

# Module Six

# Teachers' notes



Tree Council  
of Ireland

## Module Six

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# Teachers' Notes

## Introduction

The revision of the Primary School curriculum in 1999 led to the introduction of a curriculum, which is to form a holistic learning experience for the child. Teachers are encouraged to identify possibilities for integrated learning. With this aim in mind, this manual on trees presents material that can form part of the following curriculum areas - Science, English, Geography and History. This manual uses the study of trees to teach children to understand the natural environment in which they live and to appreciate their local heritage.

## Aims

Students who engage in this project on Trees will develop:

- an interest in trees
- a curiosity about trees and woodlands through exploration and study
- a knowledge and understanding of living things and the environment in which they live
- an understanding of the interdependence of a wide variety of living things
- a scientific approach to learning
- a means of applying and using scientific knowledge and skills
- skills which help them to communicate and record observations
- a desire to become involved in discussion on environmental issues
- an urge to explore some of the environmental repercussions which human actions may have on the natural environment.
- Some appreciation of trees as inspiration for poetry
- An awareness of the impact of trees in the landscape and their importance in place names

## Presentation

The materials are presented on a CD Rom with a Worksheet format designed for the children themselves to use. The project contains five modules, with materials suitable for:

- 1 Junior and Senior Infants
- 2 First and Second classes
- 3 Third and Fourth classes
- 4 Fifth and Sixth classes
- 5 Additional Information on Trees

Each module is presented as a complete entity. A class may undertake a study of trees in the module designed for that class or at another suitable level. It is recommended that studies are undertaken in the order presented. Topics are not repeated. They are advanced and expanded, as participating students move on to the materials designed for more senior classes.

# Modules - Worksheet Topics

## Module 1 Junior and Senior Infants

Parts of a Tree - Worksheets 1-4  
Fruits and Seeds - Worksheets 5-10  
Trees as Homes - Worksheets 11-13  
Poems - Worksheet 14  
Stories from the past - Worksheets 15 - 17  
Practical Activities - Worksheet 18

## Module 2 First and Second Classes

Parts of a Tree - Worksheets 1-3  
Fruits and Seeds - Worksheets 4-7  
Food Chains - Worksheets 8-9  
Practical Activities 10 -13

## Module 3 Third and Fourth Classes

Information on tree structure - Worksheets 1-2  
Practical Work - Worksheets 3-4  
Types of trees - Worksheets 5-6  
Seeds - Worksheet 7  
Field Trip - Worksheet 8-9  
More Practical Activities - Worksheets 10-12  
Trees and Wildlife - Worksheets 13-16  
Food Chains - Worksheet 17  
How People use Trees - Worksheets 18-20  
Word Search and Crossword - Worksheet 21 -22  
A Tree Survey of the School grounds - Worksheet 23

# Modules - Worksheet Topics

## Module 4 Fifth and Sixth Classes

Woodland - Worksheet 1-9  
Pollination - Worksheet 10-12  
Practical Science Experiments - Worksheets 13-15  
Competition and Adaptation in a Woodland - Worksheet 16  
Nutrient Recycling - Worksheet 17-19  
Tree and Woodland Conservation - Worksheet 20 -22  
Trees In a Global Context - Worksheet 23-24  
Food from Plants - Worksheet 25  
Tree Planting - Worksheet 26  
Woodland Field Trip - Worksheet 27-30  
Make a Nature Trail - Worksheet 31  
A Sense of Place -Worksheets 33-38  
Trees and Place names - Worksheets 39-44

## Module 5 More about Trees - Additional lessons and Worksheets for Senior classes

Why trees are planted - Worksheet 2  
Leaves - Worksheet 3  
Trees Quotations - Worksheet 4  
Trees in Folk tradition - Worksheet 5  
Place names associated with trees - Worksheet 6  
Surnames derived from trees - Worksheet 7  
Trees and Poetry - Worksheets 8-12  
Trees as Sites for other plants - Worksheets 13-14  
Irish Forestry - Worksheet 15  
Trees as pictures of the past - Worksheet 16  
The Tree Alphabet - Worksheet 17  
More Practical Science Experiments - Worksheets 19 -36  
Trees for Bees - Worksheets 37-38  
Trees and our Written Heritage - Worksheets 39-42  
The Importance of Trees in Ancient Ireland - Worksheets 42-46

# Module 1 Junior and Senior Infants

## Worksheets 1-4 Parts of a tree

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Recording

### Concept

Trees have different parts, both above and below ground all of which have their own names.

### Background information

This series of worksheets introduces trees to the children. Attention is focused on the parts of the tree and the child has to look at the part and select the correct name from the word bank. These worksheets link word recognition on the one hand and actual knowledge of the name of each part on the other.

### Resources

Worksheets 1, 2, 3 and 4

### Methodologies

Lesson could begin with looking out the window at a tree in the school grounds or in the distance.....*Introduction.*

Discussion could focus on the colour of the tree, what gives it this colour, where the leaves are on the tree, what holds it up, how it stand straight in the ground.....*Observing.*

Children should be encouraged to read the selection of words in the word bank and carefully write in the correct one in each box .....*Recording.*

### Extension Materials

Children should be encouraged to colour-in the drawings.

Children could be brought outdoor to examine a tree in the school grounds. Failing this the teacher could bring in twigs with buds, leaves and seeds so that the children can see some of the parts at first hand.

Children could press the leaves for use in their artwork.

### Safety

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together. Ensure that they realize this is a lesson – not playtime.

### Linkage

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.

### Maths

Counting; Writing numbers.

# Module 1 Junior and Senior Infants

## Worksheets 5-10 Fruits and Seeds

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Recording, Investigating and Experimenting

### **Concept**

There are different types of fruits and seeds – in this case an apple, a chestnut and an acorn.

