

Unit 2B Plants and animals in the local environment

ABOUT THE UNIT

Through this unit children learn about plants and animals in their immediate environment and how differences between places very close to each other result in a different range of plants and animals being found. They learn that like humans, plants and other animals reproduce.

Experimental and investigative work focuses on:

- turning ideas into questions that can be investigated
- presenting results
- drawing conclusions.

Work in this unit also offers opportunities to relate understanding of science to the local environment, to consider how to treat living things and the environment with care and sensitivity and to recognise hazards to themselves and to take action to control the risks from these hazards.

This unit takes approximately 9 hours.

WHERE THE UNIT FITS IN

Builds on Unit 1A 'Ourselves' and on 1B 'Growing plants'

Children need:

- to know the names of the parts of flowering plants
- to understand that plants and animals are living.

Links with Units 1D, 2C, 3C and geography.

VOCABULARY

In this unit children will have opportunities to use:

- words and phrases relating to life processes *eg produce new plants, produce young, reproduce*
- names for animals *eg worm, snail, fly, robin*
- names for plants *eg daisy, dandelion, oak tree*
- words which have a different meaning in other contexts *eg shoot, fruit, earth, table*
- expressions to describe location *eg within, under, next to*
- comparative expressions.

RESOURCES

- secondary sources *eg video, CD-ROM* showing adults and young in a range of animals
- pictures of plants in flower and with fruits and seeds *eg apple trees, tomato plants, horse chestnut trees, dandelions, peas, beans*
- soil, compost, sand, absorbent paper
- transparent containers for growing seed without soil
- seed pods and fruits *eg sunflower, pepper (capsicum), tomato, horse chestnut, apple*

EXPECTATIONS

at the end of this unit

most children will:

recognise that different plants and animals live in the local environment and name some of them; know that flowering plants produce seeds which grow into new plants; describe what they observe as new plants grow; record observations in tables, using these to draw conclusions

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

recognise that different plants and animals live in the local environment and name some of them; know that plants produce seeds; make observations of plants and animals, recording these, with help, in tables

some children will have progressed further and will also:

suggest reasons why different plants and animals are found in the different environments

LEARNING OBJECTIVES

POSSIBLE TEACHING ACTIVITIES

LEARNING OUTCOMES

POINTS TO NOTE

Introduce unit by asking children what they understand by the word 'animal' and 'plant' and extend to asking them where they expect to find animals and plants locally.

Children may well not think of small animals *eg snails, worms, birds* as animals, or trees as plants. Teachers will need to take account of what the introductory work shows about children's understanding in their short-term planning.

CHILDREN SHOULD LEARN

- that there are different kinds of plants and animals in the immediate environment
- to treat animals and the environment with care and sensitivity
- to recognise hazards in working with soil
- to observe and make a record of animals and plants found
- to present results in a table


- ◆ Walk round the school or visit the local park to identify where plants are growing and where there are animals *eg turn over stones and lift plant pots to find woodlice, look under damp bushes or by damp walls for snails, dig up soil to find earthworms or observe a bird feeding area in the playground*. Help children to make a brief record of what they find using a table prepared for them. Talk with them about what animals and plants were found and where they were found.

CHILDREN

- identify a number of plants *eg dandelion, daisy, buttercup, daffodil, oak tree, holly tree, cherry tree* and animals *eg worm, snail, robin, sparrow, caterpillar, fly*
- state where some of these were found *eg the daisies were in the grass, the snails were under the bucket by the wall*
- produce a record showing clearly the living things they saw and where they were found

Children may not expect to find any animals in the immediate locality of the school. It is sometimes helpful to make sure there are flower pots, stones or logs in suitable places near to the school a few days before this activity.


Children may need to be reminded about not disturbing the animals they find.

 **SAFETY** – When working out of doors, teachers should check that there is no broken glass etc. Sites unlikely to have been contaminated with dog faeces should be chosen. Ensure that children wash their hands after handling soil etc.

- that there are differences between local habitats
- to make predictions about the animals and plants found in different local habitats and to investigate these
- to use drawings to present results and make comparisons saying whether their predictions were supported

- ◆ Choose two contrasting areas *eg the playground, a playing field, an unpaved area under a tree, a school garden, a pond, a grassy area*. Ask children to predict and then find out what animals and plants they can find in each and help them to describe, using drawing and writing, differences between the two areas. Ask them to speculate on reasons for the differences and whether they found the animals and plants they expected.

