

NATURE

Teachers' Notes

Nature

THE WORLD AROUND US

Goals of the module

This education resource pack is about nature around us—the flora and fauna of Ireland. The activities are designed to help students recognise and name many of the most common species of birds, flowers, trees and insects that they see around them every day. Much of the emphasis is on simple observation, encouraging students to stop and look. As well as identification, the pack will encourage students to observe the differences between species and explore why they are different colours, how they behave, where they grow or live, what they eat and what eats them.

The pack also provides students with ideas on how to attract local

wildlife and how to identify, describe and classify what they see, understand food chains and investigate what plants need to grow. Ultimately this will increase students' awareness and provide them with the tools to further explore nature in their local surroundings.

The activities and investigations in the module are designed to apply to all school grounds, regardless of their location. Various suggestions are presented for urban, rural and suburban schools, big or small.

Curriculum links

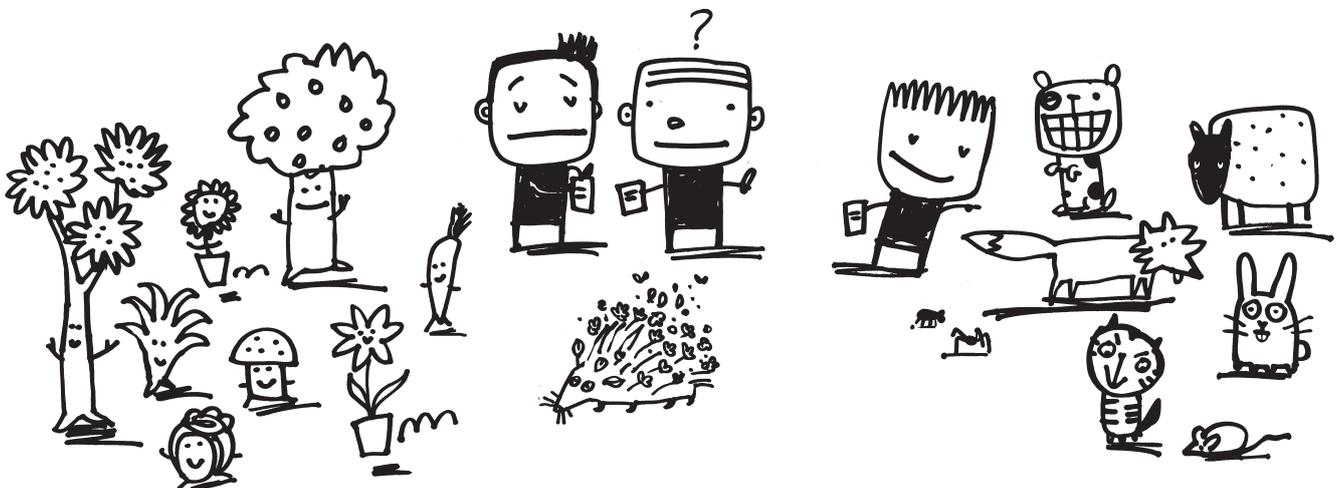
This pack is relevant to the Living things strand of SESE, Science and Geography, in particular the strand unit Plant and animal life,

and the Environmental awareness and care strand (strand units Environmental awareness, Science and the environment and Caring for the environment).

Specific curriculum links are also made to Arts and Drama and the People at work strand unit of the Geography curriculum. Incidental links are made to English, Gaeilge and Mathematics.

Overview of topic

Ireland has a rich natural heritage due in part to its unique geological history. There are habitat types in Ireland that are scarce or absent over much of Europe. There are 60 Irish habitats that the EU recognises as being in need of protection.



NATURE

Teachers' Notes

Continued →

**Habitats**

Native woodland About 10,000 years ago broadleaf and pine forest and raised bog covered most of Ireland. Then in Neolithic times, 5,000 years ago, clearing of woodland began for timber and agriculture. By the beginning of the twentieth century only about 1% of the country had forest cover. Forest cover in Ireland is now about 10%, but most of these trees are non-native conifers. This level of forest cover is still a lot lower than the European average of 31%. About 100,000 hectares of Ireland's native broadleaf woodland remain. Native species of tree and shrub include sessile oak, pedunculate oak, alder, silver birch, wild cherry, whitebeam, hazel, ash, rowan, willow and elder, examples of which can be found in woods and parks around the country.