### **Background information**

This series of worksheets introduces two nuts and a fruit to the children. The nuts are the seeds of the oak tree and the horse chestnut. By planting these, new trees will grow. The seeds of the apple tree are inside the apple and it must be cut open so that they can be seen. They are white when unripe and brown when ripe. Similarly with the chestnut. They are ripe when they are all brown. All these three things are food for mammals, birds and insects.

### **Resources**

Worksheets 5, 6, 7, 8, 9 and 10

### **Methodologies**

Teacher should bring an example of each of these into the classroom so that the pupils can see them at first hand.....*Introduction.*

The shape, colour and texture of the objects should be discussed.....*Observation.*

Where are the apple seeds? What eats seeds and fruits .....*Questioning.*

Children should be encouraged to read the selection of words given and carefully write in the correct one in each space.....*Recording.*

Point out that the leaves on Worksheet 5 and 6 grow on an apple tree and those on Worksheet 9 are from the oak tree.....*Observation.*

Children plant the seeds and look forward to their germination and growth.....*Investigating and Experimenting.*

### **Extension Materials**

Children should be encouraged to colour-in the drawings. Check books and posters for the correct colours for the jay and squirrel (only grey squirrels eat acorns – never red)

Children could be encouraged to collect chestnuts. They should be encouraged to bring an apple to school for lunch and count the number of seeds in it, before eating it.

### **Safety**

The teacher should cut the apples in half.

### **Linkage**

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.



# Growing Seeds

Growing seeds found during the practical work on fruit.

## You will need...

Apple seeds, conkers or acorns

Potting or garden compost (preferably peat-free to save our bogs!)

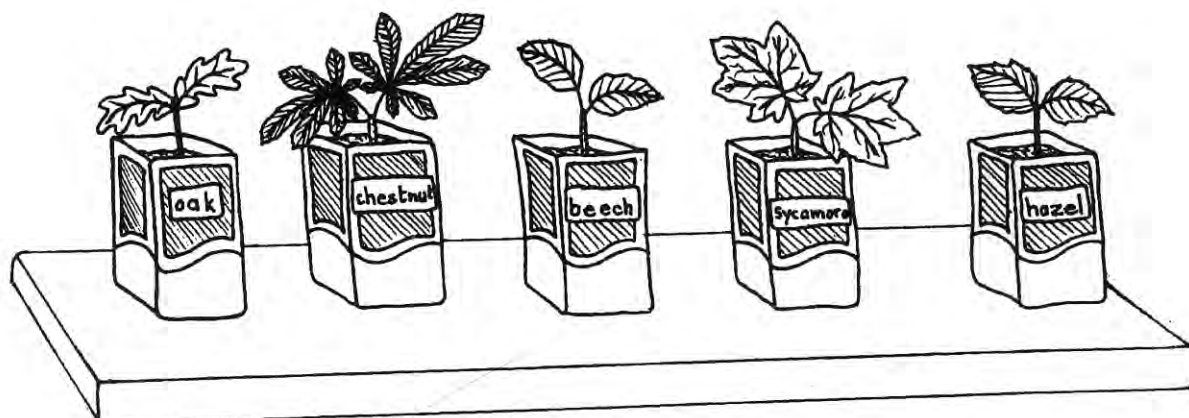
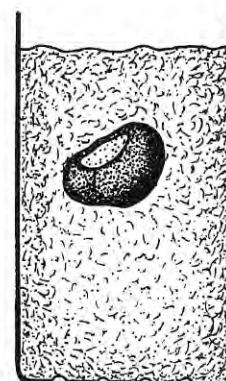
Horticultural sand

15 cm wide flower pots (1-litre milk cartons are also suitable since they are biodegradable.)

Labels

## Method

- ☞ If using milk cartons, wash them and pierce holes in the bottoms.
- ☞ Put 3 cm of sand in the bottom of the growing container.
- ☞ Fill it to the top with potting or garden compost. Mix well.
- ☞ One seed is inserted in each container to its own depth.
- ☞ The pots are then labelled (One for each child is ideal.) and placed on a north-facing window sill or outside in a frost-free place. If left outside, cover with clear plastic to deter mice.
- ☞ The compost is kept moist all winter and up to the following March.
- ☞ Then the cartons may be taken into the classroom so that the pupils can see the trees growing.



# Module 1 Junior and Senior Infants

## Worksheets 11-13 Trees as Homes

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

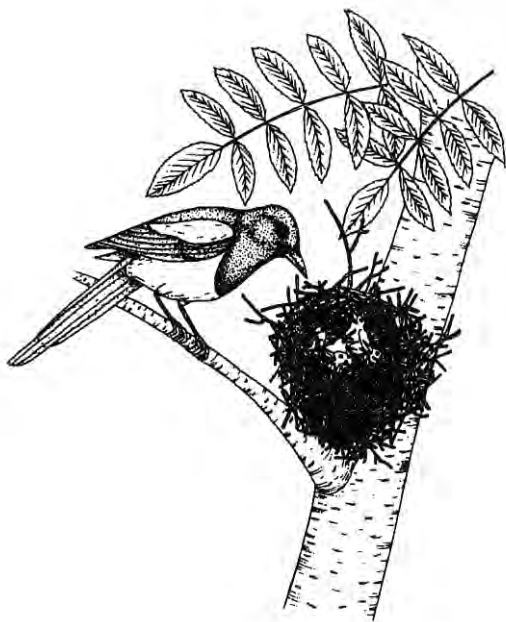
Observing, Predicting, Recording

### Concept

The idea of interdependence is introduced in this series of worksheets. Birds can nest and find food in trees.

