Module Four

Fifth & Sixth Classes

Tree Council of Ireland

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Fifth & Sixth Classes

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A Woodland

A woodland is a place where trees have been growing together for many years.

As well as trees, there are other plants and animals in a woodland.

There are **four** different **layers** in a woodland.

The Canopy

The canopy consists of the leafy tops of the trees. These leaves get the most sunlight.
Birds build their nests here. Insects such as caterpillars, greenflies and leafhoppers live on the leaves.
Squirrels live on the branches.

The Shrub Layer

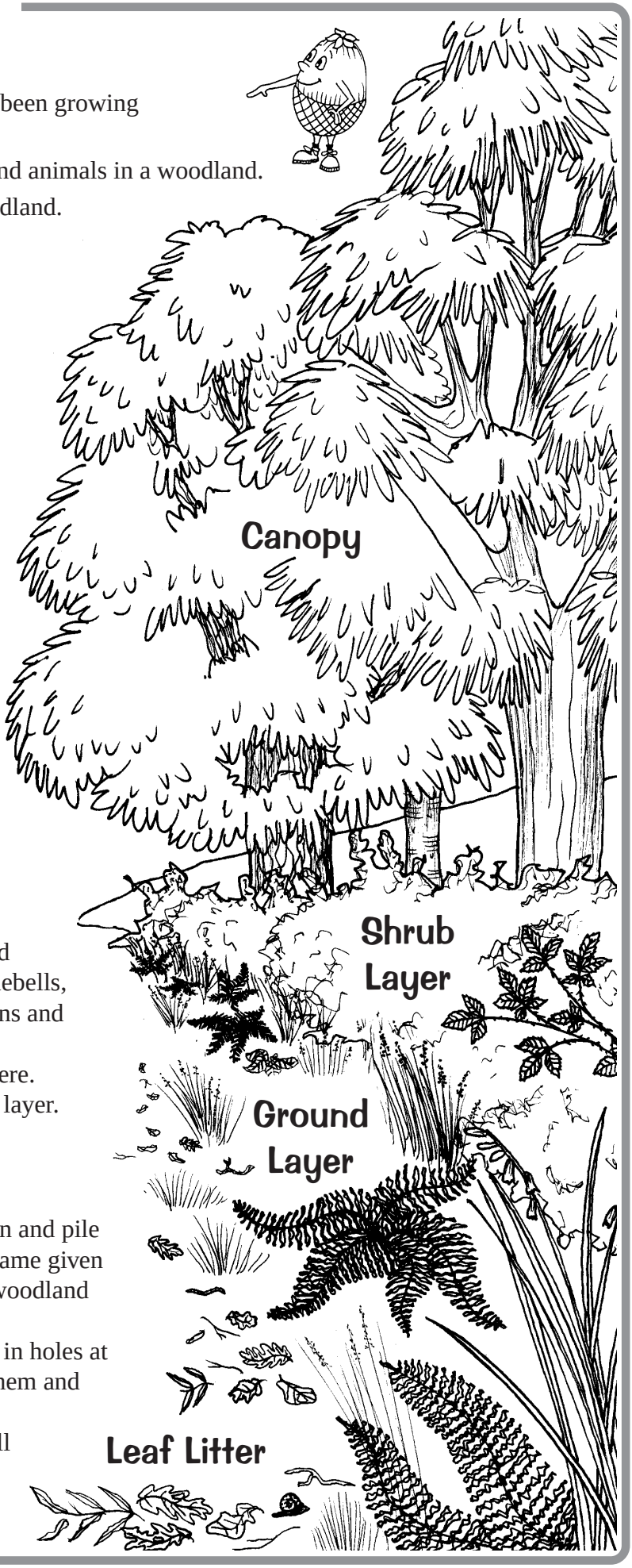
The shrub layer consists of smaller trees and shrubs. These include holly, laurel and rhododendron.
Bushes with berries such as hawthorn and blackberries are in this layer. These provide food for blackbirds, thrushes and other birds.

The Ground Layer

Small flowering plants live in the ground layer. Typical woodland flowers are bluebells, primroses, foxgloves and arum lily. Ferns and ivy also grow on the woodland floor.
Animals such as mice and shrews live here.
Beetles and ants can also be seen in this layer.

The Leaf Litter

Leaves fall off deciduous trees in autumn and pile up on the ground under the trees. The name given to this collection of dead leaves on the woodland floor is leaf litter.
Hedgehogs gather up bundles of leaves in holes at the bottom of trees. They burrow into them and curl up to hibernate there until spring.
If you turn over heaps of leaves, you will find woodlice, millipedes, centipedes and earthworms underneath.



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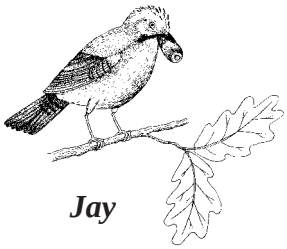
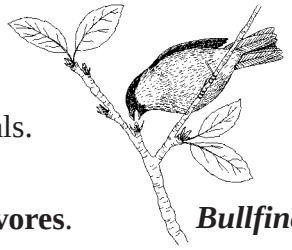
The Canopy Layer



Jay

In a woodland, **trees provide food** for **insects, animals and birds**. The leaves, flowers and fruits of trees are food for many different animals.

