CurriculumVisions 1B Science@School

Growing plants

Teacher's Guide CD

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Curriculum Visions

A CVP Teacher's Guide

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Introduction

The pupil's book

The Key stage 1 Science@School series is a series of twelve books. Each one addresses one of the QCA units in the Key Stage 1 science curriculum.

Each spread in the book addresses one or more objectives in a QCA unit by providing photographs, simple text and questions to stimulate discussion.

Each book has an illustrated glossary and a simple index for finding information.

The teacher's guide

It may be that you already have a scheme of work and wish to use the books to support it. Alternatively you could use the books, this CD ROM and the **CurriculumVisions.com** web site, which provides support material in the form of extra text (with audio option), pictures, captions, activities and demonstration videos to build a new scheme. Whichever way you choose, the notes in this teacher's guide have been set out as if you were using each page or spread as the basis for a lesson. You may follow each set of notes in their entirety to build up your lesson or take parts of the notes to fit into your scheme.

The teacher's notes contain information about practical work. You should check your school policies on practical science work and only select activities for which you are confident to take responsibility.

The book *Be Safe!* published by the ASE (ISBN 978–0–86357–324–8) provides useful guidance on carrying out science activities.

The structure of the notes

The notes for each page or spread follow the same structure, which is outlined here.

Objectives

These may be linked to the QCA objectives or build on them to enrich the topic.

Resources and preparation

Suggestions may be made for building on the visual display of the books with posters and models.

There are also pictures (aka flashcards) at the end of the notes to each lesson, which may be printed off and used as triggers to start the lesson or used in the plenary as revision. When the pictures have been used they could be displayed on a wall and others added as the subsequent lessons are completed. This will make a colourful summary of the work which could be used as a final revision resource when the book is completed.

If you are using the **CurriculumVisions.com** web site log in, go to Science, Year 1, Unit 1B Growing plants.

There may be some suggestions for building practical work into the use of the pages in the book and these include a list of requirements (simple, readily available materials) and advice on preparing the requirements for use in the lesson.

Introduction

Starting the lesson

Each lesson begins with a short activity, which helps settle the children and focus them on the work ahead.

Activities with the page

These may be reading activities, observing and discussing the pictures or answering a question. There may also be practical activities which are designed to develop a range of practical science skills from making observations to carrying out fair tests.

Differentiation

There are suggestions for providing help and activities for children of different abilities.

Assessment

There are suggestions for assessing the children's work. There are three assessments for you to print off at the end of this guide. These are for use with lesson 3 (page 47), lesson 6 (page 49) and lesson 8 (page 51), or you could use all three together as an end of unit test. Guidance for the answers is given in the assessment section of the lesson notes.

Plenary

The work done in the lesson is reviewed in this section and there may be a further activity to help secure the children's knowledge.

Outcomes

These may be linked to the QCA objectives or build on them to enrich the topic.

1

Teacher's sheet

1B

Many kinds of plants

Objectives

- To be able to identify a plant.
- To know that there are many kinds of plants.
- To know that some plants can be grown inside a building.
- To know that there are many plants in our surroundings.

Resources and preparation

The following pot plants: a geranium with green leaves and flowers, a geranium with green and white leaves (variegated) and flowers, a sensitive plant. In the next three lessons other plants will be suggested to bring into the class. You may like to collect them now. The plants once introduced should become residents of the classroom and moved around to keep interest. The children can also be made responsible for watering them.

Starting the lesson

Show the children a geranium with green leaves and flowers. Ask them to describe what they see. Put the variegated geranium next to it and ask them to compare the two plants. Look for answers about the leaves being similar but one having white and the flowers having a similar shape (but they may have different coloured petals). Touch the plants and make sure that the children do not see any movement.

Tell the children that one plant behaves in an unusual way when you touch it. Carefully show the children the sensitive plant then allow them to touch it gently with a pencil and see it move. Say that this is very unusual and most plants only move as they grow. Let the children decide where the plants should be kept in the classroom.

Activities with pages 4 and 5

- Read the introductory sentence and ask the children to look at the pictures and decide which is the largest plant they can see (the tree).
- Read the sentences slowly and pause after the fourth one and ask the children if they know of any water plants. Look for answers such as water lily and seaweed.
- After the sixth sentence, ask the children if they know what the prickly plants are called. Some children may point to the picture on page 5. Go there and read the caption.
- Read the last sentence and be prepared for the children to be repulsed. If they have not seen it point to the Venus fly trap on page 5 and read about it.
- Look at the picture of the mushroom and the moss. The mushroom is really a fungus but at this level you may let the children consider it as a plant as it is found among plants.

Teacher's sheet

Ask them to find out more about the mushroom by looking it up in the glossary on page 23. You may wish to develop the idea of some fungi being poisonous and that children must never touch any mushrooms and toadstools they find.

- Point out that the moss is a very low growing plant with lots of tiny leaves.
- Read about the ivy with the children and tell them that ivy grows up trees if it gets the chance.
- Read about the dandelion and point out the flower and dandelion clocks behind the girl.
- Read about the tree and ask the children if they can tell you what a branch is. Direct them to look in the glossary on page 22.

Differentiation

Ask more confident learners how they can tell a tree from other kinds of plants and how they can tell a mushroom or toadstool from other kinds of plants. Ask less confident learners if they know the names of other plants that have flowers. Look for answers such as daisy, buttercup, daffodil, rose.

Assessment

The children can be assessed on their observational skills when looking at the plants and their willingness to engage with the information on the spread.

