

Tree Day

Teachers' Notes

Introduction

The Social and Environmental Studies syllabus of the primary school curriculum has been reviewed and is being replaced by a syllabus entitled Social, Environmental and Scientific Education (SESE). A main aim of this syllabus is to enable children to understand the natural environment in which they live.

SESE Syllabus

The SESE syllabus has four strands, two of which relate to the natural environment:

- ★ living things and
- ★ environmental issues, concerns and responsibilities.

The material in this project on Trees has been prepared to conform with the requirements of this syllabus. It takes into account its broad objectives.

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.

Presentation

The materials are presented on floppy disc, with a Worksheet format designed for the students. 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.

Tree Day

Modules

Module 1

Junior and Senior Infants

- 1 Parts of a Tree
- 2 Fruits and Seeds
- 3 Trees as Homes
- 4 Seasonal Field Trips
- 5 Poems

Module 2

First and Second Classes

- 1 Parts of a Tree
- 2 Fruits and Seeds. Food for Wildlife
- 3 Growing Seeds
- 4 Seed Dispersal by Birds and Animals
- 5 Food Chains
- 6 Experiment. Plants Need Light to Grow
- 7 Field Trip

Module 3

Third and Fourth Classes

- 1 What is a Tree?
- 2 How a Tree Lives
- 3 Types of trees
- 4 Seeds
- 5 Field Trip
- 6 Growing Trees
- 7 How To Plant a Tree Seed
- 8 How Wildlife Use Trees
- 9 Food Chains
- 10 How We Use Trees
- 11 Test Your Knowledge

Module 4

Fifth and Sixth Classes

- 1 Introduction to a Woodland
- 2 Food Chains and Food Webs
- 3 Pollination
- 4 How Trees Work
- 5 Competition and Adaptation in a Woodland
- 6 Nutrient Recycling
- 7 Tree and Woodland Conservation
- 8 Trees and Climate. Global Warming
- 9 Food from Plants
- 10 Tree Planting
- 11 A Woodland Field Trip
- 12 Make a Nature Trail

Module 5

Additional Information

- 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 from other plants
- 10 irish Forestry
- 11 Trees as pictures of the past
- 12 The Tree Alphabet

Junior and Senior Infants

The following is an index of the materials in this module.

The **scientific core** of the project focuses on:

1	Parts of a tree	Worksheets 1–4
2	Fruits and seeds	Worksheets 5–10
3	Trees as homes	Worksheets 11–13
4	Seasonal field trips	Teacher’s Notes p6
5	Poems	Worksheet 14

This project on trees contains a series of activities for pupils in Junior or Senior Infants.

The pictorial worksheets are accompanied by instructions for each section, with teacher guidelines regarding the children’s work.

Worksheets

The worksheets begin with an introduction to a tree and its parts. Children learn about these through writing and colouring.

The students then progress to examining fruits, nuts and seeds which they or their teacher may collect for classroom observation. There are three species involved – apples, chestnuts and acorns.

At this stage, the children do some practical work within their capabilities. They plant the seeds and look forward to their germination. They press leaves which they may use for art work.

The idea of ecology is introduced in the worksheets on birds (Worksheets 11–13). The children are made aware of the dependence of birds on trees for shelter, food and homes.

Field Trip

Finally, teachers are encouraged to take their students on simple field trips. A half-hour trip in the environs of the school to look at one or two trees, is well worth doing. Students who start going on field trips at an early age are much more aware of their environment than students who rarely engage in this kind of activity.

Emphasis

At this level, much emphasis is placed on language development, visual discrimination, writing, poetry and art.

The study of nature is part of the Social, Environmental and Scientific Curriculum. The scientific aspect is reinforced by simple practical experiments. Pupils are introduced to the idea of a tree as part of the living environment (ecology). A field trip to emphasise this is essential.

Section 1: Parts of a Tree

Worksheets 1 – 5

This section contains a drawing of a tree with parts for labelling – roots, trunk, branch, twigs, buds, leaves and seeds.

