

Unit 1B Growing plants

ABOUT THE UNIT

This unit introduces children to the idea of plants as living things which grow and change. Children should become aware of similarities and differences in plants.

Experimental and investigative work focuses on:

- turning ideas into a form that can be tested
- making and recording observations
- using results to communicate what happened and to draw conclusions.

Children also have opportunities to link their knowledge of how plants grow to their understanding of science and to ways in which growing plants should be treated with sensitivity.

This unit takes approximately 9 hours.

WHERE THE UNIT FITS IN

This is the introductory unit for plants.

Builds on Unit 1A 'Ourselves'

Children need:

- to know that animals (including humans) are alive and grow.

Links with Units 1D, 2B, 2C.

VOCABULARY

In this unit children will have opportunities to use:

- words and phrases for making comparisons *eg tall/taller/tallest, like, similar to, different from*
- words relating to plants *eg branch, flower, root, stem, seeds, seedlings, plants, leaf, weed*
- words and phrases relating to living and non-living things *eg living, non-living, alive, not alive, dead, healthy.*

RESOURCES

- planted seedlings or seeds
- small plants in pots or tubs or garden which will flower either during the winter or later in the year *eg pea, broad bean, mung bean, amaryllis, sunflower, marrow*
- pot plant to be re-potted
- soil and containers for growing plants
- collection of pictures of plants of a variety of types
- large labelled plan/drawing of the school grounds
- artificial plant

EXPECTATIONS

at the end of this unit

most children will:

name some common plants, identify the leaf, root, stem and flower of a plant; recognise that plants are living and need water and light to grow and recognise they can investigate the conditions plants need for growth

some children will not have made so much progress and will:

name some common plants, identify leaf, root, stem and flower and recognise that plants need water to grow

some children will have progressed further and will also:

describe differences between plants grown in the light and in the dark and suggest how to find out about what plants need in order to grow well

LEARNING OBJECTIVES

CHILDREN SHOULD LEARN

- that there are different plants in the immediate environment
- to treat growing plants with care
- to make careful observations of one or two plants and of where they grow and to communicate these
- that plants have leaves, stems and flowers

POSSIBLE TEACHING ACTIVITIES

- ◆ Take children for a walk around the school and challenge them to find (but not pick or pull up) plants growing in as many different places as they can. Ask them for their ideas about why plants grow where they do. Have a prepared, large, outline plan of the area visited and ask children to stick labels or pictures of plants where they were found *eg on the path, in the pond, in the field*. With the children, draw some of the plants showing what they are like and where they grow and naming their main parts. Ask children to suggest why it is important not to pull up growing plants.

- that plants grow
- to make observations of the plants
- to use drawings to record their observations and to communicate what happened
- that plants have leaves, stems and flowers
- to treat growing plants with care

- ◆ Ask children to suggest why we grow plants. Show children some planted seedlings *eg pea, broad bean, mung bean* or with the children plant quick-growing seeds *eg sunflower, marrow*. Ask children to suggest how they will change as they grow. Help children to look after and to observe the seedlings at regular intervals *eg two to three days* over the next week and to record, in drawings, how they have changed. As children observe the seedlings, consolidate knowledge of names of the parts of the plant.

- that plants provide food for humans

- ◆ Show children plants or pictures of plants *eg apple trees, tomato plants, sweetcorn, cabbages* and ask them why it is important for humans to grow plants.

- that plants have roots
- to observe and compare the roots of different plants

- ◆ Show children a potted plant that has grown too large for its pot and take it out to re-pot it. Show children its roots and ask them why they think it needs re-potting. Ask children to compare the roots with those of some seedlings, helping them to observe characteristics *eg colours, thickness, length*.

- to make careful observations of the plants and to record these in a simple chart or table provided for them
- to conclude that plants need water to grow

- ◆ Show children some wilting, planted seedlings or small plants and ask children to suggest how to revive them. If necessary, prompt by asking them to feel how dry the soil is. Once water is suggested, help them to think how to carry out a test in which some plants are watered and some are not. Remind children of earlier work and ask them what they will observe. Help children to record their observations in a chart or table and to decide what these show.