Plenary

Take the children to the window and let them look out and tell you about the plants they can see. Alternatively take the children into the playground and see if they can discover moss growing on walls and plants growing between cracks in flagstones and tarmac. Ask them to compare the different kinds of plants they find.

Outcomes

The children:

- Can identify a plant.
- Know that there are many kinds of plants.
- Know that some plants can be grown inside a building.
- Know that there are many plants in our surroundings.

2

Teacher's sheet

1B

Where plants grow

Objectives

- To know that plants can grow in different places.
- To name a plant which grows in a certain place.

Resources and preparation

A fuchsia, a spider plant, a tradescantia, a begonia, a rubber plant (to be shown near the end of the lesson). Ask the members of staff to write down the plants that they have in their homes. Collate the information into a 'league table' for the plenary session. If possible collect plants that represent the top three in the table.

Starting the lesson

Remind the children that plants can be grown inside and introduce the plants you have collected. Ask the children to describe them and compare them and then decide where they should be put in the classroom.

Activities with pages 6 and 7

- Read the introductory sentence and ask the children if they can remember from the last lesson where some plants grow.
- Move on to the lawn and read the caption then ask the children to tell you what a lawn is. Direct them to look it up in the glossary on page 23.
- Ask the children if they know of any other plants that grow in a lawn as well as grass, and look for answers about buttercups, clover and daisies.
- Move on to the plants on mountains and ask the children to describe a mountain. Look for an answer about a very high hill, which is cold on top.
- Next read about the wheat in a field and say fields provide a place to grow food plants. In many fields grass is grown for cattle and sheep to eat. Wheat is a plant we use to make bread. In some fields potatoes and cabbages are grown.
- Move on to look and read about the wood and ask the children about their ideas about woods. They may draw on stories they have heard and talk about them being dark and mysterious. Tell them that ferns are like huge green feathers which animals like deer can hide in.
- If children mentioned a water lily in the last lesson remind them of it now and read the caption. You may like to talk about water lilies in stories where frogs sat on water lily leaves.
- Move on to seaweed and ask the children if they have seen any and what it was like. Be prepared for slimy and slippery.
- Finally move on to the rubber plant and produce the one you have collected. Compare it with the plant on page 7 and ask the children where it should be set up in the classroom.

2 Teacher's sheet 1B

Differentiation

Less confident children may need prompting in the discussion activities and perhaps could go and look at a lawn and see the different kinds of plants growing in it. More confident children could make a drawing of a wood in which they could feature the trees, ferns and other plants, such as foxgloves, they may have learnt about.

Assessment

The children could be assessed on their contribution to the discussions and ideas about locating the plants. Less confident learners could be assessed on how they identified the different kinds of plants in the lawn by looking at the leaves. More confident learners could be assessed on the detail in their drawings of a wood and their explanations about it.