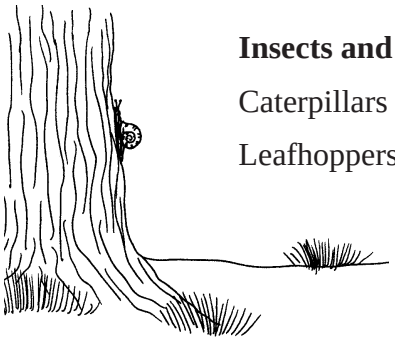
Animals that eat plants are called **herbivores**.
Animals that eat other animals are called **carnivores**.



Bullfinch

Each layer of a woodland has herbivores and carnivores.

Birds eat flowers, nuts and berries. Bullfinches eat flower buds before they open. Blackbirds and thrushes eat fruit and berries. Jays eat acorns.

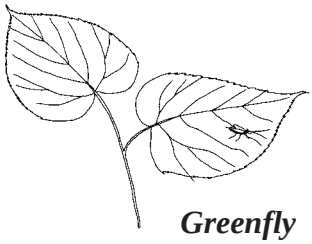


Snail

Insects and other small creatures eat leaves.

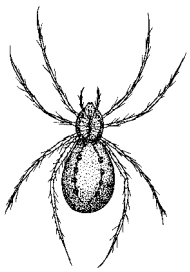
Caterpillars of butterflies and moths live on leaves.

Leafhoppers and greenflies suck the juices of leaves.

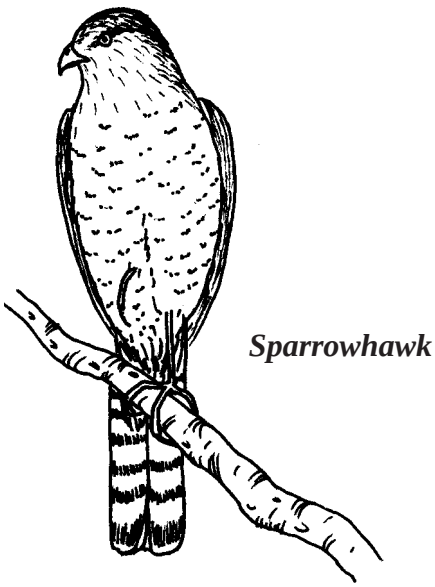


Greenfly

Slugs and snails climb up the trunks to eat the leaves at night and go back down again during the day.



Spider

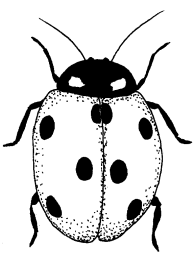


Sparrowhawk

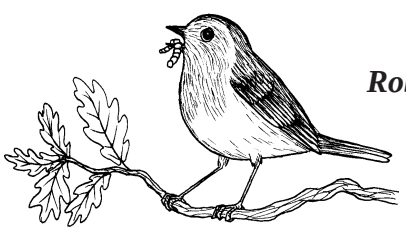
Carnivores

Here are some carnivores in this layer.

1. **Ladybirds** eat greenflies.
2. **Spiders** catch leafhoppers.
3. **Robins** eat caterpillars.
4. **Sparrowhawks** eat robins and caterpillars.



Ladybird



Robin

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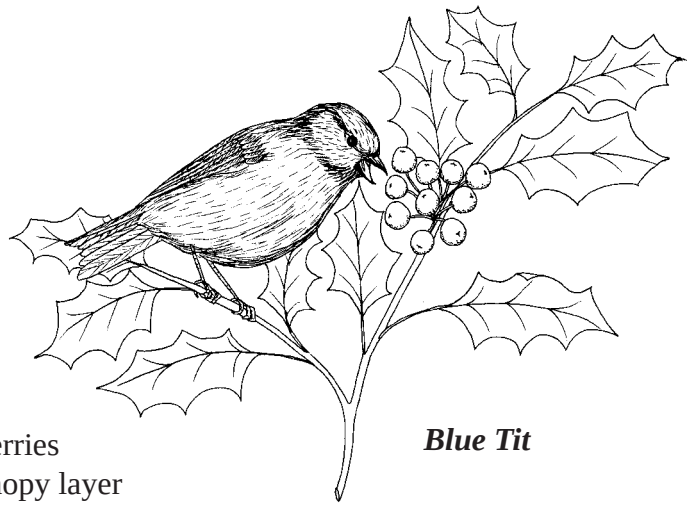
The Shrub Layer

