Year 1
Science: Growing Plants
Resource Pack

Including lessons on:
What plants need to grow
Naming and describing parts of plants
Deciduous and Evergreen
Plants we eat
Farming and food
Science Unit Overview – Year One

Plants and Plant Growth

Growing Plants
- Plants need light, water, soil and warmth to grow.
- Plants use light to make their own food.
- Plants have seeds, roots, stems and leaves.

Types of Plants
- Plants spread their seeds in different ways in order to reproduce.
- Some plants drop their leaves every year; they are called deciduous.
- Some plants keep their leaves all year; they are called evergreen.

- Investigate: Grow cress seeds on cotton wool and keep a cress diary.
- Investigate: Grow a bean in a see through pot (p.g. 246)
- Investigate: What happens when seeds are left in the dark or without water (p.g 248)
- Investigate: Put a white carnation in water with food colouring to show how water is taken into the plant.

Food and Farming
- We eat some types of plants. For example: root – carrots, stem – celery, leaves – lettuce, seeds – peas
- We eat food grown on farms or in orchards.
- Some food we eat comes from other countries e.g. Bananas

Creative application of knowledge

Science Unit Overview – Year One

Types of Plants
- Look at examples of deciduous and evergreen trees, compare their leaves.
- Discuss why trees may drop their leaves, why some plants grow in the spring etc.
- Investigate: Look at leaves under a microscope or with a good magnifying glass. What can we see? Why can’t we see the same with our bare eyes?

Food and Farming
- Cut up vegetables and discuss which parts are eaten e.g. the root or stem or leaves.
- Follow the journey of a banana
  Visit a farm or city farm and see vegetables or fruit growing.
Lesson 1: What Plants Need

This lesson is the first lesson in a series that introduces children in Year 1 to the world of plants. Children will understand that plants need warmth, light and water in order to grow. They will look at the ideal conditions for plants and will grow their own plants from seeds. Children will begin to understand that when plants do not receive adequate warmth, light and heat, they may not grow properly. Some children may begin to understand that some plants have adapted to grow in harsh conditions, such as in the desert or in the arctic. This lesson can be brought to life by children growing some plants in the classroom or in an outside space in the school. Fast growing plants such as cress are useful for children to observe seed germination and plant growth. Sunflowers grow rapidly in the right conditions and children can monitor their growth over time.

See pages 247 and 248 of What your Year 1 Child Needs to Know

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<tr>
<td>To know what plants need in order to grow.</td>
<td>• Plants need warmth, light and water to grow</td>
<td>• Investigate what plants need to grow by putting cress seeds in different conditions. For example, some seeds on a damp paper towel in the window, and some in a dark cupboard. Ask the children to check each day and look at what has changed. Children could also investigate water by putting some seeds in a small pot of water, some on damp paper towel and some with no water at all. Children can record their observations.</td>
<td>plants warmth light grow water germinate seeds healthy</td>
<td>What do plants need in order to grow? Describe what would happen to a seed placed in a dark area. Explain why watering a plant is important. Describe the best way to grow a healthy plant.</td>
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Resources:
This [BBC Online Activity](#) allows you to water a plant and watch it grow. This [Gardening Guru](#) activity from the BBC is also a useful interactive resource for children. The [Royal Horticultural Society](#) has some good gardening lesson plans.
My Cress Diary

First Observation

Second Observation

Third Observation

My Cress Diary

By:
Lesson 2: Parts of Plants

In this lesson, children explore the basic parts of a plant including the roots, stem, leaves and flowers. By the end of the lesson, children should be able to explain the purpose of each part of the plant. Children will learn that in most plants, the roots act as an anchor, holding the plant in the ground. Roots also absorb water and essential minerals from the soil. Nutrients and water are carried around the plant via the stem which also holds the leaves up above the ground in the sunlight. Plants require sunlight for photosynthesis, the process by which plants convert energy from the sun into chemical energy which is used for growth. It is important for leaves to access sunlight in order for photosynthesis to occur. The flower has a vital role in reproduction.