### Background information

Birds build nests in trees, lay eggs and raise young there, (when the baby birds have left the nest on their first flight they never go back there again – so it is not a family home once the babies can fly). Trees in the vicinity of the school in suburban areas will no doubt have a magpie's nest in one of them. Blackbirds are extremely common species too (although in fairness, their nest is more camouflaged in reality than in the worksheet!) The magpie is on an ash tree – note leaves, and the blackbird is on an oak tree.



The caterpillar and the earwig on Worksheet 13 can easily be found on leafy trees in June and September. (Earwigs are eaters of dead vegetation and never go into people's ears)

### Resources

Worksheets 11,12 and 13

### Methodologies

Teacher should start a class discussion about who lives in trees and where they might live. Pupils may suggest birds, squirrels even insects .....*Introduction.*

The idea of insects being there should be suggested otherwise and the fact discussed that these insects eat the leaves and the dead leaves as their own food and in turn are food for the birds.....*Predicting.*

Children should be encouraged to read the selection of words given and carefully write in the correct one in each space.....*Recording.*

Can they correctly identify each tree from the leaves they have already coloured in Worksheet 4 and Worksheet 9.....*Observing.*

### **Extension Materials**

Children should be encouraged to use the correct colours for the birds from class posters or books. Both male and female blackbirds sit on eggs. Pupils should be encouraged to look out for these birds in the school grounds and at home. A small quiet walk around the school grounds could be carried out just to look for birds. Children who start going on field trips at an early age are much more aware of their environment than those who rarely engage in this kind of activity.

### **Safety**

Pupils should not interfere with birds' nests or visit them too often. It will give away the hiding place and predators could come and eat the eggs or nestlings. There is no truth in the belief that a bird will renege if someone breathes on its eggs or touches them – it is the disturbance to the carefully hidden nest that leaves it exposed to enemies.

### **Linkage**

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.

## **Module 1 Junior and Senior Infants**

### **Worksheets 14-18 Poems and Stories from the past**

### **Strand**

Developing cognitive abilities through language (English)

### **Strand Unit**

Oral Language; Reading; writing clarifying thought through writing.

### **Concept**

Trees are subject matter for poetry. Stories from long ago show how trees were important in people's lives

### **Background information**

The willow tree and the oak tree feature in the poems and stories.

### **Resources**

Worksheets 14,16,17 and 18

### **Methodologies**

Teacher reads poems and stories to pupils and explains the meanings. Children may learn the poems by heart.

### **Extension Materials**

Children should be encouraged to make drawings to illustrate the stories as per Worksheet 18

### **Linkage**

Science : Living things; Plants and Animals

# Module 2 First and Second Classes

## Worksheets 1-3 Parts of a tree

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Questioning, Recording

### **Concept**

Trees have different parts, both above and below ground all of which have their own names and have specific functions

### **Background information**

This series of worksheets is a revision of what they will have done in infants. It introduces trees to the children. Attention is focused on the parts of the tree and the child has to look at the part and select the correct name from the word bank. These worksheets link word recognition on the one hand and actual knowledge of the name of each part on the other. They are also introduced to the idea that each part of the tree has a job to do.

### **Resources**

Worksheets 1, 2, and 3

### **Methodologies**

Lesson could begin with looking out the window at a tree in the school grounds or in the distance.....*Introduction.*

Discussion could focus on the colour of the tree, what gives it this colour, where the leaves are on the tree, what holds it up, how it stand straight in the ground.....*Observing.*

Children should be encouraged to read the selection of words in the word bank and carefully write in the correct one in the spaces provided.....*Recording.*

In worksheet 3 the word in bold is to be written on the line.....*Recording.*

### **Extension Materials**

Children should be encouraged to colour-in the drawings.

Children could be brought outdoor to examine a tree in the school grounds. All parts mentioned in the three worksheets should be seen and felt as far as possible. Failing this the teacher could bring in twigs with buds and leaves and bark and fruit as well so that the children can see some of the parts at first hand.

Children could press the leaves for use in their artwork.

### **Safety**

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together. Ensure that they realise this is a lesson – not playtime.

### **Linkage**

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.

# Module 2 First and Second Classes

## Worksheets 4-7 Fruits and Seeds

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Predicting Recording. Investigating and experimenting. Recognising patterns

### **Concept**

Seeds are found inside fruits. New trees grow from them. They are food for animals who accidentally sow them as they gather them for food.

### **Background information**

This series of worksheets continues what they will have done in infants. The apple and the chestnut are revised and the holly and haw are introduced. Seeds are inside fruits so the apple is a fruit as is technically, the holly and haw berries. The prickly chestnut case is the fruit inside which is the conker or seed. We meet the hedgehog, mouse and blackbird again and the thrush who loves holly berries and haws is introduced. The concept of animals and birds planting seeds is introduced. Here just nuts forgotten by the jay, squirrel and mice are mentioned.(Berry dispersal is covered in a higher class). Children are encouraged to plant seeds and are given instructions to follow themselves.

### **Resources**

Worksheets 1, 2, and 3. Teacher should bring in apple,holly, haw and conker in its prickly case.

### **Methodologies**

Lesson could begin with looking at the material provided by the teacher and finding the seed in each case.....*Introduction.*

Discussion could focus on who might eat these seeds.....*Observing.*

What would happen to seeds that were collected but not eaten.....*Predicting.*

Children should be encouraged to read and colour worksheets 4 and 5 and put the correct words in place.....*Recording.*

They should be able to follow the instructions themselves for planting seeds in Worksheet 6 .....*Investigating and experimenting.*

Let them read worksheet 7 after the lesson and name correctly the animals, birds and trees there. They should write the correct name beside each .....*Recognising patterns.*

### **Extension Materials**

Children should be encouraged to colour-in the drawings.

Children could be brought outdoor to examine a tree in the school grounds. Autumn would be a particularly appropriate time for this. Are any of these trees growing in the school grounds? Why not plant some?