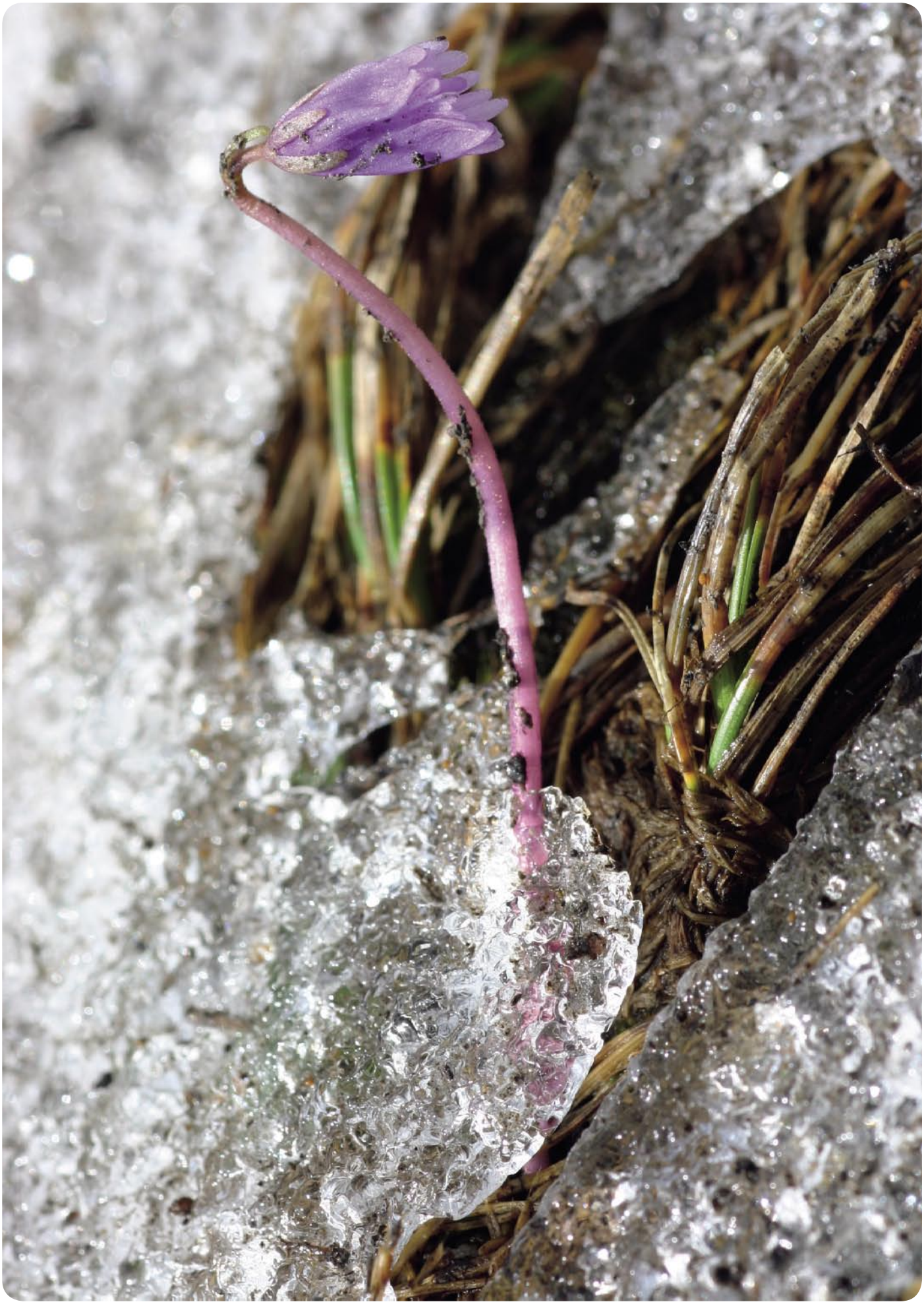
Plenary

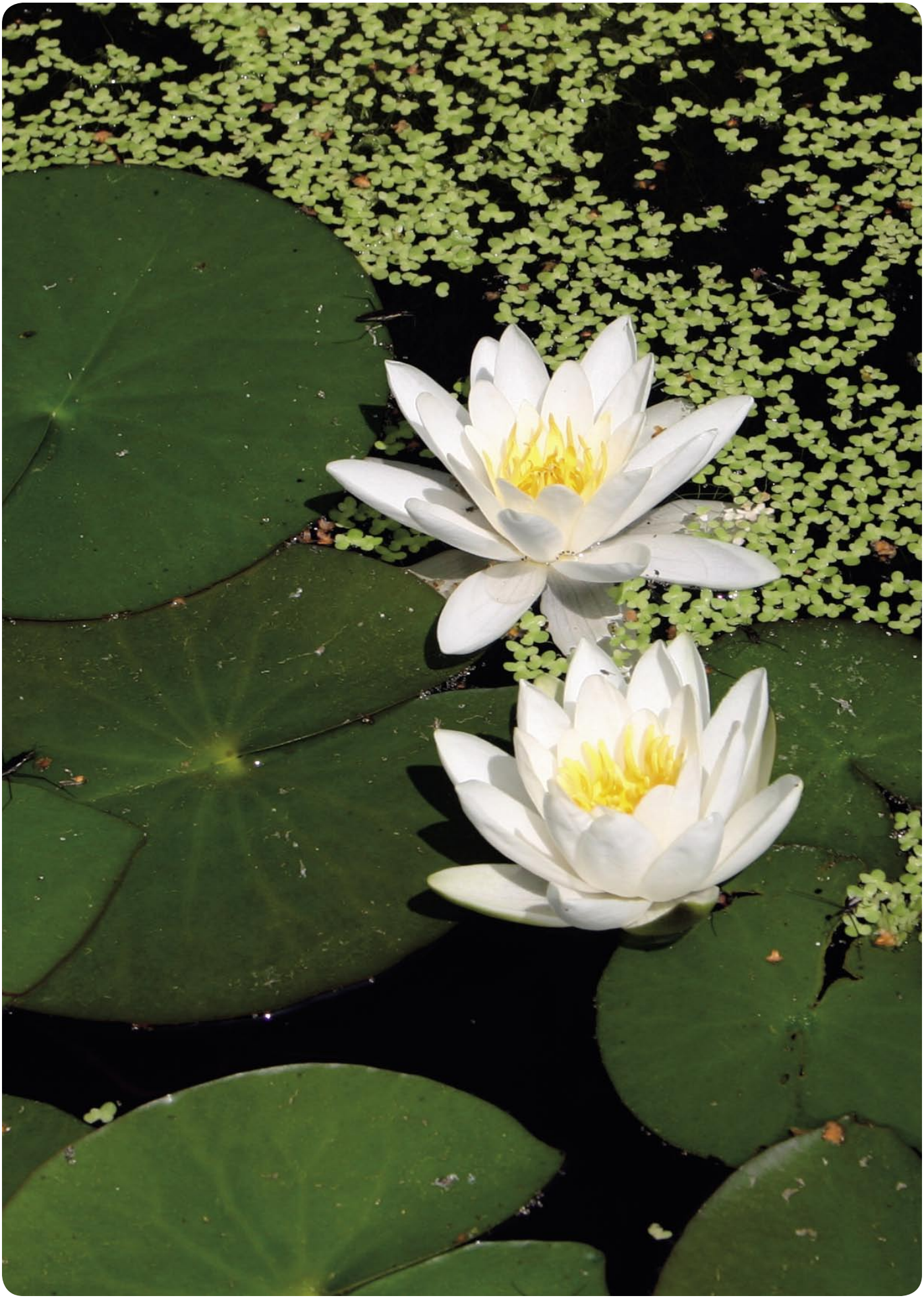
Read the question with the children and tell them that you asked the members of the school staff to write down the plants they have in their home and say you have made a table of the results. You may like the children to make a pictogram of the results. At the end of the session show the children the top three plants in reverse order. Ask the children if they have any of the three plants in their homes.

