

## Year 2 - Plants

| Prior Learning                                                                                                                                                                                                                                                                                                                                                       | In Year 2<br>What they need to know                                                                                                                                                                                                    | Later learning: Children do not need to be taught this year.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Key Vocabulary<br><b>ASE</b>                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Make observations of plants, explain why some things occur and talk about changes</li> <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, including trees</li> </ul> | <ul style="list-style-type: none"> <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> | <b>In Year 3 pupils will be taught to:</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>• 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>• Investigate the way in which water is transported within plants</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul> | <p>leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud (as Year 1)</p> <p>Light, shade, sun, warm, cool, water, grow, healthy, germinate</p> <p><i>tentative language: perhaps, maybe, I was wondering, Does anyone else think.....?</i></p> |
|                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                        | <b>In Year 5 pupils will be taught:</b> <ul style="list-style-type: none"> <li>• Describe the life processes of reproduction in some plants and animals</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                        | <b>In Year 6 pupils will be taught:</b> <ul style="list-style-type: none"> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>• Give reasons for classifying plants and animals based on specific characteristics</li> <li>• Identify how animals and plants are adapted to suit their environment and that adaptations lead to evolution</li> </ul>                                                                                         |                                                                                                                                                                                                                                                                                        |

## Year 2 - Plants

### Common Misconceptions

Some children may think:

- plants are not alive as they cannot be seen to move
- seeds are not alive
- all plants start out as seeds
- seeds and bulbs need sunlight to germinate.

### Possible Famous Scientists to study within unit

Captain Cook- Botanists

Agnes Arber Botanist

Alan Titchmarsh- Botanist & Gardener

### Working Scientifically - What they need to be able to do

1. Ask simple questions



2. Recognise that questions can be answered in different ways



3. Perform simple tests



4. Observe closely



5. Use simple equipment



6. Talk about what they have found out



*Images taken from Primary-Science and PSTT.org*

## Year 2 - Plants

| Identifying and Classifying                                                                                                                                                                                                                                                                                                                                                                                                | Comparative Testing<br>Fair Testing  | Pattern Seeking                                                                                                                                                                                                                                 | Research                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Observation over time                                                                                                  |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|--------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <p>How can we identify the trees that we observed on our tree hunt?</p> <p>Based on the children's own criteria:</p> <ul style="list-style-type: none"><li>▪ classify seeds</li><li>▪ classify bulbs.</li></ul>                                                                                                                                                                                                                                                                                             | <p>Do cress seeds grow quicker inside or outside?</p>                                                                 | <p><b>Do bigger seeds grow into bigger plants?</b></p> <p>Children generate questions for investigation such as:</p> <ul style="list-style-type: none"><li>▪ Do big seeds germinate more quickly?</li><li>▪ Does it matter which way round you plant a bulb or seed?</li><li>▪ Which comes first, the root or the shoot?</li></ul> | <p>How does a cactus survive in a desert with no water?</p> <p>Look at packets to decide how to plant and care for seeds e.g. How much water do they need? Do they need shade/full sun?</p>                                                                                                                                                                                                                                                                                                                                                 | <p>What happens to my bean after I have planted it?</p> <p>Diary</p> <p>How long does it take for a seed to grow to grow?</p> <p>Diary</p> <p>Plant seeds and bulbs and <b>observe</b> how they grow.</p> |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |
| <p>Snap Science link to subject content - <b>The Apprentice Gardener (10 lessons) &amp; EL2, 3 &amp; 4</b></p> <p>Main Enquiry type covered in SS: Identifying and Classifying, Research, Observations over time. Pattern Seeking, Comparative Testing</p>                                                                                                                                                                                                                                                  |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                    | <p><b>Book links</b></p> <p>Titch by Pat Hutchings</p> <p>The Tiny Seed by Eric Carl</p> <table><tr><td colspan="2">Big Cat book links</td></tr><tr><td>Harry's Garden Kim Wilde<br/>978-0-00-718676-1<br/>Band 4 Blue</td><td>Kim Wilde and her son, Harry, show how to make a garden in an old wheel barrow.</td></tr><tr><td>The Gardening Year Becky Dickmon<br/>978-0-00-759107-7<br/>Band 6 Orange</td><td>Follow a garden through its annual cycle, with all key milestones explained and beautifully illustrated.</td></tr></table> |                                                                                                                                                                                                           | Big Cat book links |  | Harry's Garden Kim Wilde<br>978-0-00-718676-1<br>Band 4 Blue | Kim Wilde and her son, Harry, show how to make a garden in an old wheel barrow. | The Gardening Year Becky Dickmon<br>978-0-00-759107-7<br>Band 6 Orange | Follow a garden through its annual cycle, with all key milestones explained and beautifully illustrated. |
| Big Cat book links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                           |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |
| Harry's Garden Kim Wilde<br>978-0-00-718676-1<br>Band 4 Blue                                                                                                                                                                                                                                                                                                                                                                                                                                                | Kim Wilde and her son, Harry, show how to make a garden in an old wheel barrow.                                       |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                           |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |
| The Gardening Year Becky Dickmon<br>978-0-00-759107-7<br>Band 6 Orange                                                                                                                                                                                                                                                                                                                                                                                                                                      | Follow a garden through its annual cycle, with all key milestones explained and beautifully illustrated.              |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                           |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |
| <p><b>Pupils could work scientifically by:</b></p> <ul style="list-style-type: none"><li>• Make close observations of seeds and bulbs.</li><li>• Classify seeds and bulbs.</li><li>• Research and plan when and how to plant a range of seeds and bulbs.</li><li>• Look after the plants as they grow - weeding, thinning, watering etc.</li><li>• Make close observations and measurements of their plants growing from seeds and bulbs.</li><li>• Make comparisons between plants as they grow.</li></ul> |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                           |                    |  |                                                              |                                                                                 |                                                                        |                                                                                                          |