### **Safety**

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together. Supervise the planting of the seeds.

### **Linkage**

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.

# Module 2 First and Second Classes

## Worksheets 8-9 Food Chains

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Predicting, Recording

### Concept

The idea of foodchains is introduced here.

### Background information

They will have encountered the idea of interdependence in their tree work in infants. Here the concept is brought further with the introduction of foodchains. They are just one link chains really – the animal eats the seed or berry which is a particular part of the tree in each case

### Resources

Worksheets 8-9

### Methodologies

Teacher should start a class discussion about how these items could be food for animals and birds.....*Introduction.*

Do birds have teeth? So they must swallow their food whole. Which of the items are small enough to be swallowed.....*Predicting.*

Bigger things must be eaten with teeth. Who is involved here.....*Predicting.*

Colour and fill in the two worksheets .....*Recording.*

### Extension Materials

Children should be encouraged to use the correct colours for the birds and mammals from class posters or books. Pupils should be encouraged to look out for these birds in the school grounds and at home.

### Safety

No apparent dangers here!

### Linkage

English: Competence and confidence in using language; Reading developing skills and strategies. Writing developing competence, confidence and the ability to write independently.

# Module 2 First and Second Classes

## Worksheets 10-13 Practical Activities

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Predicting Recording. Investigating and experimenting Recognising patterns, Design and making, Planning, Making

### **Concept**

Plants need certain requirements for growth and will die if they don't get them.

### **Background information**

This series of worksheets contains practical work for the children to do. Plants need light, water and air to grow. On worksheet 10 we set up a situation to test this. Only the plant on the window sill survives.

The field trip is to just one tree of decent size where the children can learn to get to know it. The tree sculpture is part of the art activity of the class.

### **Resources**

Worksheets 10, 11, 12 and 13. Teacher needs 3 plants in pots, a CLEAR plastic bag and a box that fits over a plant completely excluding light.

### **Methodologies**

Lesson could begin with discussing what plants need to grow.....*Introduction.*

Discussion could focus on what might happen if the plant was deprived of these things .....*Predicting.*

The demonstration could be set in place by the teacher with pupil assistance.....*Experimenting.*

Field trip to examine tree in school grounds .....*Investigating.*

Worksheets to be filled in indoors afterwards .....*Recording.*

Nice leaves to be collected for tree sculpture .....*Recognising patterns.*

### **Extension Materials**

#### **AN INDOOR TREE**

Grow your own tree for indoor observation of the seasonal changes in trees. A horse chestnut or an oak is particularly suitable for this purpose.

#### **USING YOUR SENSES**

Take your class for short walks in a wooded area. The aim of these walks should be to encourage the children to use their senses. One trip might focus on listening for and hearing different sounds, another could focus on smells, a third could explore touching and texture, and finally looking and seeing.

#### **MATERIAL FOR TREE SCULPTURE**

- Place the leaves between two pieces of newspaper and put a weight on them. Change the newspaper every couple of days as it gets damp. This will dry out the leaves.
- When the leaves are dry, you can print with them. To do this, brush paint onto the underside of the leaf.- Press the leaf onto a sheet of paper. Each child should cut out his/her leaf.

You could make a large tree by pasting the leaves onto a large outline of a tree canopy.

The trunk could be made from bark rubbings made by the children.

### **Safety**

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together.

### **Linkage**

Art

# Module 3 Third and Fourth Classes

## Worksheets 1, 5, 6, 8 and 9 What is a tree - Tree types

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording, Exploring

### Concept

Trees, both deciduous and evergreen are a particular types of plants.

### Background information

These three worksheets look at the tree as a plant structure. It is a perennial plant, which means it grows every year – the new growth adding on to the old growth and making the whole structure bigger year on year. You can see the stop start growth carried out by the tree each year when you look at the rings in the stem. The tree tissue is hard woody tissue, which can support this tall structure. Such hard woody tissue is not found in the familiar flowering plants. Deciduous trees have large flat leaves. These would freeze in winter and the tree would die with frozen leaves. So these trees shed their leaves when autumn comes stop growing as a result and hibernate as it were safely until Spring comes. Evergreen trees have thin needle shaped leaves which don't freeze and so there is no need for these trees to shed their leaves when the cold weather comes.

### Resources

Worksheets 1, 5 and 6

### Methodologies

This lesson is best carried out in Autumn. Lesson could begin with looking out the window at a tree in the school grounds or in the distance.....*Introduction.*

Discussion could focus on its leaves. What sort are they, what colour are they.....*Observing.*

Children should be encouraged to visit the school grounds and check which trees are evergreen and which are deciduous. Even if they don't know their names they should be able to sort them into the two groups. Remind them that evergreen is not a tree's name – just the description of the type of tree it is.....*Classification.*

In worksheet 6 information on the chosen tree in your school ground can be recorded...*Recording.*

### Extension Materials

Field trip Worksheet 8 and 9

Children should be encouraged to look further afield for examples of deciduous and evergreen trees. Sketches can be made outdoors of the tree shapes and a collection of each group could be brought in and set up on the nature table. It is not always the case that broad leafed trees are deciduous (note holly, laurel, rhododendron, arbutus and evergreen oak are evergreen). Similarly larch is a deciduous conifer.

### Safety

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together. Ensure that they realise this is a lesson – not playtime.

### Linkage

Environmental awareness and care. Pupils are encouraged to explore their own environment independently of the teacher and find and distinguish between deciduous and evergreen trees.



# Module 3 Third and Fourth Classes

## Worksheets 2-4 How a tree lives

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Questioning, Recording, Experimenting

### **Concept**

Trees have specific requirements in order to be able to grow.