Outcomes

The children:

- Know that plants can grow in different places.
- Can name a plant and the place it grows in, for example, wheat grows in a field.





3

Teacher's sheet

1B

The parts of a plant

Objectives

- To identify the parts of a plant.
- To learn the names of the different parts of a plant.
- To set up a simple growth experiment and record observations.

Resources and preparation

A geranium plant like the one on page 8, a tray, a small onion, a plastic bottle with clear sides with a top wide enough to support the bottom of the onion for each group of children, a window sill. Optional – bulb bowls, bulb fibre, bulbs such as daffodils, plastic gloves for the children.

Starting the lesson

Point to the plants that are located around the classroom. Ask the children about the parts of the plants the children can see. Look for answers about flowers and leaves. Tell the children there are other parts of plants and that they are going to take a closer look.

Activities with pages 8 and 9

- Read the opening sentence. Ask the children if they have heard the words stem and root before and if they have explain what the words mean.
- Read the first three sentences with the children. Move to the caption to show the children that the plant is a geranium and relate it to others you may have in your collection.
- Tell the children that the plant has been tapped out of its pot so its whole body can be seen. Use the labels and label lines to identify the various parts.
- Produce the geranium, which is similar to the one in the picture and ask the children if you should tap it out and see if they can see the parts on a real plant. Tap out the plant onto a tray and let the children look at the roots and see the stem.
- Move on to page 9 and read about bulbs. Ask the children to turn to the glossary to see if they can find out more. (A bulb has a small disc-like stem on which the thick bases of leaves grow. They store food for the plant. There are tiny dried up roots at the bottom of the stem in a ring. When the bulb starts growing the leaf bases supply food for new leaves and roots to grow.)
- Let the children look at the picture of the onion in the glass and tell them that when scientists see experiments like this they like to copy them to check the experiment works. Tell them that they are going to be scientists and copy the experiment by filling a bottle with water, putting an onion on its neck so the bottom of the onion dips into the water and then putting

the bottle and onion on a window sill. They will then look at it daily.

- You may like the children to make a table in which they can draw pictures of their onions as they grow.
- You may like to extend the experiment by saying that scientists always like to think up ideas for new experiments, and steer the children to thinking what might happen if an onion was set up in a cool place or a dark place. (Cool place will produce slower growth, dark place will produce paler leaves).

Differentiation

Less confident children may need help in setting up their experiment and looking for changes as the onion grows. More confident learners could measure the height of the leaves as they grow. Very confident learners could take the onion out of the water and measure the length of its roots.

Assessment

The children can be assessed on the way they tackle their experiment and record their observations. There is an assessment sheet at the end of the guide (page 47).

Answer guidance

1. Make sure the lines reach the intended part.
2. Leaf and stem.
3. Root.
4. Flower.
5. Neat work rewarded.
6. Line connecting word and parts.

Plenary

Look at the pictures of the hyacinth and daffodil with the children and get them to use the labels and lines to identify the parts. Ask them to answer the question.

If it is appropriate (late autumn) and permitted by your school policies arrange for the children to set up bulb bowls to flower in the following spring. Note that hyacinths, tulips and bluebells can cause contact dermatitis and plastic gloves or bags must be worn if these bulbs are planted.

Outcomes

The children can:

- Identify the parts of a plant.
- Learn the names of the different parts of a plant.
- Set up a simple growth experiment and record observations.

Petals

Objectives

- To understand the importance of petals to a plant.

Resources and preparation

A selection of cut flowers.

Starting the lesson

Show the children your selection of cut flowers. Tell the children that people often celebrate birthdays, or try to cheer up people who are ill by giving bunches of flowers. The bright colours and pleasant scents of the flowers are enjoyed by almost everyone. Some people have one or more vases of cut flowers in their homes as decoration. Ask the children if they have any cut flowers in their home. (You may need to deal with this introduction sensitively if anyone is from a family that has suffered a bereavement.) Tell the children that although we like flowers they have a special purpose in the life of a plant.

Activities with pages 10 and 11

- Read the introductory line and ask the children what the flower does. Ask them to look up flower in the glossary on page 22. After the children have read the entry, ask them what a seed is and the observant among them may see the simple definition of the seed on page 23. Use the glossary to link the purpose of the flower with the purpose of the seed – the flower helps the plant make seeds, which in turn make new plants.
- Turn back to page 10 and read the next sentence about petals with the children. Look at the four flowers in turn and discuss how the petals are arranged. The buttercup and poppy have a small number of petals, which are arranged to make a bowl or dish. The rose has a huge number of petals which are curled around each other. The sunflower has a large number of petals too but they do not overlap as in the rose and are easier to see and count. (This rose is a cultivated rose and has been bred for its petals. Its wilder relative has flowers more like the poppy, which are open at the centre.)
- Read the second sentence about petals making up most of the flower and conclude with the children that the petal must be an important part of the flower – the part of the plant that makes seeds.
- Ask the children if they have ever seen anything visiting flowers and look for an answer about bees and butterflies. Tell the children that the petals tell the insects that the flower has something they would like. When the insects land on the flower they discover the flower has a sweet tasting juice called nectar for them to drink.