Learning and writing the names of different parts of a tree is the focus of this section.

There are close-up drawings of twigs, buds, leaves, seeds and fruit. These are to be named and labelled.

Compound leaves such as horse chestnut and ash are introduced. Pupils should count the leaflets and write the total.

Section 2: Fruit and Seeds

Worksheets 6 – 10

This section contains close-up drawings of fruits such as acorn, apple and chestnut.

Note: A fruit is the entire structure which contains the seeds. Ideally, the children should look at real fruits and seeds as well as at the drawings.

The children should be encouraged to use suitable words to describe the fruits – prickly, rough, smooth, juicy, round, oval, soft, hard, etc.

What colours are they? The children may colour them in.

Practical work on Fruits and Seeds

Experiment: The aim of this demonstration is to show that fruits contain seeds.
Autumn is the best time if you are using acorns or chestnuts.

You will need

apple/s	chestnuts in prickly cases
a sharp knife	acorns in 'cup and saucer' form

Apple

Cut the apple in half horizontally. A star-shaped cavity in the centre is exposed with seeds inside.

If the seeds are brown, the apple is ripe and the seeds will grow.

If the seeds are white, they are not yet fully developed.

The flesh of the apple is food for birds, wasps and hedgehogs, as well as for humans.

Chestnut

Open a prickly chestnut case by pressing it hard. The conker inside will be fully brown if it is ripe. You may find a partially brown one or one that is completely white. Conkers are food for mice.

Acorn

The acorn fruit consists of a seed sitting on top of a saucer-shaped structure which attaches it to the tree.

The acorn seed is easily detached from the base when it is ripe.

Acorns are food for birds such as jays, and for squirrels.

Find pictures of these birds and animals, if you can, and show them to the children.

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!)

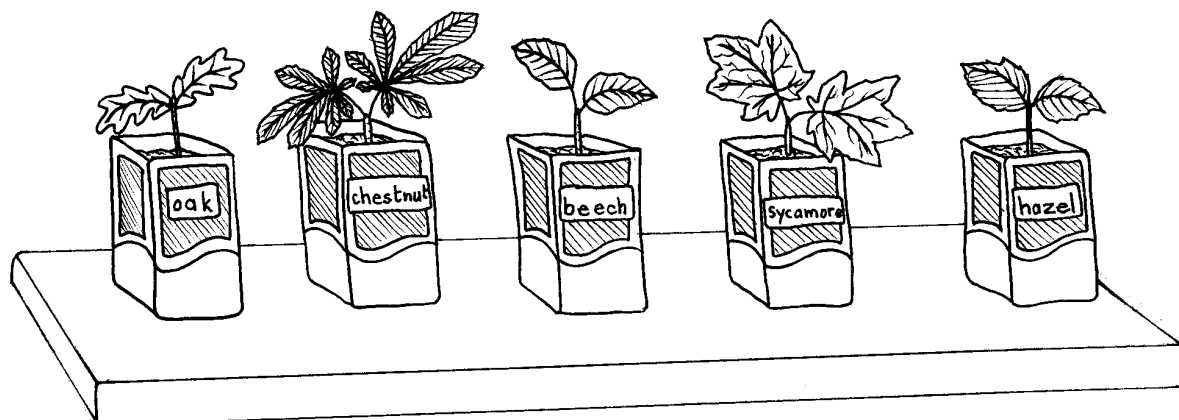
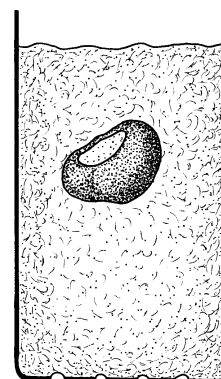
Horticultural sand

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.



Section 3: Trees as Homes

Worksheets 11 – 13

This section illustrates the fact that birds live in trees.

Magpies and **blackbirds** build their nests in trees where they will be safe from enemies such as cats.