### **Background information**

A tree uses its leaves to make its food. What the leaves do is extract carbon from the CO<sub>2</sub> in the air and store it as tissue in its cell walls. The leaves can only do this in the light as they use sunlight as energy to do this. Water gets into a tree and indeed into any plant only through its roots. This water moves up the tree from the roots up through the stem into the leaves. Worksheets 3 and 4 detail experiments that you can do with the pupils in class to demonstrate these facts.

### **Resources**

Worksheets 2, 3 and 4. You will also need healthy plants to experiment on – say 4 potato plants or 4 busy lizzies in pots. You will also need a black plastic bag.

### **Methodologies**

Lesson could begin with discussing how a tree grows. It starts as an acorn seed weighing perhaps ten grams and grows into an oak tree weighing several tones. Where does all this material come from?.....*Introduction.*

Children will suggest the soil (if true there would be hole around the base of the tree where the soil became tree) they will suggest the sun but if a bit of the sun went into each tree then the sun would

be diminished. They will suggest rain but while a tree needs water it is not made entirely from water. So it must be the air - the CO<sub>2</sub> in the air to be precise.....*Observing.*

Carrying out the experiments as outlined in Module 3 will show that light and water are necessary for this growth, called photosynthesis- to take place.....*Experimentation.*

In worksheet 3 and 4 the results can be written in. ....*Recording.*

### **Extension Materials**

Children should be encouraged to work out how exactly you could show that a tree takes in water through its roots and nowhere else or that it needs air to grow.

### **Safety**

Be careful with plastic bags and with the knife when you are cutting the plants.

### **Linkage:**

English: Competence and confidence in reading worksheet and following instructions.

# Module 3 Third and Fourth Classes

## Worksheets 7, 10, 11, 12 - Growing from seeds

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Questioning, Classifying, Recording

### **Concept**

Seeds must get away from the parent tree so that there is space and light for them to germinate.

### **Background information**

In order for germination to take place tree seeds must get far away from the parent tree. Essentially there are two strategies – wind dispersal and dispersal by animals. Seeds with wings are blown by the wind. Such seeds include sycamore, ash, lime and all the seeds in the cones of conifer trees, which have one wing attached to each seed in the cone. Animals can disperse seeds in two ways. Birds can eat berries and the hard stone survives the journey through their body and is voided. A new tree grows from the drooping. Examples of these are elderberries, haws, holly, blackberries, sloes etc. On the other hand nuts such as hazelnuts do not survive the journey through a squirrel and new hazel or oak trees come from nuts that are dropped, buried or forgotten by animals such as mice, squirrels, rooks and jays.

### **Resources**

Worksheet 7. A section of autumn seeds and nuts.

### **Methodologies**

Lesson could begin with discussing how trees grow, what the seeds need in order to grow and whether they could achieve these needs if they dropped on the ground straight under the tree.....*Introduction.*

Discussion could focus on the seeds, nuts and berries on the nature table and work out how each would get away from the parent tree. They could be sorted into groups depending on how they are dispersed.....*Observing and Classifying.*

Children should be encouraged to bring in seeds themselves and categorize them into the correct group.....*Recording.*

### **Extension Materials**

Children should be encouraged to plant some of the seeds they have collected. Follow the instructions given in Worksheets 10,11 and 12

### **Safety**

Be careful that children do not eat poisonous seeds or berries

### **Linkage**

Environmental Awareness and care. How can trees become established if there are no birds or mammals to carry out seed dispersal? Animals are necessary in the lives of trees.

# Module 3 Third and Fourth Classes

## Worksheets 13, 14, 15, 16 and 17 Trees as habitats

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording

### Concept

Trees are homes for animal life.

### Background information

Birds, mammals and creepy crawlies use trees for three reasons, food, homes and places to sleep. Animals that eat parts of the tree – i.e. the leaves or the bark are herbivores. Other animals visit the trees to eat these herbivores – these are the carnivores. Examples of these are given in the worksheets. Different parts of the tree can act as homes – the branches, cracks in the bark, holes in the trunk. Birds often flock to trees to spend the night there, particularly in winter. A food chain lists the different component parts – Oak leaf – caterpillar – robin or acorn – mouse owl or blackberry, Blackbird, Sparrowhawk. Children can be encouraged to devise their own food chains starting with a part of a tree.

### Resources

Worksheet 13-17

### Methodologies

Lesson could begin with discussing how animals use trees. What do they do all day, where do animals spend their time?.....*Introduction.*

Discussion could focus on what animals eat and what parts of the tree are used as food. Who eats this food? Are they in turn, food for other creatures. Birds, Mammals and creepy crawlies all have both herbivores and carnivores in their ranks. Make sure you name from each group .....*Observing and Classifying.*

Children should be encouraged to fill in the food chain worksheet themselves.....*Recording.*

### Extension Materials

Children should be encouraged to look for some of these animals around the trees in the school grounds.

### Safety

Be careful that children do not eat poisonous seeds or berries

### Linkage

Environmental Awareness and care. By having trees in an area a huge variety of wild life can exist. When trees are removed the animals are made extinct too. Trees are necessary for biodiversity.

# Module 3 Third and Fourth Classes

## Worksheets 18, 19, 20, Uses of trees by man

### Strand

Living Things (Science)

### Strand Units

Plants and Animals, Materials

### Skills

Observing, Questioning, Classifying, Recording

### Concept

Trees are of practical use to us in our everyday lives.

### Background information

This lesson discusses the practical uses of trees. Timber itself is discussed and pupils are asked to observe things that are made from timber. Because timber comes from a living thing it does not last forever so replacements such as plastic have been made for them. Make sure the pupils can tell the difference between a real timber desk and one made from formica. Trees are also a raw material for other products such as paper, rubber, turpentine, maple syrup. Get them to suggest these things first before giving out the work sheets. They may suggest other products made from trees.

