



Activity Sheets

Plant and Animal Lifecycles

Educational Visitor Activities

Plant and animal lifecycles

Aim of the plant and animal lifecycle activities

To introduce the children to the lifecycles of different plants and animals found in Local Nature Reserves. The diversity of the reserves allow for lots of investigative activities.

Generally animals have simple lifecycles that are similar to that of humans. Most reptiles, fish, birds and mammals are either born alive from their mother or they hatch from eggs and then grow up. However, some creatures like butterflies and moths have a more complicated lifecycle that includes a period of metamorphosis (the change that occurs in some animals from one stage in its life to another, for example a caterpillar to a butterfly).

Activity: Plant and animal tales



A water vole (*Arvicola terrestris*) by Grant Auton Photography

Every plant and animal that you see on the reserve has a story to tell. None of them can speak for themselves, so can you tell their story for them? Do Canada Geese come from Canada and what is so bad about Himalayan Balsam? What does a Dragonfly do during the 2 years of its life when it is growing up in the water.

The questions above are just a few suggestions for some good story material. If you take a walk around the reserve, you will see many kinds of plants and animals that have an interesting background. Choose one that you like and find out its name. Check the identification with your teacher or a Countryside Officer.

Resources

- Books about wildlife
- Information about the reserve in the Educational Visitor Guide
- Photos taken on the Reserve
- An internet search

Challenge

Write a really interesting story about one of the plants and animals on the Reserve. You can imagine that you are the plant or animal and tell your own story, or choose any other style of story writing or newspaper reporting. Use your research to include as many details as you can, but also try to keep it interesting and exciting.

Additional background information

Some good storylines can come from the life histories of plants and animals, especially those that, like many insects, make a big change at some time in their life. You might try to imagine an interesting day or week in the life of an animal such as an otter or a pike - are they the hero or the villain? For some plants and animals the story could be about how they came to be in this country or if it is a very rare type, why is it being threatened with extinction?

Activity: As old as the trees



Scots pine

It is commonly known that you can tell the age of a tree by counting the rings in the trunk, but it is also possible to get an approximate age by measuring the size of the trunk. This also has the advantage of leaving the tree standing and able to get even older!

Practice the method of aging a tree. You need to measure the circumference of the trunk in millimetres at a height of 150cm from the ground. Divide the circumference by 25 and you will get an approximate age for the tree in years. If the tree is in a wood it will probably be older than this calculation suggests.

Resources

Tree identification key
Camera
Tape measure
Notebook and pencil
Calculator

Challenge

Choose some large trees on the reserve and calculate how old they are. What can you find out about why these trees have been allowed to grow to this age. Are there lots of trees of a similar age or just a few? What was the land used for before it became a Nature Reserve and how many trees were there then?

Additional background information

This method is a “rule of thumb” and there are some exceptions to the rule. It works best with trees that are grown by themselves and have a full crown of branches. A tree in woodland can be twice as old as one of the same circumference growing in the open and some species have faster or slower growth. More information can be found in “A Field Guide to Trees of Britain and Northern Europe” by Alan Mitchell.

Activity: Water, water everywhere



Many of the birds that are seen on or around lakes and rivers are fairly large and easy to identify. You can watch them quite easily and get to know their habits. Can they be seen on any bit of water or do they like some places more than others?

Walk quietly around the reserve and take time to sit and watch the birds using the ponds, lakes or rivers. Find out the names of as many of them as you can. Use a map of the Reserve to show where you have seen them.

Resources

Information about the reserve in the Educational Visitor Guide

Binoculars

Bird identification keys

Notebook and pencil

Challenge

Discover as much as you can about the water birds on the Reserve. Do they use all parts of the water or do they spend more time in some places? Where will they make their nests and will they stay on the Reserve all through the year? Make a poster to show how important water is for the wildlife of the reserve.

Additional background information

Water birds could include, swans, ducks, geese, grebes, gulls, rails and wagtails. There are several different types within these groups so try to identify the correct species - the reserve information will help. There may be other birds that feed over the water or around the edges and you might want to include these in your survey. Try to see what the birds are doing and think about why they are making use of the water while many other birds do not.

Activity: Fruiting time



Hips

Plants make seeds so that new plants can grow from them. Seeds are found inside fruits. Some fruits are soft, juicy and brightly coloured but there are a lot of hard, dry and brown ones. How many can you find? What can the fruit do to help the seed find a place to grow?

Visit the reserve in late summer or autumn. Make a collection of fruits - just one of each type - or take photos and make notes of what you see. Remember that a fruit is a part of the plant in which you find seeds so don't just look for brightly coloured and juicy ones!

Resources

Information about the reserve in the Educational Visitor Guide

Camera

Identification keys

Paper bags to collect fruit

Hand lens

Notebook and pencil

Challenge

Find as many different types of fruit as you can on the Reserve. Examine the fruits to see where seeds are and if there is just one, a few or many. Try to decide how the seed will get to a place where it can grow into a new plant.

Additional background information

Plants make fruits as soon as they finish flowering so they can be found throughout the spring and summer, but most of the berry fruits are found later in the year. Some fruits are designed to carry the seeds through the air and you can do some experiments to see which ones are best at this. Remember that some of the berries might be poisonous to humans and so don't eat anything while doing this investigation of fruits. It is important that you wash your hands after coming in contact with fruits and nuts.