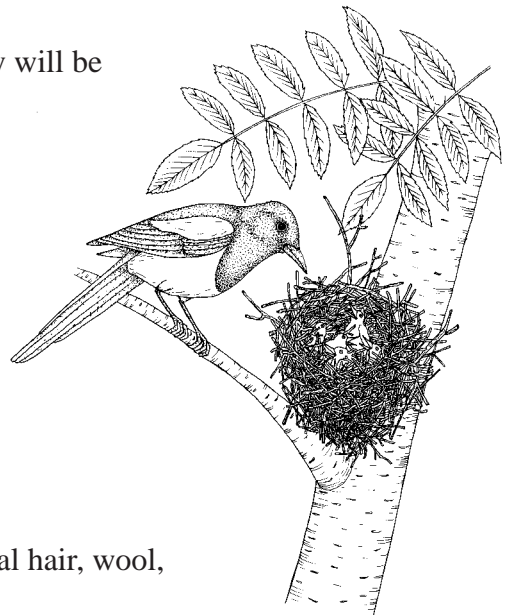
There are drawings of a magpie's and of a blackbird's nest.

It is interesting to compare these two types of nest.

A magpie's nest is large. It is made of twigs and can look quite untidy.

A blackbird's nest is made of moss, grass, hair and wool.

Words associated with nests – twigs, moss, mud, grass, animal hair, wool, large, small, comfortable, safe, etc.



Colour the picture of the magpie in its nest.

Colour the picture of the blackbird in its nest. The male blackbird is black with an orange-yellow beak. The female is brown, with a brownish beak.



Birds find some of their food in trees. They eat caterpillars which they find on leaves and insects which hide in cracks in the bark.

Birds sleep in trees, either in their nests when they have young or on branches in winter (or when they are nestlings themselves).

Rooks, starlings and pied wagtails huddle together to keep warm when it is cold.

Section 4: Seasonal Field Trips

Take the children out of the classroom to examine a tree.

Take them out at different times of the year.

★ in **autumn** to see leaves and fruits.

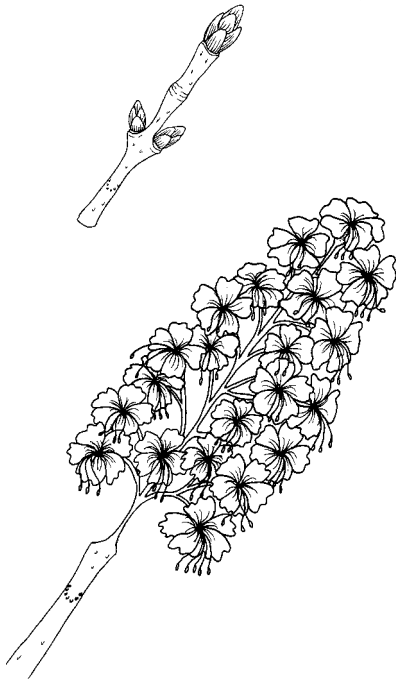
★ in **winter** to see buds and bark.

★ in **spring** to see new leaves and possibly flowers. (These may be in the form of catkins depending on the tree species.)

Ideally, the children should be taken out in small groups to observe a tree near the school.

They should be prepared for what they are going to see while still in the classroom.

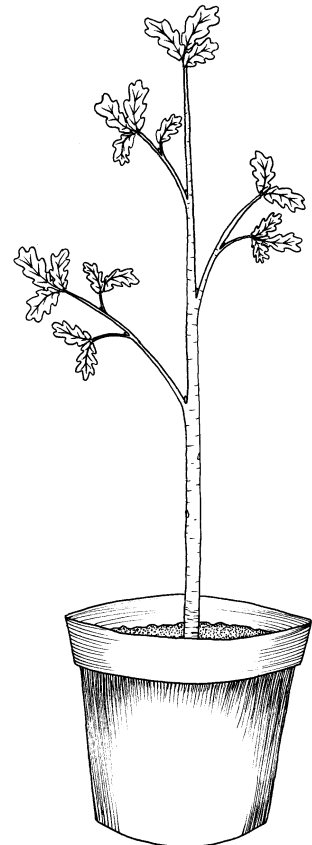
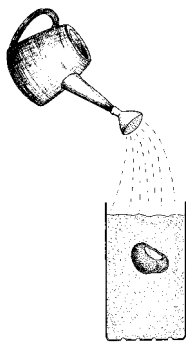
Each field trip should be of short duration.



