in the form of work in their science exercise books, photographs and videos where appropriate. Vocabulary and recall and retention work will also be recorded in exercise books to allow pupils and teachers to monitor progress and give feedback of how to improve.
- **Feedback:** This will be mainly within lessons and verbal due to the nature of science and evidence that feedback is most useful when it is immediate. Pupils may be given written feedback such as next steps where appropriate and useful. In addition, pupils will receive a coloured stamp in their books at the end of each lesson. A red stamp will indicate that they have worked hard and participated well throughout the lesson and that they have made steps forward in their substantive and disciplinary knowledge for this unit. A green stamp will indicate that they have not participated to their full ability and have not provided enough evidence that their knowledge has moved forward.
- **Summative assessment:** This will involve a written unit test (this will be supported where appropriate so that pupil's literacy skills are not a barrier to demonstrating their science knowledge). This will be given at the start and end of each unit to assess progress. The TAPS focussed assessment of science used during the 'enquiry' parts of the lessons will also go towards the summative assessment of the unit.
- Science levels will be based on all of this evidence and recorded in Pupil Asset. Information will also be passed to the class teacher for use in parents meetings and end of year reports. Working at expected in year 1 would indicate that a pupil has 40-60% of the required substantive and disciplinary knowledge. For year 2, this would be 50-70%. See table below:



Level:	Year 1 (percentage of substantive and disciplinary knowledge acquired)	Year 2 (percentage of substantive and disciplinary knowledge acquired)
Well below	0-20%	0-30%
Below	21-30%	31-40%
Just below	31-40%	41-50%
Expected	41-60%	51-70%
Just above	61-70%	71-80%
Above	71-80%	81-90%
Well above	81-100%	91-100+%

- If the summative assessment is over more than one unit, the results of all units would be averaged to give the final level.