

## Unit 2C Variation

### ABOUT THE UNIT

Through this unit children will become more aware of the huge variety of living things within their local environment and of differences between them. They will learn that although individual living things are different there are similarities which can help to sort them into groups and that this is helpful.

Experimental and investigative work focuses on:

- making observations, measurements and comparisons
- presenting findings in drawings and block graphs
- using results to draw conclusions.

Work in this unit also offers opportunities for children to relate understanding of science to environmental contexts and to consider how to treat living things with sensitivity.

Some of this unit may be undertaken in relation to the school's programme for personal, social and health education.

This unit takes approximately 9 hours.

### WHERE THE UNIT FITS IN

Builds on Unit 1A 'Ourselves', Unit 1B 'Growing plants' and Unit 2B 'Plants and animals in the local environment'

Children need:

- to know vocabulary relating to plants and animals from previous units.

Links with Units 1C, 1D and geography and art.

### VOCABULARY

In this unit children will have opportunities to use:

- words naming features of animals and plants *eg feathers, fur, shell, branch*
- comparative expressions *eg long, longer, longest, small, smaller, smallest, similar to, different from*
- expressions making generalisations *eg 'we all...'; 'most have...'*
- expressions of time related to change.

### RESOURCES

- pictures which help children to understand that humans are of different genders, ages and ethnic origin but are the same inside
- pictures and specimens of a range of animals and plants
- video showing a variety of animals
- apparatus for measuring length *eg metre sticks, tape measures* and/or non-standard measures

### EXPECTATIONS

#### at the end of this unit

*most children will:*

recognise similarities between animals and between plants and differences within these groups; suggest questions relating to differences between living things; make measurements of length using standard units and, with help, present results in block graphs, making simple interpretations of these

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

recognise differences between animals and plants; make some measurements using non-standard units

*some children will have*

*progressed further and will also:*

identify ways in which the appearance of humans changes as they get older and some characteristics that will not alter; explain what their block graphs and charts show

**LEARNING OBJECTIVES**

**CHILDREN SHOULD LEARN**

- to observe and recognise some simple characteristics of animals and plants
- that the group of living things called animals includes humans
- to treat animals with care

**POSSIBLE TEACHING ACTIVITIES**

- ◆ Review children's understanding by presenting them with a collection of pictures and specimens of animals and plants *eg bee, spider, worm, mealworm, snail, dog, horse, bird, snake, crocodile, butterfly, whale, grass, ivy, holly, cherry tree, daffodil, oak tree, human* and ask them to group them into animals and plants. Elicit simple ideas about the groupings *eg the plants have green parts, the animals all move*. Ask children explicitly about some items *eg a green animal*.

- that humans are more like each other than they are like other animals
- make careful observations to identify similarities

- ◆ Show children a video of a variety of animals, possibly including those not found locally. Present children with a collection of pictures of humans and other animals and ask them to consider questions *eg*:
  - *in what ways are all the animals like each other?*
  - *which are humans?*
  - *how do we know?*
  - *in what ways are all the humans like each other?*
 Ask children to suggest two answers to each question. Talk about children's answers with them, revisiting parts of the video if appropriate.

- that humans are similar to each other in some ways and different in others
- to explore human variation making observations and comparisons

- ◆ Ask children to bring in a photograph of themselves. Ask children to sort the photographs into groups using their own criteria *eg boy/girl, hair colour, hair length, height*. Ask children to write a description of a member of the class so that others can identify who it is or make and record a comparison of two individuals listing similarities and differences. Discuss with children how they could change the way they look and whether they could still be recognised.

- that plants in the local environment are similar to each other in some ways and different in others
- to make observations and comparisons of local plants

- ◆ Present children with a collection of plants (or pictures of plants) found locally, including some which have had the soil washed from their roots. Clarify the distinction between part of a plant and a whole plant *eg a daisy flower and a daisy plant* and revise the parts (plant, leaf, stem, root and flower). Show, using pictures or by going outside, that many trees have flowers. Ask children to choose two different plants and make drawings of them, labelling parts *eg stem, leaf, root, flower, branch* and describing how these differ.