See pages 242 and 243 of What your Year 1 Child Needs to Know

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<tr>
<td>To name and describe the purpose of parts of a plant.</td>
<td>• Roots- the roots of a plant act as an anchor, fixing the plant into the ground. They also absorb water and minerals to help the plant to grow. • Stem- the stem of a plant grows above the ground. The leaves and flowers grow from it. The stem is also used to transport water and minerals around the plant. • Leaves- a plant’s leaves absorb sunlight and turn it into energy that the plant uses to grow. • Flower- the flower is the part of the plant where seeds are made.</td>
<td>• Show children a small pot plant- carefully remove the plant from the pot, gently brushing of the soil from around the roots. Children will be able to see the roots, leaves, stem and flower. Explain why each of these is very important. • Demonstrate how plants absorb water through the stem by putting some white carnations in water with food colouring. In around 24 hours children will be able to see the flower coloured by the ink. • Grow a bean plant (see resource links) • Visit a park or garden and look at some of the plants growing there. Identify the purpose of each part.</td>
<td>roots anchor absorb minerals stem leaves flower energy transport Also include common names of wild and garden plants.</td>
<td>Can you describe a plant? Why does a plant need roots? How does a plant get energy to grow? Where do plants make their seeds?</td>
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</table>

**Resources:**
This BBC clip explains why plants need their roots.
How to grow a bean- easy to follow instructions.
LO: To name and describe parts of a plant.

Describe what each part does:

The roots ______________________________________
_________________________________________________

The stem ______________________________________
_________________________________________________

The leaves____________________________________
_________________________________________________

The flower____________________________________
_________________________________________________
Lesson 3: Seeds

In this lesson, children will learn that plants spread their seeds in order to reproduce. There are a number of different ways that plants spread their seeds and this lesson gives children an opportunity to explore these. Children will also continue to build a bank of familiar plant names. By the end of the lesson, children should be able to describe how some common plants spread their seeds.

See pages 244-245 of What your Year 1 Child Needs to Know

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| To understand that plants spread their seeds to reproduce. | • Plants spread their seeds in order to reproduce  
• Some plants rely on the wind to spread their seeds  
• Some plants rely on animals to spread their seeds | • Explain and discuss the different ways plants spread their seeds including:  
- Gravity: The seeds simply drop off the plant and land on the ground. This can sometimes cause problems as the new plants then compete with the older plants for light, water and space e.g Apple tree  
- Wind: The seeds are carried by the wind. Some seeds have a ‘parachute’ which helps them to fly e.g dandelion and sycamore  
- Animals: Some seeds have little hooks which catch onto the fur of passing animals. Some seeds are eaten by animals but are not fully digested, they pass through the animal.  
- Pepperpot: The plant holds its seeds in a pot shaped part with holes at the top, when the wind blows the pot is shaken and the seeds fall out e.g poppy  
• Read The Tiny Seed and explore what happens to the seeds  
• Look at selections of seeds and discuss how children think seeds might be dispersed – give reasons.  
• Create a display or information booklet describing the different ways that seeds are dispersed  
• Children can act out seed dispersal using props e.g. sticky tape on ping pong balls | reproduce  
disperse  
survive  
gravity  
rely  
pepperpot | Why do plants need to disperse their seeds?  
Describe two different ways of dispersing seeds.  
Which method of seed dispersal do you think works best?  
How do scientists know about seed dispersal?  
What problems do some seeds face when they are dispersed? |

Resources:
This [BBC Clip](#) is an excellent illustration of the number of ways that seeds can be dispersed.  
[The Tiny Seed](#) by Eric Carle- read the story and explore what happened to the seeds throughout their journey  
This collection of songs from [Out of the Ark Music](#) has some fantastic songs for this unit including our favourite; A Tiny Seed.
**LO:** To understand that plants spread their seeds to reproduce.

Draw a journey of a seed:

Start

End

Describe the journey of a seed:

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
Lesson 4: Deciduous and Evergreen

This lesson covers the topic of deciduous and evergreen plants and trees. During autumn, when temperatures cool, some plants are unable to make their own food. Deciduous trees such as oak trees begin to lose their leaves. The colour of leaves change as the temperatures drop and the trees stop producing chlorophyll. They do not have enough sun light to continue with the process of photosynthesis. Deciduous trees will remain dormant over the winter period when they conserve their energy and water. In the spring, when temperatures rise, the trees begin to produce leaves again. In contrast to deciduous trees, evergreen trees keep their leaves throughout the year. Evergreen trees, such as pine trees, drop their fine, needle-like leaves at different times throughout the year. These leaves are coated in a wax that helps prevent water evaporating during the winter. At the end of this lesson, pupils should know that that deciduous trees drop their leaves and evergreen trees are ‘evergreen’.