LEARNING OUTCOMES

CHILDREN

- name some plants found around the school *eg daisy, dandelion* and name groups of plants *eg trees, grass, pondweed, moss*
- describe orally, by drawing or in simple writing, what the plants are like *eg trees are tall and have thick branches, dandelions have yellow flowers and green leaves* and where they can grow *eg there is grass in the path cracks*
- recognise when plants should not be pulled up

- recognise and say that the plant has grown *eg it is taller, it has more leaves, its stem is fatter*
- communicate observations in drawings and descriptions of these *eg it had two leaves, now it has many*

- state that humans eat some plants

- identify the roots of a plant
- make comparisons, identifying differences and some similarities *eg they are both white*


- present results by writing or drawing in a table or chart prepared for them
- use the results of their experiment to show that plants need water to grow *eg by saying the ones we didn't water died but the others stayed green*

POINTS TO NOTE

If this unit is carried out in the Autumn or Spring it would be helpful to set aside some time in the Summer to look at plants when they are in flower. Work in this unit, which involves observing plants grow, may require short periods of time over several weeks.


It may be helpful to plant some seeds in advance so that eventually children will be able to see them flower.

Some children do not think that 'weeds' and trees are plants.

 **SAFETY** – Some children are allergic to some plants *eg hyacinth bulbs*. Some plants are poisonous, see 'Be Safe' section 12.

Children find growing their own plants from seeds interesting and motivating. This activity offers them the opportunity to grow a plant from seed or from a seedling.

Children may have grown seeds *eg cress* in nursery or reception class. It is helpful, in maintaining enthusiasm, for them to explore how different plants develop *eg beans, peas, amaryllis, mung beans, sunflower, marrow*.

 **SAFETY** – Many seeds bought from garden centres will have been treated with pesticides and should not be handled by children. Seeds from health food shops will usually be safe.

If children have grown their own seedlings, some could be used for this activity.

At this stage it is not necessary to complicate the water/no water comparison by considering other factors. Simply ensure the watered and non-watered plants are left in the same place.

At this stage it is helpful to children to treat the two factors, water and light, separately. Grown cress from the supermarket can be used for this activity. A tray can be cut in half and one half kept in the light and the other in the dark. Results can be seen within a week.

LEARNING OBJECTIVES

CHILDREN SHOULD LEARN

- that green plants need light to grow
- to turn ideas about whether green plants need light to grow into a form that can be tested
- to observe and compare green plants grown in light and dark places
- to conclude that green plants need light to grow well

POSSIBLE TEACHING ACTIVITIES

- ◆ Introduce the idea of green plants needing light to grow and ask children whether they think this is true or not. Ask them how they could test their ideas and when they do so, discuss whether they will water the plants or not. Ask children to talk about differences between plants *eg after 3 days, 8 days, 14 days* and to suggest what these differences show.

- that plants are living but that an artificial plant is not living

- ◆ Show children an artificial plant and a similar living plant and ask them to suggest how they know that one is living and the other is not. Discuss children's ideas with them and extend the discussion by showing them a seedling that has died.

Review work carried out in this unit by asking children to draw a picture of a green plant, to label its parts and to indicate *eg by drawing, writing or saying* what plants need in order to grow healthily *eg water/rain, sunlight*.

LEARNING OUTCOMES

CHILDREN

- suggest a way *eg keeping one plant in a box or cupboard and one in the classroom* of finding out whether green plants need light to grow
- identify differences between the plants *eg the one in the dark isn't green and doesn't look healthy*
- draw a conclusion from the results *eg the one in the dark didn't look healthy. I think plants like to be in the light*

- state that living plants grow
- distinguish between a plant that has died and an artificial plant

POINTS TO NOTE

This activity offers children the opportunity to carry out a whole investigation. It may be helpful to concentrate on the aspects of investigation highlighted in the learning objectives.

Increases in heights of plants which do not have sufficient light arise because the plants are growing towards the light.

At this stage children would be expected only to describe and not to attempt to explain what happened.