- The nectar is made near the middle of the flower and some petals even have lines on them (called honey guides), which the insects can follow to find their drink. You may have some flowers in your collection with these lines on their petals.
- Tell the children that as the insects move from flower to flower to get their drinks they carry a powder from one flower to the next. This powder is called pollen and when a flower receives it, it can start to make seeds.
- Develop this idea by letting the children look at the centre of the sunflower where the seeds are forming. (The flower of the sunflower, daisy and dandelion is not a flower at all. It is a flower head made up from lots of small flowers called florets. The seed-making part of the florets are towards the middle of the flower head while the petals are to the outside. The flowers of poppies and buttercups are large single flowers. The children do not need to know this but it may help in explaining some questions that may bring up comparisons.)
- The children could count the petals of some flowers which are easy to see.

Differentiation

Less confident learners may need help in identifying and counting petals. More confident learners could look at the centre of a flower and describe the other parts that they can see. At the centre is the seed-making part, or ovary, and around that are whiskers with swollen ends called stamens. Pollen is made on the swollen ends and rubs onto the backs of insects as they pass by.

Assessment

The children can be assessed on how well they can find and use the glossary. They can be assessed in the plenary about how well they remember the importance of petals.

Plenary

Review the role of petals in the life of a plant. The account should cover the petals' function in attracting insects to the flower so that pollen can be delivered and seeds made for the next generation of plants.

Outcomes

The children:

- Know that petals give a flower its colour.
- Know that petals attract insects to flowers.
- Know that plants can be identified by their flowers.

5

Teacher's sheet

1B

The roots

Objectives

- To know that roots hold plants in the ground.
- To know that roots take up water from the soil.
- To know that there are different types of root.

Resources and preparation

Geranium plant and onions on their bottles from lesson 3. A bunch of spring onions, a bunch of carrots. Each group will need a pot of seedlings sown two weeks before the lesson, (or a tub of cress from a greengrocer or supermarket), a tray and a spoon.

Starting the lesson

Show the children the geranium in the pot and ask them if they can remember the different parts of the plant. Ask them to explain what the part in the pot looks like and look for an answer about long white threads.

Let the children bring their onions to the front of the class and display their roots and leaves. Tell the children that they are just going to study roots in this lesson.

Activities with pages 12 and 13

- Read the introductory sentence. Take hold of the geranium and see if it still pulls out of the plant pot. If it does, you can say that the roots bring the "ground" with it when they are pulled.
- Read the paragraph with the children. If they have been caring for the plants and watering them, ask them where they put the water. Look for an answer about putting it on the soil. Emphasise that they should not put it on the leaves or the stem or the flowers because these parts of a plant can't take water in. Remind them that the reason they water the soil is so that the roots can take the water in.
- Look at the picture of the onions and read the caption with the children. If they have grown onions on the bottles let them compare their onion roots with those in the picture. Alternatively present them with spring onions for them to examine.
- Look at the picture of the carrots with the children and read the caption. Show the children some real carrots and ask them how the carrot roots are different from onion roots.

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- Look at the picture of the seedlings and read the caption and labels. Ask the children what they think a seedling is and ask them to check their answer by looking it up in the glossary. Present each group with a pot of seedlings, a spoon and a tray and ask them what they might expect to find if they carefully dig in the soil.
- Let the children dig in the soil, remove seedlings and compare them with the picture.

Differentiation

Less confident learners may need help in digging out the seedlings and making comparisons. More confident learners could carefully wash the roots under a tap to remove the soil so the roots can be clearly seen.

Assessment

The children could be assessed on how carefully they dug out their plants and displayed the roots.

Plenary

Look at page 13 with the children. If there are trees in the school grounds you could take the children to see if any of the roots are near the surface. Ask the children the question and look for an answer about the wind blowing the tree over. Let them notice that in the picture the tree's roots have snapped and pulled up some of the ground as the tree fell over.

Outcomes

The children:

- Know that roots hold a plant in the ground.
- Know that roots are the part of a plant which takes up water.
- Know that roots can be thick or thin.

6

Teacher's sheet

1B

A plant grows up

Objectives

- To know that plants grow from seeds.
- To know that seeds sprout roots first and then shoot.

Resources and preparation

Sunflower seeds. Broad bean seeds, pea seeds, mustard seeds, cress seeds, Some broad bean seeds which have been soaked in water overnight in an opaque container (so they can be poured out dramatically), pots of compost, spoons, jug of water, space to store the pots.

Starting the lesson

Remind the children that flowers produce seeds. You may like to turn to page 11 and look at the sunflower again to help them remember. Show the children some sunflower seeds and tell them that just as different kinds of plants have different kinds of flowers they also have different kinds of seeds. Show the children the bean and pea seeds and ask them how they can tell them apart. Show them the mustard and cress seeds and ask them how they can also be distinguished. Ask the children what a seed might need to grow into a plant, and look for an answer about soil and water.

Activities with pages 14 and 15

- Read the first paragraph then move to point 1 and read the caption with the children. Tell them that you have done a little experiment to check this fact. Tell them that you put some beans in water last night. Show the children some dry beans and prepare to pour out the soaked beans onto a tray to compare them. Take the lid off the container and pour out the seeds. Let the children compare them and see that they have indeed swollen.
- Read point 2 and then point 3. Ask the children how they could check these facts and look for an answer about planting the swollen seeds and seeing if they grow as the pictures show. Let the children plant the beans in the pots.
- Tell the children that you wonder if the other seeds in your collection would grow in the same way. Ask them how they could find out and look for an answer about planting the seeds in soil and watering them.
- Let the children plant the seeds and water the compost and put the pots in a place where they will not be disturbed. Organise a watering rota if appropriate.