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<td>To understand that some trees are evergreen and some are deciduous.</td>
<td>• Evergreen trees keep their leaves all year around&lt;br&gt;• Deciduous trees drop their leaves during autumn time and grow fresh leaves in spring time</td>
<td>• Visit a forest and gather some examples of deciduous and evergreen leaves. Study their different shapes, sizes, colours and textures.&lt;br&gt;• Look at images of trees and sort them into evergreen or deciduous. You could also look at sorting images of trees into seasons.&lt;br&gt;• Complete recording sheet showing the differences in two trees over a year. (see worksheet) Children can choose one deciduous and one evergreen tree before drawing both in the boxes that correspond to the changing seasons.</td>
<td>evergreen deciduous Autumn Spring&lt;br&gt;annual</td>
<td>Describe how a deciduous tree changes throughout the year.&lt;br&gt;How are evergreen trees different from deciduous trees?&lt;br&gt;Why do deciduous trees drop their leaves in autumn?</td>
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**Resources:**
This [BBC clip](#) shows a deciduous forest during autumn time.<br>This [BBC clip](#) describes the life of an apple tree including reference to deciduous trees.<br>This [website](#) has lots of information about British trees.<br>The [Forestry Commission](#) has put together some creative ideas for a forest visit.
LO: To understand that some trees are deciduous and some are evergreen.
Lesson 5: Farming and Food

This lesson will offer children the chance to explore the food that is grown by farmers. This is called arable farming. Farming animals is called pastoral farming. Generally in the UK, arable farms can be located in the south and the east. This is due to the climate being drier and warmer in these areas and also because the land is flatter and more suitable for growing crops. In the UK, farmers grow wheat, barley, oats, potatoes, sugar beet and many different fruit and vegetables. When a farmer has harvested crops, they will be stored and sold onto manufacturers who will use the crops to make foods such as cereals, bread and cakes. The final products are then transported to our shops, or perhaps shops around the world. In order to keep crops fresh, they may be frozen, or stored in a cool dark place, until the manufacturer is ready to use them.

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| To understand that plants are grown for food. | • Some food comes from plants as crops  
• Farmers must take care of their crops and protect them from pests and weeds  
• Crops are harvested, packaged and transported for people to buy and eat | • Explore the plants we eat and where they come from. Sort foods into groups depending on how they are grown. For example bananas are grown on trees, blueberries are grown on a bush, pumpkins grow on small bushes nearer the ground and potatoes grow under the ground.  
• Find out about the plants we grow for food in the UK. Discuss how important it is that crops are well looked after. Refer back to what plants need to grow.  
• Find out how bread is made from wheat.  
• Children can write a story- The Journey of my Apple or other food you have studied. Details could include where the food was grown, how it was harvested, how it was transported and where it ended up.  
• Read The Gigantic Turnip and talk about growing food at home. | farming  
crops  
pests  
weeds  
pesticide  
harvest  
package  
transport | What are ‘crops’?  
What crops do farmers in Britain grow?  
What must a farmer do to look after his crops?  
What plants do we eat?  
What food could you grow in your home? |

Resources:
The ‘Food- A Fact of Life’ website has some good lesson information and lesson ideas.  
Sing this enjoyable song called Oats and beans and barley grow from Singup!  
Watch some wheat being harvested in this video.
Lesson 6: Plants we Eat

During this lesson children will explore different edible plants and will understand that we eat different parts of plants. It is important for children to understand that we eat plants, including fruit and vegetables, in order to gain the nutrients our bodies require. Foods that we eat that are the root of the plant include; beetroot, onion, carrot, potato, turnip, radish and parsnip. Foods that we eat that are the stem of the plant include; asparagus, celery, rhubarb, and leeks. Some foods we eat are actually the flower of the plant, for example cauliflower and broccoli. We eat many leaves from plants including; lettuce, cabbage, spinach, kale and watercress. Of course, the children will be familiar with many fruit including apples, pears, pineapple, mango etc. The difference between a fruit and a vegetable is that generally speaking a fruit has seeds inside it, such as an apple, but vegetables do not. There are many fruit that are often referred to as vegetables including tomatoes and peppers. Mushrooms are not plants at all; they are a member of the fungi family.

See pages 249-250 of What your Year 1 Child Needs to Know

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| To recognise which parts of plants we eat.  | • We eat different parts of plants including the roots, stem, leaves and sometimes the flowers.  
• Some plants are dangerous to eat and would make us ill.  
• We need a variety of fruit and vegetables in our diet. | • Show children some familiar vegetables and discuss which part of the plant we eat. If possible, show children the whole part of the plant, for example carrots with their tops still on. Explain that the fruit and vegetables we see in supermarkets are just a part of the plant that would have grown.  
• Children can complete a table recording the information they have found out (template provided)  
• Discuss the important fact that some plants are dangerous and we must not pick and eat plants we do not know about. | roots  
stem  
leaves  
flower (as previously studied)  
poisonous variety diet | Which parts of plants do people often eat?  
Why do we need to eat a variety of fruit and vegetables?  
Explain why some plants are not suitable for us to eat. |

Resources:
National Geographic- plants you cannot eat  
BBC Class Clips- Growing your own vegetables
**LO:** To recognise which parts of plants we eat.

<table>
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<th>Name of plant</th>
<th>Which part do we eat?</th>
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