Hedgerows Hedgerows are still a common feature of the Irish countryside. They are vitally important as habitats in Ireland as they provide corridors of native woodland for a number of plant and animal species. These corridors of hedgerow often link isolated patches of native woodland. The Wildlife Act 2000 prevents the cutting or destruction of hedgerows between 1st March and 31st August, allowing birds to nest undisturbed. Schools may use hedgerows in their local area as possible sites for field study (safety considerations, such as proximity to busy roads, should be paramount). If suitable, these hedgerows may be 'adopted' by schools, with appropriate consultation with the landowner and local authority.

Fen and bog There are two major types of waterlogged peatland habitats in Ireland: fens and bogs. Peat is a soil that is made up of the partially decomposed remains of dead plants that have built up in layers in wet places for thousands of years. Peat is found in fens and bogs. Fens are alkaline and are supplied with water from groundwater, while bogs are acidic and are supplied with water from rainwater. The water level in fens is usually close to or above the peat. The average peat depth in a fen is less than two metres, whereas peat depth in a bog varies from two to twelve metres. Ireland has a considerable variety of peatlands, many of which are of international importance. They include fens, raised bogs, lowland and upland blanket bogs and

NATURE

Teachers' Notes

Continued →

cover about 16% of the land surface of the country. Irish fens alone provide a habitat for 226 plant and 638 animal species.

Peat is used as a solid fuel and in gardening products. Intensification of agriculture and afforestation programmes have depleted the amount of peatland suitable for conservation. According to the Irish Peatland Conservation Council, only 19% of the peatland resource remains in a relatively intact condition.

Freshwater habitats About 50% of our land is drained by just nine rivers, and there are some 6000 lakes with an area of over one hectare (10,000m²). Arterial drainage of rivers for agricultural land can damage river habitats. The salmon fishery in the Boyne river and its tributaries has been adversely affected, and the pearl mussel and crayfish populations have also suffered as a result of this type of activity.

Coastal and marine habitats Ireland's coastline, including that of its islands, is about 7100 km long. Some of the most unique habitats along our coast are:

- Maërl communities (deposits of red calcareous algae), which form a rare habitat with associated flora and fauna.
- Machair, a mosaic of wetlands, dunes and grasslands grazed by sheep and cattle, which is only found between Galway Bay and Malin Head.
- Shingle beaches, which are important for invertebrate and plant species.
- Coastal lagoons, which occur mainly on the south-west coast and have rich insect and flora life.

Species in Ireland

The exact number of species of animals and plants in Ireland is not known, but estimated numbers are as below:

The EU recognises 25 Irish species as being in need of protection.

There is only one native reptile in Ireland, the common lizard. A second reptile, the slow worm (which looks like and is often mistaken for a small snake), has been found in the Burren, but is thought to have been introduced

recently and is not very widespread.

Threats to our natural heritage

Compared to a few hundred years ago, the range of the majority of Irish flora and fauna has decreased, and some populations have become fragmented to isolated pockets.

Agricultural factors Some farming practices are having a detrimental effect on the landscape, including overgrazing by sheep in blanket bogs and mountain scrub habitats, run-off from silage and fertiliser (which damages freshwater and estuarine systems) and the removal of native hedgerows.

Urban spread According to the 2002 census of Ireland, the population has reached 3.9 million, the highest since 1871. Although all provinces in Ireland have experienced a population growth, the counties immediately adjacent to Dublin (Wicklow, Meath and Kildare) are seeing three times the growth being experienced elsewhere. Intensive building without the necessary infrastructure (transport, water

Groups	Insects	Amphibians	Reptiles	Freshwater fish	Birds	Mammals	Vascular plants
Numbers	~16,000	3	1	27	140-168*	31 (42)**	1341