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Differentiation

Less confident learners may need help in planting the seeds at the correct depth – the peas can be planted about a centimetre below the compost, but the cress and mustard could be sprinkled on the top and then just covered with a light layer of compost. More confident learners could take part in the watering rota and look for signs of sprouting as the days go by.

Assessment

The children could be assessed on the way they planted their seeds and, as the days go by, their ability to observe changes. After a week the children could dig up the pea seeds and report on their condition. There is an assessment sheet at the end of the guide (page 49).

Answer guidance

1. Swells up.
2. Root.
3. a stem, b root, c seed.
4. Downwards.
5. Upwards (some children may mention plants with stems that grow along the ground).

Plenary

Read page 15 with the children then get them to answer the question. Develop the questioning so the children work out a sequence of growth – root, stem, leaves and flowers.

Outcomes

The children:

- Know that seeds vary in size and colour.
- Know that seeds need water in order to sprout.
- Know that a seedling grows a root first followed by the stem.

7

Teacher's sheet

1B

Water, warmth and light

Objectives

- To know that plants need water to live.
- To know that plants need warmth to live.
- To know that plants need light to live.

Resources and preparation

Two pieces of turf (about 12 cm square) from a dog free area, two plastic trays to keep the turf in, Two plant pots containing compost and sprouting cress or mustard seeds, a plastic cup which can fit over the seed in one of the pots. Two pieces of turf (about 12 cm square) from a dog free area, two plastic trays to keep the turf in, a space in a dark cupboard.

Starting the lesson

Remind the children about watering plants and if a watering regime has been set up to care for the classroom plants discuss it with them. Ask the class how they could find out if plants really need water to stay alive and look for an answer about watering one plant and not watering another. Tell the children that they are not going to perform this experiment on one of their classroom plants and show them the two pieces of turf that you have brought in. It may be that there has been a drought in your area and if so you could remind the children and ask them what happened to lawns. They could use their experience to predict what might happen in this experiment. Let two children label the trays 'water' and 'no water' and arrange for one to be watered every day.

Activities with pages 16 and 17

- Read the introduction and remind the children about the experiment you have just set up.
- Read the first line and tell the children that they must look for the unwatered grass becoming floppy. Look at the three pictures of the rose and read the caption with them.
- Read the line about winter and cold and then look at the bottom picture on page 17 and read the caption. Look at the picture above it and read the caption and ask the children if they know about a building gardeners use to keep their plants warm. Look for an answer about greenhouses.
- Show the children the two plant pots with sprouting seeds in them. Show them the plastic cup and ask the children how you could use it as a mini greenhouse. Look for an answer about turning the cup upside down and putting it over the top of one group of seeds. Let one of the children do this. (The warmth

in a greenhouse is generated in the following way but the children do not need to know this. Rays of heat pass in through the glass of the greenhouse from the Sun. The heat is in the form of short waves and is absorbed by the inside of the greenhouse. Some heat is then released from the inside but these heat waves are longer than those that came from the Sun and cannot pass out through the glass so the heat is retained.)

- Set up the two pots on a window sill, making sure both receive the same amount of water, and ask the children what they might expect to happen. Look for an answer about the plants in the "greenhouse" growing faster than those in the other pot.
- Move back to page 16 and read the sentence about plants and light. Show the children two more trays of turf and ask them how they could set up an experiment to test the effect of light on plants. Look for an answer about keeping one tray in the dark. Look also for an answer about keeping both trays watered. Ask the children to predict what might happen. Some children may be able to tell you about leaving a piece of wood or tent on a lawn for a while and when it was removed the grass underneath, which had been in the dark, had gone a pale colour.

Differentiation

Less confident children may need more prompting for responses. They could perhaps look in the school grounds at dark spaces under trees and see that plants do not grow there. They could make drawings of the experiment and label them. More confident learners could make labelled drawings of the experiments and write about them.

Assessment

The children could be assessed on their involvement in discussing and setting up the experiments. They could be assessed on the quality of their drawings and writing.