### Resources

Worksheet 18, 19 20

### Methodologies

Lesson could begin with discussing how trees are useful to us in our lives. tree.....*Introduction.*

Discussion could focus on timber and items made from timber in the classroom How would you know something is fake timber? .....*Observing and Classifying.*

Consider the properties of these products, bounciness, strength, propensity to rot or loose strength when wet. You could experiment with examples to test them i.e. wet and dry paper, a rubber versus a plastic ball. Children could devise tests themselves.....*Recording.*

### Extension Materials

Worksheet 21 and 22

Children can be given these as an enjoyable way to test their knowledge at the end of a series of lessons on trees

### Linkage

Science and the Environment. This lesson allows children to see how science and technology have contributed positively to society.

NB The answer to the wordsearch (worksheet 21) are:

### Across

ROBIN, FOX, SEAL, BADGER, PIG, BLUETIT

### Down

BAT, STOAT, KESTREL, HEDGEHOG

### Diagonal

SPIDER

### Trick

SNAIL is not a carnivore.

### The answer to the crossword is

**Across:** 1. Slug, 2. Cones, 5. Chestnut, 7. Leaf, 9. Robin, 11. Hawk

**Down:** 1. Sycamore, 2. Conife, 3. Nuts, 4. Sloe, 6. Seeds, 8. Ants, 10. Oak

# Module 3 Third and Fourth Classes

## Worksheet 23 - Tree Survey

### **Strand**

Living Things (Science)

### **Strand Units**

Plants and Animals, Caring for the Environment

### **Skills**

Observing, Questioning, Classifying, Recording

### **Concept**

Find and map the trees in the school grounds

### **Background information**

The aim of this lesson is to increase the pupils' awareness of their surroundings. By going out to find and map the trees in the ground it makes them aware of the planted trees, the trees in the hedges and indeed whether or not there are in fact enough (or any) trees in their school environment.

### **Resources**

Worksheet 23 Map of the school grounds on which to map the trees

### **Methodologies**

Lesson could begin with discussing if there are trees in the school grounds, where they might be and whether it is good or not to have them here .....*Introduction.*

Discussion could focus on how these trees could be recorded – a list, labels on the trees, a map with them all marked in? .....*Observing and Classifying.*

Maps have the most information and could be given to others showing where the school trees are Using the base map provided at this stage by the teacher (or indeed drawn by the pupils during a geography class) the class finds and marks in the trees in the school grounds. If the trees are labeled with numbers, these numbers can go on the map. The identity of the trees can always be established later – it is not necessary to know what the trees' names are to map them. ....*Recording.*

### **Extension Materials**

Pupils can use books, keys or even the internet to identify trees they do not know.

### **Linkage**

Geography – Maps and geographical skills. – The local natural environment.

# Module 4 Fifth and Sixth Classes

## Worksheet 1-9, 16 - Introduction to a woodland

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Questioning, Classifying, Recording, Exploring

### **Concept**

A woodland is a native habitat for plants and animals.

### **Background information**

It is vital that the teaching for a field trip begins in the classroom, so that the pupils will know what to expect and will have specific tasks to do when out in the field.

These worksheets are designed to make a fieldtrip to a woodland more interesting for both teacher and pupils. There are four layers in woodland where life occurs, canopy, shrub layer, ground and leaf litter. There are plants and animals to examine in each layer. Animals can be herbivores, carnivores or omnivores. Following the field trip, food chains based on the woodland habitat, can be constructed by the pupils. In reality food chains rarely exist by themselves in nature – a more complicated wood web occurs. An example of this is given in worksheet 8

### **Resources**

Worksheets 1-8. A lovely woodland to visit on a field trip. Equipment such as jars, umbrellas for catching creepy crawlies off shaken trees, pooters, magnifying glasses.

### **Methodologies**

This lesson is best carried out in Autumn or in May/June. Lesson could begin with discussion in class about woodlands. Do the pupils know of any – have they been there, are they deciduous or coniferous?.....*Introduction.*

Discussion could focus the woodlands that are best for wildlife – deciduous woods (why are they best). Where in the woods would the animals be – tease out the concept of layers in the woodland. What might live in each layer, what would they feed on?.....*Observing.*

How would they find animals in the wood. What equipment would be good to bring on a field trip .....*Planning.*

Go on the fieldtrip to the chosen woodland and look in turn at the four layers. Concentrate on seeing plants first and then catch animals later. The children will only look for animals if you don't do the plants first.

Do not make the pupils record and write on a fieldtrip. A general debriefing session in class afterwards with the teacher noting what happened on the board and all the class contributing is a much better learning and revision exercise.....*Recording.*

Worksheet 16 draws attention to the competition between species in a woodland. It is relevant to do this worksheet in class on return from the fieldtrip.

### **Extension**

Materials Identifying and keying out the plants and animals that they have found in the woods. Use of books, posters etc recommended here.

### **Safety**

Be careful taking children outdoors that they are suitably clad and shod and that they all stay together. Ensure that they realise this is a lesson – not playtime.

### **Linkage**

Environmental awareness and care. Pupils are encouraged to explore their own environment independently of the teacher and find other woodland areas

# Module 4 Fifth and Sixth Classes

## Worksheet 10, 11, 12 - Pollination

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording, Exploring

### Concept

Flowers are the reproductive part of the tree where pollination takes place.