- identify differences between two habitats and living things found there *eg by drawing and interpreting a picture* saying whether they found what they expected
- suggest reasons for differences *eg it's too dry under the tree, there isn't any soil in the playground but spiders live between the bricks*

 **SAFETY** – All off-site visits must be carried out in accordance with LEA/school guidelines.


- that flowering plants produce seeds

- ◆ Review children's understanding of where new plants come from. Use simple reference books or show children a series of pictures of plants in flower and with fruits *eg apple trees, dandelions, horse chestnut trees* and explain that the fruits which contain the seeds are produced from the flower. Introduce the term 'reproduce'. Present children with a collection of seeds and fruits of different shapes and colours and invite them to add to the collection *eg tomato, apple, mango, pepper, grape, beanpod, seed head from grass, conker, avocado*. Challenge children to find the seeds in some plants *eg old wallflower plants, honesty, sunflower, pea pod*.

- state that seeds come from the flower of a plant
- suggest fruits and seeds which could be added to the collection or add to the collection
- recognise the huge variety of seeds from which plants grow

If this unit is taught in the spring, it should be possible to show children shoots of new plants growing in the local environment. If possible, grow a broad bean/pea plant so that children can see the flower and seeds develop.

It is important to cut open fruits to show the seeds inside so that children do not think plants *eg tomato plants* grow from the whole fruit. A sunflower head or honesty, kept from the previous year, are excellent for showing children where the seeds are.

 **SAFETY** – Children may be allergic to fruits and seeds, especially peanuts. Avoid red kidney beans. See 'Be Safe' section 12.

- to turn ideas of their own, about what plants need to begin to grow, into a form that can be tested
- to observe and make a day-by-day record of observations
- to use the results to draw a conclusion about what seeds need to begin to grow and decide whether this is what they expected
- that seeds produce new plants

- ◆ Ask children to suggest what is needed for seeds to begin to grow. If necessary, prompt them to think about where they found plants growing in the local environment. Plant seeds *eg broad bean, sunflower* in *eg soil, potting compost, sand or paper*. If children do not mention water, ensure that they consider whether the growing medium is wet or dry *eg by having one set of 'wet' and one set of 'dry' containers*. Discuss what they are going to look for *eg shoots, roots* when they observe their seeds and help children to make a day-by-day record of their observations.


- suggest how they should plant seeds in *eg soil or water* and what they should see if they grow
- with help, produce a record of their observations and say what this shows
- state that seeds grow into plants
- explain that seeds need water, but not necessarily soil, to begin to grow

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.

At this stage it is not necessary to introduce the word 'germinate'.

It is helpful if some seeds can be grown in water in transparent containers so that children can see the roots develop.

At this stage it is not necessary to consider warmth as a condition for germination. However, children will see results more quickly if the seeds are in a relatively warm place.

 **SAFETY** – Use soils free from glass etc and unlikely to be contaminated with dog faeces. Wash hands after handling soils.

LEARNING OBJECTIVES

CHILDREN SHOULD LEARN

- to recognise when a comparison is unfair

- that animals reproduce and change as they grow older

POSSIBLE TEACHING ACTIVITIES

- ◆ Show children results from the previous activity *eg a germinated seed on wet paper and one which hasn't germinated in dry sand* and ask them whether it was fair to compare them.

- ◆ Use secondary sources *eg video, CD-ROM, reference books* and/or first-hand observation *eg of frogspawn* to illustrate to children that animals in their local environment *eg birds, frogs, snails, butterflies* produce young which grow into adults. Ask children to write about, and illustrate, changes in one animal.

Draw together work in this unit by discussing the habitats with the children and asking them to produce an information sheet, for their parents, about these habitats and the animals and plants that are found there.

LEARNING OUTCOMES

CHILDREN

- recognise that a test where two factors are changed *eg growing medium and water* does not provide a fair comparison

- recognise that animals in their local environment produce young
- describe how one animal changes as it grows *eg tadpole to frog or baby bird to adult*

POINTS TO NOTE

This activity is designed to illustrate that animals reproduce and change as they grow older. Some children may wish to go into more detail about a particular animal, but this is not an expectation for all children.

If frog spawn is taken from the environment, use only a small amount and, if possible, return tadpoles to the pond from which they came.

This could involve the use of IT which builds on IT Unit 2A 'Writing stories: communicating information using text'.



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