

THIRD AND FOURTH – PLANTS AND ANIMALS

Teacher Guidelines:

- P. 57 - 86

Linkage:

- Environmental awareness and care – recycling materials for construction /caring for plants and animals
- Materials: Properties and characteristics e.g. rough, smooth, shiny, big, small etc
Clothes we wear in different seasons.
- Sound: Identifying animal sounds from tapes / sounds in the environment
- Light: Light as a form of energy essential for growth of plants.

Integration:

- Visual Arts: pictorial representation of observations / leaf rubbings / construction of simple bird feeders / papier mache models of plants and animals / using recyclable materials to make pots or model houses for growing plants.
Camouflage paintings / make collages or 3D models of different animals from local or wider environments / make habitat displays from any suitable medium.
- Maths: Sorting activities using pictures – Measuring growth of plants – displaying graphically information such as number and type of trees / types of plants / types of minibeasts in our school grounds etc.
- Music: Identifying animal sounds from tapes / Music appreciation – Carnival of the animals / Peter and the wolf etc.
- Geography: Exploring natural environments
- Language development – English and Gaeilge

Content Objective:

OBSERVE, IDENTIFY AND EXAMINE THE ANIMALS AND PLANTS THAT LIVE IN ENVIRONMENTS

Local stream, river or pond, seashore. Aspect of a local rural landscape (e.g. Road or laneway verge, hedgerow, peatland, field), aspect of a local urban area (e.g. areas around school, park, waste ground)

Some suggested activities:

- Initiate observations in the outdoor environment (Exemplar 11, Teacher Guidelines p 62)
- Keep a diary of a habitat within school grounds or surrounding areas eg. hedgerow / woodland/ stream / waste ground / pond (Exemplar 16, Teacher Guidelines p. 73) –

observe / record the variety of plants and animals at different times of the year (Exemplar 12, Teacher Guidelines p.64). Digital cameras can also be used to record change.

- Adopt a tree in the school grounds – observe and record seasonal changes to leaves / twig / fruits and seeds etc. in diary form.
- Observe bird behaviour and feeding habits in the schools grounds. Bird tables and feeders can be used to attract bird life.
- Write an estate agents description of the various habitats in the school grounds and surrounding area. e.g. Damp area that rarely gets the sun; breezy with a good view.
- Collect some minibeasts for close observation (Exemplar 17, Teacher Guidelines p. 78). Develop observations through questioning (Exemplar 13, Teacher Guidelines p 66)
- Create own habitat outside with logs, stone, old carpet, old tyre, sink, barrel or create a vivarium inside using damp moss, stones, gravel, damp sand, earth and leaves in a large see through container. Small animals such as spiders, woodlice and snails could be observed just for a few days. (See Teacher Guidelines p. 60 Conservation code)

Some suggested investigations:

- Estimate the number of plants or animals in a habitat. A coding system or scale against which they can consider their estimations will be required. (Exemplar 14, Teacher Guidelines p. 68).
- Do woodlice prefer damp or dry places? (Exemplar 19, Teacher Guidelines p. 82)
- Birds: What is the most common visitor? What do they eat? How do they eat?
- Plants: Investigate different plants and animals in habitats where the children play eg. school grounds, woodland, stream or waste ground. Where are some plants or animals found and why there eg. moss on wall, worms in soil, daisies growing low in grass, minibeasts under stones etc?

Some suggested design and make:

- Make a vivarium and / or a woodlouse habitat with different choice chambers.
- Design simple bird feeders – using orange netting, juice cartons, nuts, cooked rice, oats, lard balls etc
- Design and make a pooter for collecting small minibeasts.

Content Objective:

DEVELOP AN INCREASING AWARENESS OF PLANTS AND ANIMALS FROM WIDER ENVIRONMENTS

Some suggested activities:

- Examine pictures / photos of seashore / woodland habitats / bog (i.e. those children would not be very familiar) and list animals and plants that the children recognise.

Which of these can also be found in local habitats? Why/why not?

- Visit a habitat that the children would not be very familiar with locally e.g. Bog or seashore. Prior to visit ask the children to do an annotated drawing (a drawing with labels) including the various plants/animals they expect to see when they get there. After the visit compare what the children thought they would see and what they actually saw. Record results.
- Examine pictures/photos of distant habitats (e.g. arctic/ desert / tropical regions) and list animals and plants that the children recognise. How are the plants and animals in these regions similar / different / adapted to conditions – polar bear, cactus, elephant, penguin etc?
- Organise class into groups to complete projects such as “Animals/Plants from around the world”
- Research answers to questions such as: What is the largest land mammal, the oldest tree etc.?
- Visit a zoo, wildlife park or farm or watch suitable videos

Some suggested investigations:

- Differences between animals e.g. penguin and peacock, eagle and ostrich, using pictures of plants and animals.
- Differences between plants e.g. cactus or pine leaf and beech leaf.