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 to and hearing different sounds, another could focus on smells, a third could explore touching and texture, and finally looking and seeing.



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.

Poems

by Aileen Fisher

Pussy Willows

Close your eyes
And do not peep
And I'll rub Spring
Across your cheek –

Smooth as satin,
Soft and sleek –
Close your eyes
And do not peep.

Leaf Buds

All winter in the tree buds,
The little leaves lie packed
With tiny coats of April green,
All folded and exact.

And when the time is ready
(I wonder how they know?)
They quietly unfold themselves
And break and grow.

There are more poems in Module 5.

To Press Leaves

- ★ 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.

First and Second Classes

The following is an index of the materials in this module.

The **scientific core** of the project focuses on:

1	Parts of a tree	Worksheets 1–3
2	Fruits and seeds. Food for wildlife.	Worksheets 4–5
3	Growing seeds	Worksheet 6
4	Seed dispersal by birds and animals	Worksheet 7
5	Food Chains	Worksheets 8–9
6	Plants need light to grow – experiment.	Worksheet 10
7	Field trip	Worksheets 11–12

The worksheets in this module are mainly pictorial, with instructions in a language suitable for this age group.

Trees

The subject of trees is outlined in the following manner:

The children are introduced to a tree. This is followed by the physiology of the tree, how the tree functions and what the different parts do. A second function of trees, the dissemination of seeds, is introduced in Section 4. This is linked with the planting of seeds in Section 3 and with ecology, by the introduction of food chains, in Section 5.

Practical work

Practical work for the class is introduced in Worksheet 6 with the planting of seeds in containers.

Experimental discovery is illustrated by a classroom experiment in Worksheet 10 which shows that plants need light to grow. Potatoes are good for this, as they can be grown cheaply and quickly. Plant them in flower pots or in clean milk cartons.

Alternatively, any plants in pots (that you don't mind dying) are suitable. All plants need light to grow, not just potato plants.

Ecology

Ecology is introduced with the idea that seeds and fruits provide food for birds and mammals.

The children are encouraged to look at reference books or posters to ensure that their colours are accurate when colouring in. The animals to be coloured are simple – a hedgehog, a mouse, a thrush and a blackbird; it should not be difficult to find references to these. More ecological material is covered in Section 5, where simple food chains are introduced.

The materials lead to a field trip where the children are brought out to observe a tree in the school grounds, or nearby, and become completely familiar with it.

Third and Fourth Classes

The following is an index of the materials in this section.

The **scientific core** of the project focuses on:

1	What is a tree?	Worksheet	1
2	How a tree lives	Worksheets	2–4
3	Types of trees.	Worksheets	5–6
4	Seeds	Worksheet	7
5	Field Trip	Worksheets	8–9
6	Growing trees from seeds	Worksheet	10
7	How to plant a tree seed.	Worksheets	11–12
8	Trees and wildlife	Worksheets	13–16
9	Food chains.	Worksheet	17
10	Uses of Trees	Worksheets	18-20
11	Test your knowledge	Worksheets	21–22

The material for third and fourth classes is designed to arouse their curiosity and to encourage them to work things out for themselves. Why is a tree tall? How old is a tree? Why does a stem ooze when it is cut?

Tree Functions

The ways in which trees function are studied both in theory and by means of practical demonstrations. Class experiments, showing that trees need light, illustrate the theory taught in the plant physiology section. Deciduous and evergreen trees are introduced as well as conifers. The children are encouraged to experiment with examples of these from their surroundings.

Field Trip

The field trip for this age group focuses on collecting seeds from trees for planting which, ideally, should take place in autumn. The children become aware of the different requirements for germination, as well as how these conditions differ with different species.