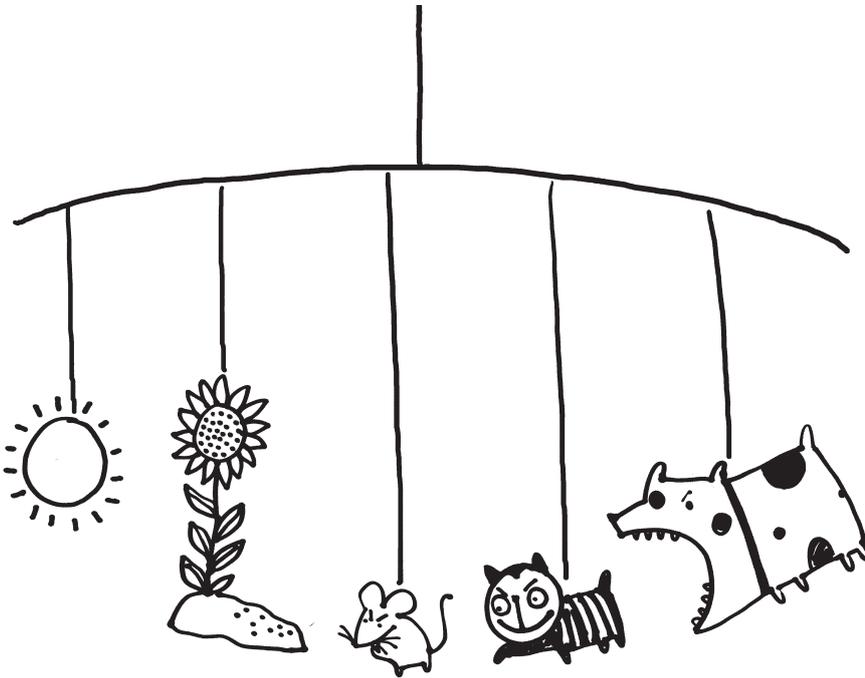
* including resident, passage migrant and summer/winter visitor species occurring regularly.

** the number in brackets includes regularly occurring marine species.

NATURE

Teachers' Notes

Continued →



and planned amenities) can have major impacts on wildlife habitats, including reduction or fragmentation of habitats and pollution problems.

Species introduction Over centuries many new species have been introduced into Ireland. Some species introduced into Ireland settle into our ecosystem without causing a hugely detrimental effect on existing wildlife. Unfortunately, others can cause the extinction of established native species. For example, the introduction of the grey squirrel in the early 1900s has resulted in a severe decline in red squirrel populations; the zebra mussel introduced in the 1990s has in a

very short amount of time had a grave effect on some native freshwater mussels; and annual battles against the spread of rhododendron in National Parks illustrate the need to closely monitor introduction of exotic species.

Tourist industry Although Ireland's tourist industry forms a corner stone of our economy it can also pose a threat to our natural heritage and biodiversity, if not carefully managed. In many cases what were regarded as remote areas in Ireland fifty years ago are now open and accessible to the tourist and day tripper. If unmanaged, the associated impacts of a high volume of

visitors (such as pollution, litter, trampling of plant growth, noise pollution and disturbance of wildlife, especially breeding animals and birds) can have significant effects on habitats.

You and me When discussing our environment it is often our daily habits and routines that cause the most harm. As a nation we are proud of our natural heritage, yet littering, dumping and polluting occur with little regard for our native flora and fauna. Protection of local wildlife can begin with better awareness and appreciation of the local natural environment. The activities and investigations in this module are designed to encourage a sense of stewardship among students towards their local area.

What can students do?

As active citizens the main thing we can encourage in students is an awareness of nature. Through exploring minibeasts and developing school gardens students can have a first-hand experience of wildlife. Many students understand the concept that a plant grows from a seed, but the actual experience of initiating and observing that process can have a longer lasting effect.

Equipped with the tools to identify and recognise the importance of our natural heritage,

NATURE

Teachers' Notes

Continued →

flora and fauna, students can develop a greater appreciation of the environment around them, be it urban or rural.

On a larger scale, schools may wish to involve pupils in local or national campaigns to protect wildlife. The links below will direct teachers to environmental NGOs and charities that can assist with environmental action.

Links for information

There are many good websites on nature, including several excellent Irish sites. The ones mentioned here are just a few:

For more on forests:

www.crann.ie

www.coillte.ie

www.treecouncil.ie

On birds:

www.birdwatchireland.ie

For information on peatlands, with specific educational resources:

www.ipcc.ie

Blackrock Education Centre has some excellent resources, including information on observing small creatures and minibeasts; www.blackrock-edu.ie

On a range of topics with child-focused materials:

www.rte.ie/radio/mooneygoeswild/

For more detailed information on Irish wildlife and legal and policy issues:

www.iwt.ie

NATURE

Teachers' Notes

Continued →

The nature pack— content overview

1 Who crawls there? Making and exploring a habitat

The class makes or identifies a habitat in the school grounds and investigates what lives there. The focus is on minibeasts (i.e. ants, spiders and other creepy-crawlies!). Observing small creatures in their natural habitats can work even in small spaces and with limited resources.

Theme Class activity (CA)

Curricular Strands

SESE, Science—Plant and animal life, Variety and characteristics of living things, Environmental awareness and care

Skills Questioning, observing, predicting, sorting, identifying

Time 35 minutes to set up and 15-20 minutes a week to study habitat over the school year

2 Feed me! What does a plant need to grow?

Students consider what resources a plant needs to survive. The investigation starts with light, then moves on to water, soil and heat. Teaching students, through experiment and observation, about the plants' requirements and hence the importance of protecting these natural resources.