## Year 2 - Plants

By the end of the unit children should know that... (Sticky Knowledge)

- Plants grow from seeds/bulbs
- Plants need light, water and warmth to grow and survive
- Flowers make seeds to make more plants (reproduce)
- Plants are important
- We need plants to survive (to clean air, to eat)
- We can eat different parts of the plants (leaves, stems, roots, seeds, fruit)



\_\_\_\_\_ has made close observations of seeds and bulbs and can talk about them. \_\_\_\_\_ now knows from direct observation that seeds and bulbs do not need light to germinate but they do need some warmth. \_\_\_\_\_ has also observed how seedlings grow differently according to the light level. Through the year \_\_\_\_\_ has observed a range of seeds and plants growing to maturity although \_\_\_\_\_ is also aware that not all the seeds and bulbs that were planted had the right conditions to be healthy and survive.

### Secure learning indicators PLAN knowledge matrices

- Can spot similarities and difference between bulbs and seeds
- Can nurture seeds and bulbs into mature plants identifying the different requirements of different plants
- Can describe how plants that they have grown from seeds and bulbs have developed over time Can identify plants that grew well in different conditions

Please see [www.ase.org.uk](http://www.ase.org.uk) for PLAN supporting science assessment resources (found also in TEAMs)

**Assessment Indicators for working scientifically in Year 2** - Observe closely, using simple equipment (context- compare how different plants grow in different conditions)

**Working Towards:** Children to physically compare which plant is the tallest and shortest (between normal conditions and one other condition) and to think why this is.

**Secure:** Observe and record the appearance of the plants (drawing or annotated photo) and compare the heights of the plants. Use findings to suggest how healthy plants are and suggest reasons.

## Year 2 - Plants

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Expected</b></p> <ul style="list-style-type: none"> <li>describes how a seed/bulb grows roots, a stem, leaves and flowers having observed the growth of, <i>e.g. a broad bean seed, a daffodil bulb</i></li> <li>talks about the stages of plant growth from seed/bulb to mature plant</li> <li>correctly sequences a set of pictures that show the growth of a plant</li> </ul> <p><b>Expected</b></p> <ul style="list-style-type: none"> <li>describes what a healthy and an unhealthy plant looks like</li> <li>knows what a plant needs to grow and to be healthy i.e. water, light and a suitable temperature</li> <li>describes what will happen to a plant if it does not have any one of the above, <i>e.g. plants kept in the dark will become yellow/less healthy, plants without water will wither and eventually die</i></li> </ul> | <p><b>Exceeding</b></p> <ul style="list-style-type: none"> <li>knows that mature plants have seeds and that the seeds will make more plants</li> <li>knows that bulbs make more bulbs i.e. they multiply</li> <li>identifies a variety of plants which grow from bulbs, <i>e.g. daffodil, tulip, snowdrop, crocus</i> and a variety that grow from seeds, <i>e.g. lettuce, grass, radish</i></li> </ul> <p><b>Exceeding</b></p> <ul style="list-style-type: none"> <li>explains why it is important to have healthy plants, <i>e.g. better fruit crops</i></li> <li>raises own questions for an investigation about further conditions affecting plant growth, <i>e.g. effect of plant food on plant growth</i></li> </ul> | <p><b>Mastery:</b> Make a range of comparisons between the plants in different conditions, <i>e.g. colour, droopiness.</i></p> <p><i>Please see primary science consultancy enrichment activities for additional resources in TEAMS, consider use of <a href="#">Activities - Explorify</a>: Big Question, Mission Survive, problem Solvers, Mystery bag for challenging more able pupils.</i></p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|