Activity: Dabblers and divers



If you watch birds swimming on the water you will see that some dive under the water and some don't. Birds that dive are usually looking for food. Some birds will feed by just putting their heads under the water. These are called dabblers.

Visit the reserve and try to work out the names of the different water birds. Try to get the full name because there are a lot of different types of duck. Watch what they do and decide whether they are divers or dabblers.

Resources

Information about the reserve in the Educational Visitor Guide
Binoculars
Bird identification keys
Notebook and pencil
Camera

Challenge

Spend some time watching birds on the water. Look carefully at how they are feeding and make lists showing which birds are dabblers and which are divers. You may also be able to see what they are eating and you can record this information too.

Additional background information

The Environmental Visitor Guide will help you to identify the birds that you see. You could use an identification chart before you visit the reserve to see what they look like. Diving birds will often be seen feeding in deeper water than dabbling birds and you could mark a map to show the feeding sites. The shape of a bird's beak will often give a clue to the type of food it eats. When you have made your lists, look to see if there is a difference in bill shape between the two groups of bird.

Activity: Mr and Mrs



A brightly coloured duck is usually a male. His mate will usually be dull and brown. Why is that? Are there other animals where it is easy to see which is male and which is female? What is the reason for the differences?

While visiting the Reserve, keep a note of any animals where you can see a difference between the male and the female. If possible, take some photos. Use identification sheets, or ask the Countryside Officer to tell you if an animal is male or female. There are quite a few types of birds which show a difference but also look out for insects such as dragonflies.

Resources

Information about the reserve in the Educational Visitor Guide

Camera, Binoculars

Identification keys

An internet search

Books from the library

Notebook and pencil

Challenge

Identify as many animals as you can where it is easy to see the difference between male and female. See if you can find out the reason for the difference. Make lists of animals which have the same reason for being different. You can use your pictures to illustrate the lists.

Additional background information

For some animals which stay together as a pair while raising their young, it is quite easy to see that the male and female either look the same or different. For some, like the Mute Swan, there is a difference but it is very small. Dragonflies fly around while joined together so this can make it easy to see which is male and which is female. In spiders, and some other animals, there can be an obvious size difference. For Bush-crickets, the main difference is the spike that the female has for laying her eggs.

Activity: What will I be when I grow up?



Harlequin larva

Some animals start life looking very much like their parents - but some look completely different. During a visit to the reserve, you will see some young animals and you may see their parents too. Birds will often stay together as a family for a while and so it is easy to tell what the baby will grow up to be. It is more difficult with animals that don't look after their young.

Make a list of some young animals that you have seen on the reserve. These could be baby birds or some young insects. If you have been pond or stream dipping there will be lots of insect larvae and nymphs on your list. You may also see tadpoles. You will also find insects, spiders and snails in the long grass and in the bushes.

Resources

Information about the reserve in the Educational Visitor Guide
Camera, Identification Keys
An internet search
Books from the library
Notebook and pencil
Collecting pots and hand lens

Challenge

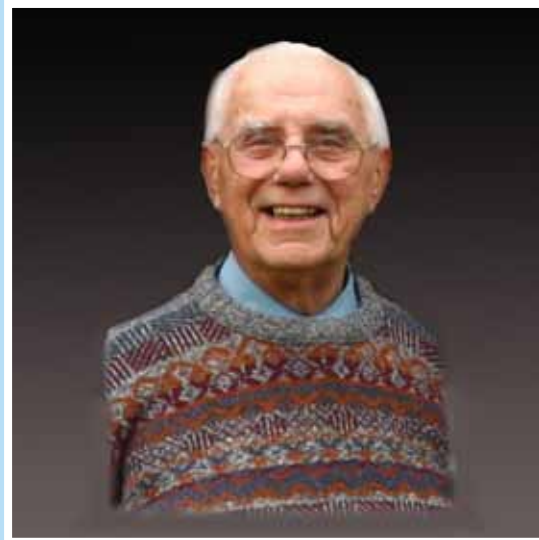
Use pictures that you have taken or found on the Internet to show the differences between young animals and the adults that they grow into. You can use the pictures to make cards with young animal on one side and adult on the other (or side by side) or make them into a chart.

Additional background information

All animals change as they become adult. Insect larvae have to go through a stage in their life called a pupa, but insect nymphs do not and usually look more like the adult insect. Birds will change their feathers as they grow older and perhaps more than once before they are adult. Young mammals and fish usually look very much like the adult, but there are some slight changes to be seen. Frogs and toads make a series of changes as they grow from egg to adult. Newts don't change as much.

This publication is dedicated to the memory of:

Len Weatherly



Head Teacher
Shepherd's Spring Infant and Junior School, Andover
1967 - 1984

This guide contains a series of National Curriculum linked activities suitable for Key Stage 2 pupils. Some activities are adaptable for younger or older age groups, if necessary. The activities are suitable for use in the classroom or at a Test Valley Borough Council Local Nature Reserve. A detailed map of the site is included in the Educational Visitor Guide to help you find your way around the site.

The Educational Visitor Guides and activity sheets are available from our website: www.testvalley.gov.uk

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