Content Objective:

OBSERVE AND EXPLORE SOME WAYS IN WHICH PLANT AND ANIMAL BEHAVIOUR IS INFLUENCED BY, OR ADAPTED TO, ENVIRONMENTAL CONDITIONS

Suitability of plants for shaded/damp/dry/wet conditions

Use of colour and camouflage by animals

Some suggested activities:

- Sort mini-beasts according to colour / where they live / what they eat / how they move / use of camouflage etc. Why do some creatures need camouflage? Discuss how camouflage is used for protection e.g. worm / woodlice. Discuss how bright colours can serve as a warning e.g. ladybird.
- Draw up lists of features different animals have, that we do not and explain why that is so e.g. why do rabbits have long ears, sharper, bigger teeth and have claws?
- Explore animal adaptation in the school grounds e.g. worms – long, thin, slimy, move slowly etc. Sparrow – wings, feathers, good eyesight, sharp beaks.
- How do some wild flowers survive difficult environmental conditions? Dig up a dandelion plant and observe root system. Observe how daisies grow very low on the

ground.

- Compare and contrast plants growing in sunny and shady (dry and damp) conditions.
- Why are caterpillars difficult to see when you look at a plant? Explore colour in nature in immediate environment.

Some suggested investigations:

- Do woodlice prefer damp or dry conditions? Do woodlice prefer light or dark conditions? (Exemplar 19, Teacher Guidelines p. 82)
- Are snails always found in damp conditions?

Some suggested designing and making:

- Design and make a woodlice choice chamber from old ice-cream or other recyclable containers. (Teacher Guidelines p.82)

Content Objective:

SORT AND GROUP LIVING THINGS INTO SETS ACCORDING TO OBSERVABLE FEATURES

Animals that have fur, feathers, scales

Flowering and non-flowering plants

Some suggested activities:

- Sorting animals into sets using their own criteria. Children may group according to colour or size at first and then think of different ways of sorting and grouping eg. animals with wings / shells / body covering / how they move etc.
- Sort plants according to flowering / non flowering, colour, number of petals etc. Put different types of animals or plants with similar characteristics together in groups. (Teacher Guidelines p.70) Record results.
- Sort living things into plants or animals – Discuss similarities and differences. Make a grid with - plant / animal / not sure. Sort pictures further into animals or plants found at the seashore / farm / woodland / bog / woodland etc.

Content Objective:

USE SIMPLE KEYS TO IDENTIFY COMMON SPECIES OF PLANTS AND ANIMALS

Some suggested activities:

- Children can sort animal into sets (as before) using their own criteria e.g. colour or size. They can think of different ways of grouping and regrouping animals e.g. has wings / shells / legs / no legs etc. Sort plants into groups e.g. flowering or non flowering / colour / no. of petals / no. of leaflets etc
- Encourage the children to look at each of the subsets and choose a question that will

help divide that into further subsets e.g. Does it have a shell or not? Does it have a single leaf or lots of leaflets? (Teacher Guidelines p. 70)

- Use the 'Winter twig' key (Teacher Guidelines p. 72) to help identify tree twigs (oak, horse chestnut, ash, beech and lime) in winter. Use the 'Animals' key to help identify animals (snail, worm, butterfly and spider) with legs or no legs etc.
- Use some other keys to aid identification.
- Pocket guides are useful in identifying features of animals and plants.

Some suggested design and make:

- Design and make identification keys

Content Objective:

UNDERSTAND THAT PLANTS USE LIGHT ENERGY FROM THE SUN

Some suggested activities:

- Place a 2cm wide piece of black sugar paper across a leaf of a houseplant. Secure at either end using paperclips. What happens to the covered part of the leaf after a few days? What does this show us?
- Observe and describe grass in a small area. Cover some grass with a shoebox and leave for a few days. What changes occur – colour etc? Remove the shoebox and check the grass in a few days.
- Grow several bean seeds in shoebox houses with chimneys and windows.
- Ask the children to explain why the seeds grow out the windows/chimneys.

Some suggested investigations:

- Do plants need light to grow? Plant four pots of beans and place them in different amounts of light at different distances from a window. Observe and record what happens.
- Does amount of light/distance from light source/ temperature affect plant growth? (Sun gives us light and heat)

Some suggested design and make:

- Model houses made from shoeboxes with chimneys and windows.

Content Objective:

COME TO APPRECIATE THAT ANIMALS DEPEND ON PLANTS AND INDIRECTLY ON THE SUN FOR FOOD

Some suggested activities:

- Put a label on the back of each child with the word sun or the name of a plant or animal. Ask them to find or put their hand on their energy provider e.g.
Garden: cabbage, caterpillar, bird, hawk.