**LEARNING OUTCOMES**

**CHILDREN**

- decide whether a familiar living thing is an animal or plant and give a simple reason for the decision *eg it has got leaves, it can move*
- give a simple reason why humans are part of the animal group *eg we walk, we grow*
- recognise that animals need to be handled with care

- identify ways in which the animals are like each other *eg they've all got heads, they've all got eyes, they all move*
- identify ways in which the humans are all like each other *eg we all have two eyes, two legs*
- identify ways in which humans are different from many other animals *eg we walk on two legs/upright, we don't have fur, we have hair*

- identify ways in which humans are similar to each other and ways they are different *eg we all have hair but some have straight hair and some have curly hair*
- recognise that humans' appearance changes over time *eg we get taller, heavier*
- recognise that some features of appearance can be changed *eg length of hair* but others are difficult to change or cannot be changed *eg colour, shape of face*

- identify parts common to plants and point out differences *eg shape of leaf, colour of flower, thickness or woodiness of stem*

**POINTS TO NOTE**

Teachers will need to take account of what this introductory work shows about children's understanding of animals and plants in short-term planning for this unit.

If live animals *eg woodlice, snails, mealworms* are used in this activity children should be reminded to leave them in their containers and told they will be returned to their natural habitat when the activity is complete.

It is important to use a picture or specimen of a whole plant *eg a picture of a holly bush rather than a holly leaf and berry*.

It may be helpful to explore children's reasons for deciding that *eg fish, birds, spiders* are animals.

 **SAFETY** – Wash hands after handling animals.

Children find it easier to identify differences than similarities. They may need help to recognise simple similarities *eg we all have eyes*.

It is important for teachers to help children to be sensitive to the differences between them.

It is important to clarify with children the difference between criteria *eg colour of eyes and colour of hair* which are permanent features and criteria *eg length of hair, colour of jumper* which they can change easily.

It is helpful to discuss the significant features children should include in their drawings before they begin.

It is important to avoid pulling up wild flowers just for this activity. Garden plants or wild flowers grown in pots can be used instead.

 **SAFETY** – Wash hands after handling soils. Choose areas that are unlikely to be contaminated with dog faeces.

## LEARNING OBJECTIVES

### CHILDREN SHOULD LEARN

- that some differences between themselves and other children can be measured
- to measure hand span in standard units of length (to the nearest centimetre)
- to present measurements in block graphs
- to make comparisons of hand span
- to raise questions about differences between themselves, test them and decide whether their predictions were correct

- that living things in the locality can be grouped according to observable similarities and differences
- to present results in a block graph

## POSSIBLE TEACHING ACTIVITIES

- ◆ Ask children to compare the size of *eg their hand* with the hand of another child and discuss how they could be measured. Help children to measure their hand span, discussing whether they should stretch their hands out as much as possible and where to take the measurements from. Help children to make a tally chart and block graph of their findings. Ask the children questions about the graph and ask them to speculate on other differences between children *eg Do the people with the biggest feet have the biggest hand span?* Help children to answer the question *eg by lining up in order of shoe size and then in order of hand span.*

- ◆ Give children a collection of pictures of animals (including humans) found in the local environment and ask them to find different ways of sorting them *eg legs/no legs, fly/walk/slither*. Talk with children about their groupings and help them to make block graphs showing their findings.

## LEARNING OUTCOMES

### CHILDREN

- make accurate measurements of hand span
- with help, produce a block graph showing the number of children with a particular hand span
- describe the shape of the block graph and explain what it shows, where appropriate, in response to simple questions

- choose a criterion for grouping
- with help, present findings in a block graph and explain what this shows

## POINTS TO NOTE

Other comparisons could be made *eg length of leg and how far children jump* leading to questions *eg do the people with the longest legs jump the furthest?*



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Ref: QCA/98/210

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