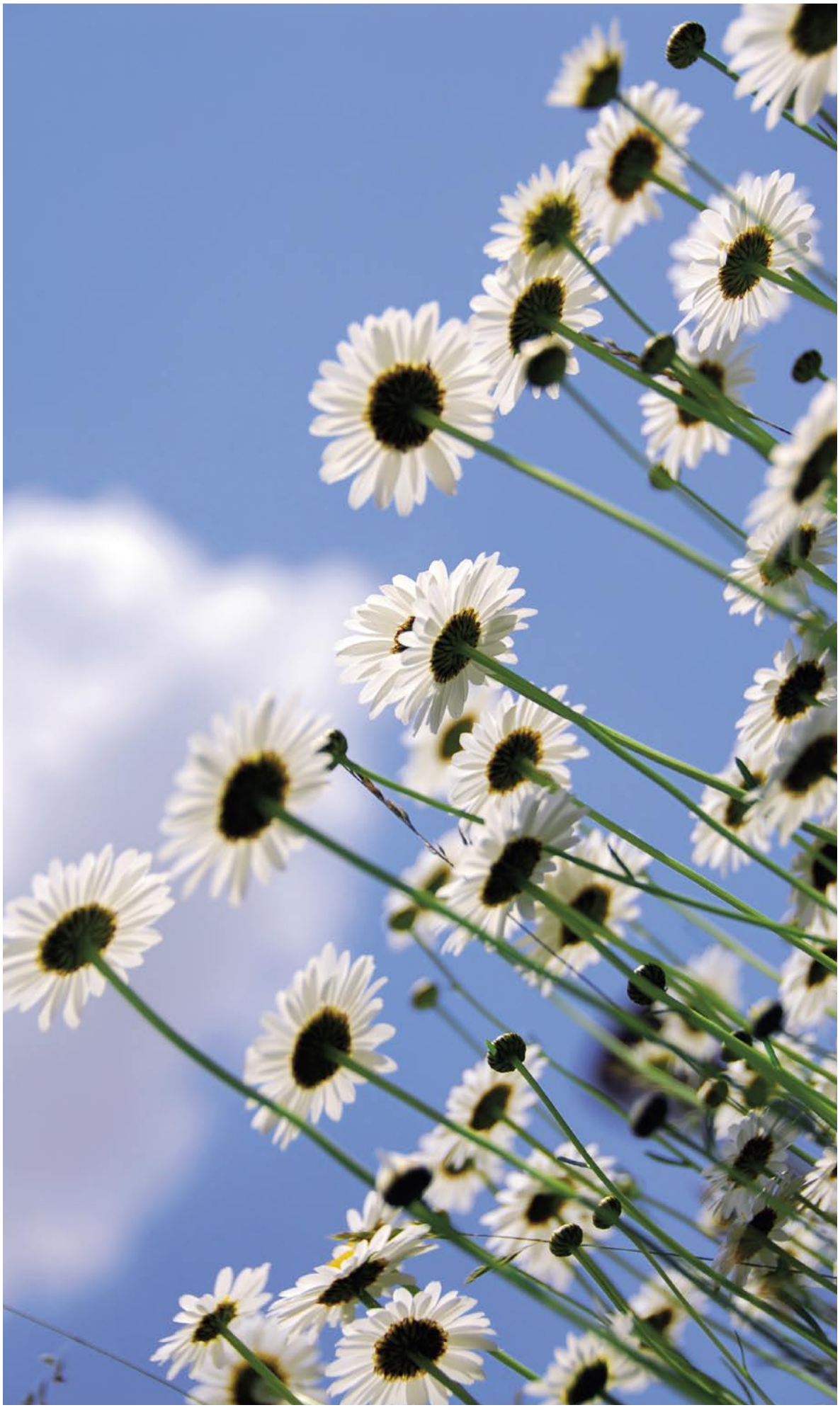
Plenary

Review the topic and remind the children of the three experiments they have set up and the predictions they have made for each one. Set up a rota for watering the plants.

Outcomes

The children:

- Know that plants need water to live and can set up a fair test to investigate.
- Know that plants need warmth to live and can set up a fair test to investigate.
- Know that plants need light to live and can set up a fair test to investigate.



8

Teacher's sheet

1B

Plants are food

Objectives

- To know that plants provide us with food.
- To know that there is a wide range of food plants.

Resources and preparation

A lunch box with a piece of celery, carrot, a tomato, a piece of cheese and a slice of bread. Grains of wheat (from a health food store), mortar and pestle, sieve, dish, bag of flour. For the plenary – a potato, a sweet potato, a turnip, a swede, a leek, a carrot, a parsnip, an apple, an orange, a pear, a mango, a melon.

Starting the lesson

Take out your lunch box and ask the children to guess what is in it. Open it and show the children the celery, carrot and tomato. Say that these are foods from plants. Ask them about the cheese and talk about how cheese is made from milk and that cows make milk and that cows eat grass. See if they can appreciate that grass is the food of cows and that it helps cows to make milk, which we can drink or turn into cheese to eat. Show the children the bread and say that you wonder if this has anything to do with plants.

Activities with pages 18 and 19

- Read the introductory line, look at the top picture, read the paragraph and look at the loaf of bread. Remind the children that this helps to explain that the bread is made from plants.
- Show the children some grains of wheat and the slice of bread. Say that the slice is not all lumpy like the grains so something must have happened to the grains. Ask the children what this could be and look for an answer about breaking up the grains into little bits.
- Take some grains and put them in a mortar. Grind them with a pestle then pour the powder through a sieve and let the flour settle on a plate. Explain that when wheat is harvested it is taken to a flour mill where it is ground up to make flour.
- You may like to add some of the flour from the bag to some water to make a simple dough and then explain that when the dough is baked bread is made.
- Read the paragraph at the top of page 19 and look at the photograph of the apples and read the caption. Ask the children what they think the word 'fruit' means then ask them to look it up in the glossary on page 22. Ask the children if they can think of any more fruits.

8 Teacher's sheet 1B

- Look at the collection of vegetables with the children and see if they can identify sweetcorn (corn on the cob) asparagus, red onion, aubergine, leek and sweet potato. They should identify tomato. (Tomato is actually a fruit but for cooking purposes it can be considered a vegetable.)

Differentiation

Ask less confident learners the question on page 19 and let them answer orally. Ask more confident readers to work with your helpers to write down the names of the plants they mention in answer to the question.

Assessment

The children can be assessed on their knowledge of food plants. There is an assessment sheet at the end of the guide (page 51).

Answer guidance

1. A = 3, B = 1, C = 2, D = 4, E = 8, F = 7, G = 10, H = 6, I = 9, J = 5.
2. The children may draw an apple, orange, rice, etc.

Plenary

Show the children the collection of fruit and vegetables all mixed up and ask them to help you sort them into two groups.

Outcomes

The children:

- Know that plants provide us with food.
- Know that there is a wide range of food plants.