### Background information

In order for seeds to form the pollen which is the male part of the plant must reach the female part. This cannot happen in the same flower so the tree needs some means of moving the pollen. It relies on two basic methods. It can blow in the wind or insects can transfer it. The flowers trees have reflect which means they use. Flowers with petals and nice smells contain nectar which is a bribe to the insects. Insects such as butterflies, wasps, flies, moths and bees come to get a drink of nectar and get covered in pollen. As they move from flower to flower in search of more nectar they inadvertently move the pollen from flower to flower and fertilise the female parts. Trees such as horse chestnut, hawthorn, apple mountain ash and cherry have flowers like this. Catkins are flowers with no petals or nectar. The wind blows the pollen from these flowers and it lands on others of the same species and fertilizes them. Trees such as willow, poplar, hazel and oak have catkins.

### Resources

Worksheets 10, 11 and 12

### Methodologies

- This lesson is best carried out in Spring.

Lesson could begin with discussing spring flowers. Pupils will be familiar with daffodils and snowdrops but do trees have flowers?.....*Introduction.*

Discussion could focus on the parts of the flower – what are they for.....*Observing.*

Children should be encouraged to examine the trees in the school grounds and check in books to see what flowers they might expect on their local familiar trees.....*Classification.*

Worksheet 12 gives the practical work that can be done with catkins and other tree flowers that the children have collected.....*Recording.*

### Extension Materials

Local History - Trees with catkins produce masses of pollen and much of this just lands on the ground. If it lands on a bog it will be preserved for ever. By digging down in the bog and identifying the pollen there (pollen analysis) scientists have been able to say what the vegetation of Ireland was like thousands of years ago.

### Safety

Be aware that some children are allergic to pollen

### Linkage

History – Local Studies.

# Module 4 Fifth and Sixth Classes

## Worksheet 13, 14, 15 - How a tree works

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording, Experimenting

### Concept

Trees need light, heat water and air in order to grow.

### Background information

This lesson is revision of a similar lesson given to third and fourth class. A tree uses its leaves to make its food. What the leaves do is extract carbon from the CO<sub>2</sub> in the air and store it as tissue in its cell walls. The leaves can only do this in the light as they use sunlight as energy to do this. Water gets into a tree and indeed into any plant only through its roots. This water moves up the tree from the roots up through the stem into the leaves. Heat is important as well as this process works much better under warm conditions.

### Resources

Worksheets 13, 14, 15. 5 healthy potato plants. A black plastic bag. A large clear jar with a screw lid.

### Methodologies

Lesson begins with worksheet 13 which sets out what is involved here. Pupils are going to test the hypotheses that plants need water, light. Air and heat to grow. distance.....*Introduction.*

Worksheet 13 details what is to be done with each of the 5 potato plants. Children should discuss what each experiment hopes to find out.....*Questioning, Experimenting.*

Worksheets 14 and 15 allow the pupils to write up the results of their experiments.....*Recording.*

The results should be discussed and understood in class afterwards.

### Extension Materials

How are these plant requirements reflected in the wild. Rainforests are hot and wet and have loads of plants. Coniferous forest never lose their leaves so it is too dark in those woods for any plants to grow beneath the trees. Deciduous forests have very early Spring flowers when there is light before the leaves come – i.e. lots of bluebells in April.

### Safety

Be careful with plastic bags

### Linkage

Geography – Natural Environments



# Module 4 Fifth and Sixth Classes

## Worksheet 17-19 - Recycling

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording, Experimenting

### Concept

Leaves and indeed whole trees rot back into the soil with the help of micro-organisms

### Background information

Leaves in autumn fall to the ground and decompose. This decomposition depends on living organisms, Fungi and bacteria use the dead leaves as food and grow at the expense of the leaves. This living process is called decomposition. The fungi fruit in the autumn sending up toadstools which carry the reproductive spores under the caps. Some animals are able to feed on dead leaves too – woodlice, millipedes and earthworms. Autumn is a good time for seeing all these things

### Resources

Worksheets 17, 18 and 19 Gathered (or indeed purchased) mushrooms.

### Methodologies

Autumn is a good time for this lesson.

Lesson begins with a discussion about what happens to all the dead leaves. Where are last years. What does rotting mean?.....*Introduction.*

The idea that living organisms are responsible for the decay of leaves is introduced. Pupils are asked if they know where there are any large fruiting fungi on trees. Animals are involved in the process too – part of the food chain really.....*Questioning.*

Children should collect mushrooms and make spore prints as per Worksheet 19. Making leaf mould is possible too in schools with trees.....  
.....*Experimenting.*

### Extension Materials

Places where decomposition never happens should be discussed – freezers and the top of Mount Everest – too cold for micro-organisms to grow, bogs – too acid. A visit to the Museum to see the bog bodies would be great or failing that find out about it on the internet on the classroom computer.

### Safety

Be careful with mushrooms, never ever taste any and wash hands afterwards.

### Linkage

Geography - Irish Bogs, Mountain Tops

# Module 4 Fifth and Sixth Classes

## Worksheet 20-26 - Conservation

### **Strand**

Living Things (Science)

### **Strand Unit**

Plants and Animals

### **Skills**

Observing, Questioning, Predicting, Interpreting, Evaluation

### **Concept**

It is important to conserve our woodland, both locally and globally

### **Background information**

Woodlands are important nationally for many reasons, habitats for wildlife, sources of raw material, amenity use, soil conservation, landscape quality. On a world wide perspective climate depends on our forests. The photosynthesis they carry out removes carbon dioxide from the air reducing global warming. Rain forests intercept rainfall and stop it hitting the ground with force washing away soil.

### **Resources**

Worksheet 20,21 22, 23 24 25 and 26. Globe

### **Methodologies**

Lesson begins with a discussion on the importance of woodlands. Why do we need them at all? Have we many woodlands in Ireland?  
.....*Introduction.*

Worksheets 21 and 22 are an exercise in mapping our woodlands. Where are they. What are the ones in your county? Could you arrange to visit a local wood on a field trip?.....*Recording.*

What about forests on a global scale. How much of the earth is at the equator? Where are our rain forests. Why are they so vitally important  
.....*Evaluating*

Worksheet 25 is an exercise in how much of our food comes from rain forest.....*Recording.*

### **Extension Materials**

Worksheet 26

We can make the situation better if we plant trees ourselves. Worksheet 26 tells you how to go about it. Consider planting a tree for this years Junior infant Class. They can watch it grow for eight years at school and will have ownership of the tree during that time.