Planting Seeds

The children sow the seeds they have collected, having first identified them so that they know what conditions are required.

Common trees are mentioned in the worksheets. Oak, beech, horse chestnut, sycamore and hazel seeds require one winter before germination, while holly, ash and rowan need **two** winters before they will germinate.

When planting seeds, consider what happens to them in the wild. Chestnuts and beech nuts fall off trees and split open when they are ripe, so their prickly covers should be removed before planting. Rowan and holly are eaten by birds. The hard seeds pass through the bird's body, so these seeds should be stripped of their flesh before being planted. The other seeds mentioned above can be planted as they are.

Ecology

Ecology is introduced in Section 8. The use of trees by wildlife for food and shelter is outlined. Herbivores and carnivores are introduced, as well as the concept of food chains.

Uses of Trees

Uses of trees by humans are mentioned in Section 10, showing that trees are not just sources of seeds and homes for animals, but that have economic uses as well.

This section can be used to introduce a discussion on the commercial planting and felling of trees.

Answers

Carnivore Word Search (ten words)

Robin, fox, bat, badger, stoat, bluetit, spider, kestrel, hedgehog, seal.

N.B. The snail is not a carnivore!

Crossword

Across: 1. slug 2. cones 5. chestnut 7. leaf 9. robin 11. hawk

Down: 1. sycamore 2. conifer 3. nuts 4. sloe 6. seeds 8. ants 10. oak

Fifth and Sixth Classes

The following is an index of the materials in this section.

The **scientific core** of the project focuses on:

1	Introduction to a Woodland.	Worksheets 1–6
2	Food Chains and Webs	Worksheets 7–9
3	Pollination	Worksheets 10–12
4	How Trees Work	Worksheets 13–15
5	Competition and Adaptation in a Woodland	Worksheet 16
6	Nutrient Recycling, making Leaf Mould	Worksheets 17–19
7	Tree and Woodland Conservation	Worksheets 20–22
8	Trees and Climate, Global Warming	Worksheets 23–24
9	Food from Plants	Worksheet 25
10	Tree Planting, Why and How	Worksheet 26
11	A Woodland Field Trip	Worksheets 27–30
12	Making a Nature Trail	Worksheet 31

Ecology is an important element of this module, as required in the SESE syllabus which states that children should study a local habitat, become aware of the inter-relationships between plants and animals, and observe how plants and animals become adapted to environmental conditions.

A **woodland** is the habitat chosen and this is introduced in Section 1. The children are made aware of the four layers in a woodland, with different environmental conditions in each layer. They learn about the inhabitants of each layer and why they are found there. They are introduced to the idea of nutrient recycling and decomposers. Section 6 deals with this aspect in some detail. The idea of a food web is introduced. Competition and adaptation are easily demonstrated in a woodland habitat, and Section 5 gives examples.

In the **tree physiology** section, tree flowers are introduced which in turn introduce the topics of wind and insect pollination. The children are encouraged to observe the different sorts of flowers and to note when they appear on particular trees.

The **practical experimental work** in Section 4 examines four conditions necessary for growth. The experiments demonstrate these and students are asked to explain what they observe.

Conservation of trees and woodlands is covered in Sections 7 and 8. Students are encouraged to become actively involved by planting trees in an area chosen by them. They are required to look after the trees they have planted to make sure that they become established.

A **field trip** for 5th and 6th classes is a comprehensive lesson which consolidates what has been learnt about trees in this and previous modules. It is therefore worthwhile to choose a suitable woodland area where you can spend some time to conduct your studies. Section 11 lays out how this field trip is conducted – vegetation is examined, animals are collected, decomposers are sought in the leaf litter. An example of a Scavenger Hunt is given. The children are encouraged to maximise their woodland knowledge by devising a Nature Trail.

A **cross-curricular approach** is taken in Sections 7 and 8 where the children are encouraged to use their knowledge of geography to locate important woodlands in Ireland, and rain forests in tropical regions.

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.