9

Teacher's sheet

1B

Common food plants

Objectives

- To know that usually only part of a food plant is eaten.
- To know that the part of a plant may be treated in some way to make some kinds of food.

Resources and preparation

A bag of bean sprouts, pumpkin and knife and spoon, bowl, cinnamon and nutmeg in separate plastic containers with muslin tops. A recipe for pumpkin pie (optional).

Starting the lesson

Show the children the bag of bean sprouts. Ask them about the type of meal they may be found in. Look for an answer about stir fry Chinese meals. Remind the children about the broad beans they may have studied earlier and, if they are still growing, let them look at the plants that they have formed. Tell the children that when we eat bean sprouts we eat the whole plant – the stem, leaves and root – but this is unusual. For example when we eat broad beans we don't eat the whole plant, just the beans which are the plant's seeds.

Activities with pages 20 and 21

- Read the first line and first paragraph with the children. Remind the children of how wheat is used to make bread and look at the photograph of wheat growing in a field. Get the children to turn back to page 18 and compare the photograph of the ear of wheat with the wheat in the field. Tell the children that when the wheat is harvested only the ears full of grains are collected to make flour.
- Some children may say that the wheat looks like grass. You can agree with them and point out that wheat and other cereals such as oats (used in porridge), rye (used in biscuits) and barley (used in soups and drinks) are large kinds of grass type plants.
- Get the children to look at the picture of pea pods and read the caption and labels. Say that beans form in pods too. It may be appropriate to mention that some garden plants such as lupins and laburnums produce pods which look like pea pods but these must not be played with or the seeds eaten as they are poisonous.
- Look at the information about the pumpkin with the children. Point out that the pumpkin is just one part of the plant and grows on the end of a stem surrounded by leaves.

Teacher's sheet

- Show the children the pumpkin and ask them to guess what it might be like inside. Write down their suggestions on the board.
- Cut open the pumpkin to reveal the stringy pith in which the seeds are entangled. Compare what is seen with the ideas on the board.
- Remove the seeds and pith, separate some of the seeds and tell the children that you will keep them and they can try and sprout them later.
- Take half of the pumpkin and cut it up into squares with sides about 8 cm long. Tell the children that these are placed in a bowl with water and boiled for a while to soften then the skin comes off. The pumpkin flesh is then mashed up with milk, sugar, nutmeg and cinnamon (you can let the children smell these spices if your school policies allow). Eggs are added to the mixture then it is poured into a pie case and baked in an oven. This is only a simple outline for making pumpkin pie. You may like to find a recipe to add more detail.

Differentiation

Less confident learners could stage a play in which they mime making a pumpkin pie. More confident learners could draw pictures of the stages of making a pumpkin pie.

Assessment

The children could be assessed on their attention to detail in their mimes and drawings.

Plenary

Tell the children that nutmeg and cinnamon come from plants and ask them if any of the other ingredients come from plants. Help them to understand that sugar comes from a plant called the sugar cane. See if they can make a connection between the pie crust, flour and wheat – and the connection between milk, cows and grass. If the children have previously studied 1A you could try and remind them that chickens, which lay eggs, eat seeds which come from plants. You could support this by showing them page 20 in book 1A in this series. Conclude that plants are vitally important in supplying us with our food.

Outcomes

The children:

- Know that usually only part of a food plant is eaten.
- Know that the part of a plant may be treated in some way to make some kinds of food.

Assessment

Name: .....

The parts of a plant

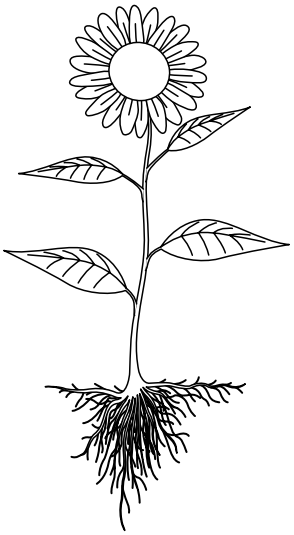
1. Match the labels to the parts of the plant.

root

flower

leaf

stem



2. Which parts of a plant are green?

.....

3. Which part of a plant is white?

.....

4. Which part of a plant can be many colours?

.....

5. Draw a bulb with roots.

6. Label the roots.

Assessment

Name: .....

A plant grows up

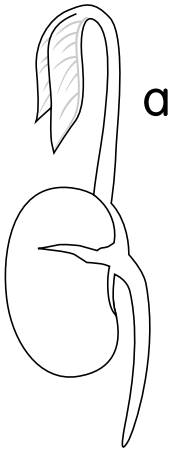
1. What happens to a seed when you water it?

shrinks ☐ swells up ☐ stays the same ☐

2. Which part of the plant grows out of the seed first?

root ☐ leaf ☐ stem ☐

3. Label this picture.



a _____

c _____

b _____

4. Which way does a root grow?

.....

5. Which way does the stem grow?

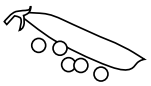
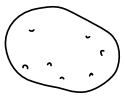
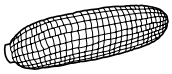
.....

Assessment

Name: .....

Plants are food

1. Match the names to the pictures by drawing lines between them.

A	potato		1
B	tomato		2
C	peas		3
D	carrot		4
E	onion		5
F	celery		6
G	sweetcorn (corn on the cob)		7
H	mushroom		8
I	lettuce		9
J	cauliflower		10

2. Draw some other plant foods you eat and name them.