### **Safety**

Be careful digging holes with spades.

### **Linkage**

Geography – Climate

# Module 4 Fifth and Sixth Classes

## Worksheet 27-31 - Fieldwork

### Strand

Living Things (Science)

### Strand Unit

Plants and Animals

### Skills

Observing, Questioning, Classifying, Recording, Experimenting

### Concept

These worksheets cover a field trip to a woodland, devising a scavenger hunt for use in the woodland and finding things of interest to write up as a Nature Trail.

### Background information

Pupils must leave the classroom if they are ever to learn about their natural environment. If this whole pack is being followed in your school, pupils at this stage will be familiar with the trees and hedgerows in their school grounds and used to working outdoors. (If not better late than never!). What to do on the field trip is laid out in Worksheets 27,28 and 29. Other outdoor activity could be a scavenger trail. This can even happen in the school grounds and worksheet 30 is a sample you could adapt to your own grounds. Making a nature trail is selling your nice habitat to others, pointing out what is interesting there. This is well worth doing with pupils – get them to devise a guide to their chosen area and then invite another class (maybe even from a different school ) to come and see their special place.

### Resources

Worksheets 27, 28 and 29 for the fieldtrip, 30 - Scavenger Trail, 31-Nature trail

### Methodologies

All field trips should begin indoors. Pupils should be told where they are going, what they are expected to find, what equipment they will need and how they will use it. The 3 worksheets remain indoors but the pupils see them before they go out so that they know what they have to fill in afterwards.

The scavenger trail can be devised by the teacher and given out to the pupils. Alternatively one class can devise a scavenger trail for another class to use. Make sure the things you are asking them to find are in the area the trail covers.

The Nature Trail is devised by the pupils. They may wish to do one of the school grounds, the local park, the woodland they have been to. Let them decide. The computer and printer come in very handy here and Artistic pupils get a chance to show off their skills.

### Safety

Be careful outdoors and make sure you have enough adult help. Busy children tend to mess less, so make sure they are all assigned lots of work to do outdoors before leaving the classroom.

### Linkage

Environmental Awareness and Care

# Module 4 Fifth and Sixth Classes

## Worksheets 33-44 - Placenames

### Strand

Human Environments (Geography)

### Strand Unit

People Living and working in the local area.  
Sub-Unit Settlement, Homes and other buildings

### Skills

A sense of place and space  
Concept

Placenames contain a wealth of information about the area. These lessons look at placenames derived from trees and woods

### Background information

Ireland was covered with woodlands when the first people arrived here nine thousand years ago. So it is no wonder that trees and woods were used in place names. These worksheets look at how place names are derived. Even in places where no Irish has been spoken for generations the language lives on in the place names. The words for trees and woods are given and the pupils are invited to examine the placenames in use in their area and ponder over how they were derived.

### Resources

Worksheets 33-44

These are written for the pupils to use themselves. This work is particularly suitable for sixth class, as it is work they can carry out themselves while other classes in the room are being taught.

### Methodologies

#### Worksheet 33-36

These worksheets introduce the idea of an address. Pupils work individually on their own address and compile class addresses on Worksheet 36.

#### Worksheets 37 -38

What does the name of the place you live mean? Where could it have got its name? These two worksheets discuss the matter.

#### Worksheets 39-41

Trees as an inspiration for placenames is discussed here and pupils are asked to work out the given placenames.

#### Worksheet 42-44

More information on the use of trees in placenames is given here. All the native trees that were here when people came here have been used in placenames. This will help the pupils identify local placenames involving trees. As new areas, estates and districts are developed new place names are needed. What determines the place names given out now?

### Extension Materials

**REFERENCE BOOK** – Name your place – Logainmneacha cuid dár nOidhreacht published by Chomhlacht Forbartha na Sionna (01-4145116). This bi-lingual booklet contains a wealth of information on Irish placenames. Inspirations other than trees could be studied.

### Linkage

Gaeilge: Ag úsáid teanga

# Module 5

## Additional information

This module contains extra works in areas that may be of interest to teachers and pupils who are highly motivated and welcome extra material.

### Additional Information

The following is an index of the additional material to be found in Module 5.

1. Why Trees are Planted
2. Leaves
3. Trees Quotations
4. Trees in Folk Tradition
5. Placenames associated with Trees
6. Surnames derived from Trees
7. Trees as an Inspiration to Poets
8. Trees in Poetry
9. Trees as Sites for Other Plants
10. Irish Forestry
11. Trees as Pictures of the Past
12. The Tree Alphabet

For teachers with a particular interest in trees, extra materials are provided in Module 5. They are suitable for children in senior classes and a cross-curricular approach is adopted.

Sections 3 and 8 deal with trees and language. Expressions using trees, poems on trees and composing poems about trees are contained in these sections.

Local history, placenames, surnames and folklore related to trees are dealt with in Sections 4, 5, and 6. This work encourages children to find out about local names and traditions from older people in the area, and will be specific to the location of a particular school.

Additional ecology is included in Section 9, which should be read before a 5th or 6th class field trip is undertaken. This additional ecology could be included in that field trip for interested and observant children or it could be the topic of a separate study.

The history of our ancient past has been illuminated by the science of dendrochronology. Could Section 11 do this for your history classes?

Finally, information on the tree alphabet is given in Section 12. This could be used as inspiration for an art class or to make suitable covers for projects on trees.