Meadow: Grass, cow, person.

Pond: Algae, tadpole, beetle, fish, heron. *Grass,* rabbit, fox.

Some suggested investigations:

- Draw up a list of food eaten the previous day. Does our food come mainly from animal or plant sources? Challenge the children to find one food that does not lead back to a green plant. Refer back to previous investigation re the need for plants to have light to grow.

Content Objective:

DISCUSS SIMPLE FOOD CHAINS

Some suggested activities:

- Go to a habitat e.g. a pond and observe first hand the life found there. (Exemplar 16, Teacher Guidelines p. 73) Discuss how one animal is eaten by another and this in turn eaten by another. Food chains can be established and recorded by observing animals as they feed. Relate this to animals they are familiar with e.g. grass / rabbit / fox.
- Challenge children to make the longest food chain (water chains are usually longer than land chains) Draw a small picture of the sun in the centre of a sheet of paper. Draw a short arrow to a plant, then to an animal or animals, then to a person. Order living things in a simple food chain and understand the dependency of one on the other. Discuss what would happen if one animal or plant died out.
- Make up some cards which children then group and place in sequence.
- Ask the children where their food comes from. Start from a meal and work out the food chains that produced it. Trace children's food back to its source – usually a green plant.

Content Objective:

BECOME AWARE OF SOME OF THE BASIC LIFE PROCESSES IN ANIMALS

Feeding, breathing, growing, moving, reproducing (life cycles), using their senses design and make an animal home that provides for growth, exercise, feeding of the animal.

Some suggested activities:

- Do all animals feed on the same food and in the same way? Group and sort animals into meat eaters (carnivores), plant eaters (herbivores) and animals that eat both plants and animals (omnivores). Do they chew / tear / swallow etc?
- Observe how different animals feed and/or move e.g. place a snail / slug in a clear plastic container smeared with some banana and watch from underneath how they eat and move.
- Sorting animals according to movement i.e. using 2/4 legs, do they walk / crawl / slide/ swim / fly? Subsets can be made; divide the "fly" group into birds/not birds etc.

- Find out about the main stages of some animals including a butterfly, a frog and sequence pictures of the main stages of growth.
- Discuss why rabbits have long ears / foxes have sharp teeth / herons have long beaks etc.

Some suggested investigations:

- Do caterpillars eat more at night or during the day? (Teacher Guidelines p.80)
- Investigate food preferences of animals e.g. what caterpillars / snails / ants / worms / birds like to eat by placing 2 / 3 different foods on a tray, bird table or in a container.
- Investigate animal behaviour e.g. whether woodlice prefer light, dark, dry or damp conditions. (Exemplar 19, Teacher Guidelines p. 82)

Some suggested design and make:

- Make a vivarium in the school using damp moss, gravel, damp sand, stones, earth and leaves in a large see through container etc. Small animals can be observed in the temporary home for a few days.
- A butterfly observatory by using recyclable materials e.g. large plastic water containers / jar of water / leafy twig with caterpillar.
- A woodlice choice chamber using recyclable materials e.g. old ice cream boxes / shoe boxes etc. (Teacher Guidelines p. 82)

Content Objective:

INVESTIGATE THE FACTORS THAT AFFECT PLANT GROWTH

Water, light, types of soil, temperature

Some suggested activities:

- Grow a variety of seeds e.g. tomato, orange, apple, avocado, pumpkin, sunflower, grass etc. When germinated, investigate what they need to grow into healthy plants? Draw diagrams, measure growth, graph results and keep a diary.
- Place a clear container over a patch of grass or over a section of seeds in a seed tray. Observe the effects of this mini greenhouse by comparing it with uncovered grass or seeds.

Some suggested investigations:

- Investigate the conditions necessary to maintain a healthy plant. Place plants in different environments, varying the light, water and temperature and observe growth. Choose one variable at a time to test e.g. plant with light and plant with no light (fair test) and record results.
- Plant four pots of bean seedlings, observe growth and investigate what happens when one gives plants different amounts of water / light / heat.
- How does water get from the roots to the tips of the leaves? (Exemplar 21, Teacher

Guidelines p. 85).

- Coloured plants could be produced by placing white flowers e.g carnations, in jars of coloured water. Predict what would happen if stems were split and placed simultaneously in jars of different coloured water.

Some suggested design and make:

- Various plant pots (chimney shoebox houses with windows) using recyclable materials such as foil / juice cartons / shoeboxes / eggshells / egg boxes etc
- Grassheads using lawn seed, compost and old woolly socks with buttons for eyes.