Theme Class activity (CA)

Curricular Strands

SESE, Science—Plant and animal life; Investigate the factors that affect plant growth; Environmental awareness and care

Skills Questioning, observing, predicting, investigating, identifying

Time 30 minutes to set up; 2 x 15-20 minutes sessions to follow up

3 Who eats who? Make a mobile of a food chain

Students investigate and identify some of the plants and animals in a local habitat. A food chain from the habitat is represented in a mobile made by the students. Students learn about food chains, the mutual dependence of plants and animals in any habitat and the vital role of energy from the sun.

Theme Class activity (CA)

Curricular Strands

SESE, Science—Plant and animal

life, identify the interrelationships and interdependence between plants and animals in local and other habitats.

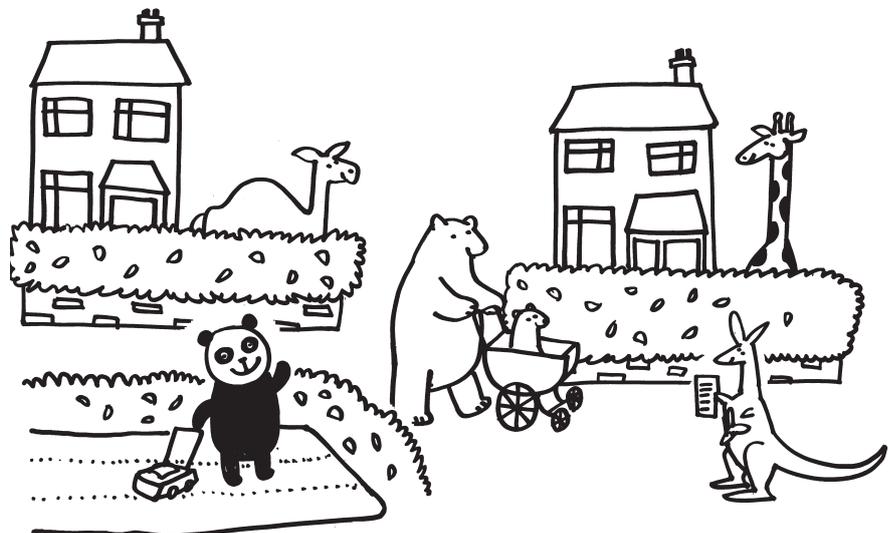
Visual Arts—Drawing, painting and colouring; Construction.

Skills Questioning, observing, predicting, sorting, identifying, drawing, colouring, designing

Time 30 minutes to research food chain; 40-50 minutes to make the mobile

4 Sort it! Plant and animal characteristics

Students sort pictures or photos of animals into groups according to their characteristics. There is a teachers' aid included to assist in the process. This takes observation and identification further into grouping and classifying of animals and plants and encourages students to think about how species are similar to each other or how they are different.



Continued →

NATURE

Teachers' Notes

Continued →

Theme Class activity (CA)

Curricular Strands

SESE, Science–Plant and animal life, Sort and group living things into sets according to observable features

Skills Questioning, observing, predicting, sorting, identifying

Time 30 minutes

5 Watch the Birdie! Observing and describing birds

Pupils observe birds in their school grounds and note how different birds have different beaks that suit the type of food they eat.

Theme Class activity (CA)

Curricular Strands

SESE, Science–Plant and animal life, Sort and group living things into sets according to observable features

Skills Questioning, observing, predicting, sorting, identifying

Time 30 minutes

6 Animal Action! Animals and their habitats

Looking at animals from around the world and asking why they live where they do. Drawing attention to how animals have adapted to their habitats and to the importance of habitats for wildlife and biodiversity.

Theme Class activity (CA)

Curriculum Strands

SESE, Science–Plant and animal life, Variety and characteristics of living things, Developing and increasing awareness of plants and animals from wider environments

Skills Questioning, observing, predicting, sorting, identifying

Time 40 minutes

7 Well rooted The place of trees in Ireland

Trees used to cover much more of Ireland than they do today. Which particular trees were found in our area? Can we use our powers of detection to find out? This activity inspires thought about our own place in relationship to the natural environment, focusing attention on our local area.

Theme Class activity (CA)

Curriculum Strands

SESE, Science–Living things
SESE, Geography–Maps
History–working from evidence;
Gaeilge–Foclóir

Skills Questioning, observing, predicting, sorting, identifying

Time 40 minutes