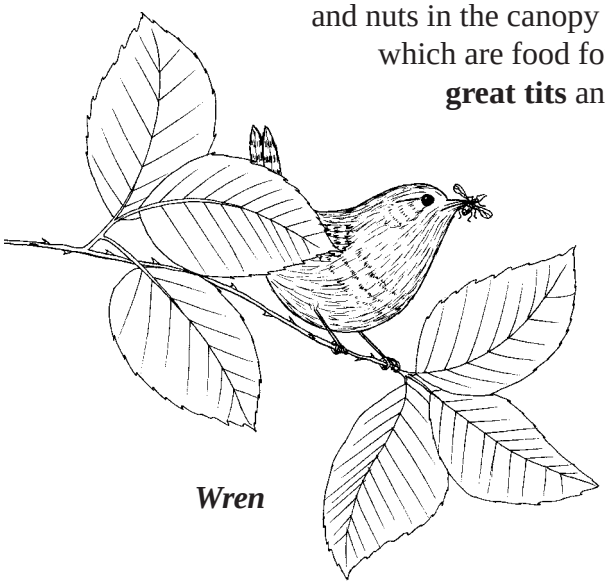
Finding Food

Many of the leaf-eating creatures in the canopy layer, such as **caterpillars** and **snails**, eat the leaves in the shrub layer as well.



Blue Tit

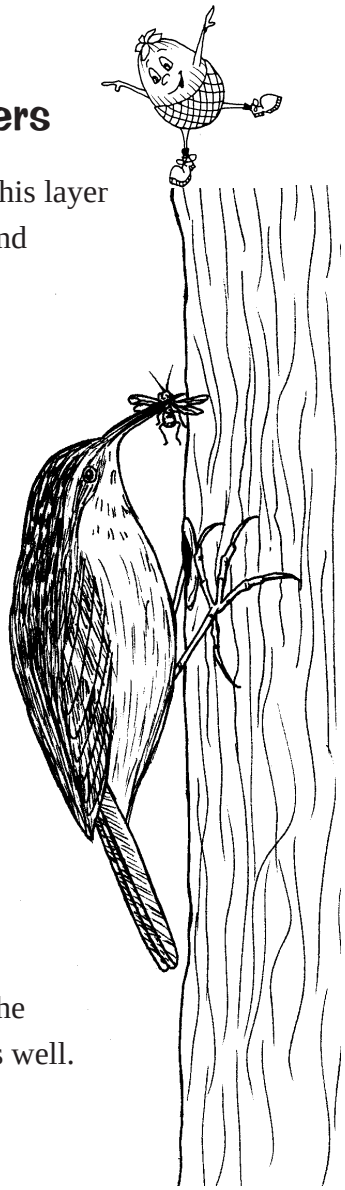
There are often more berries and nuts in the canopy layer which are food for **blus tits**, **great tits** and **chaffinches**.



Wren

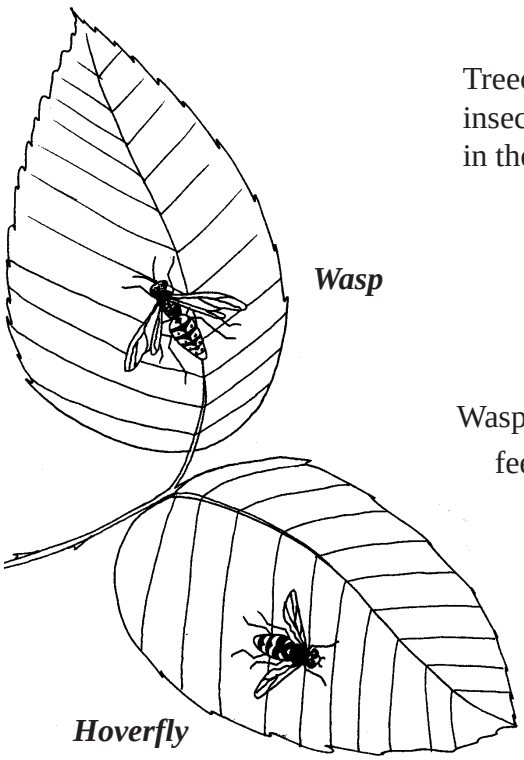
Insect Eaters

Insect eaters in this layer include **wrens** and **long-tailed tits**.



Treecreepers hunt for insects in the cracks in the bark of trees.

Treecreeper



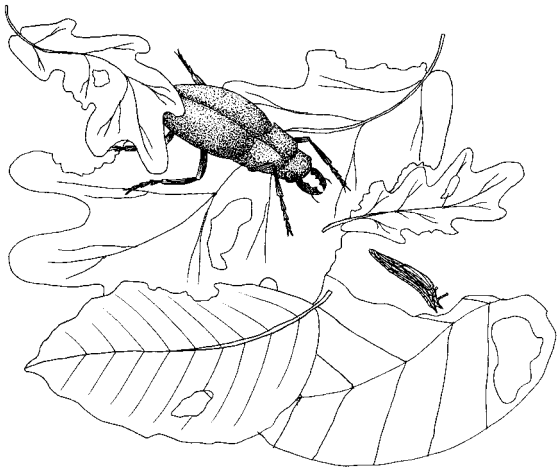
Wasp

Wasps and hoverflies feed on smaller insects. They are carnivores. They are found in the shrub layer as well.

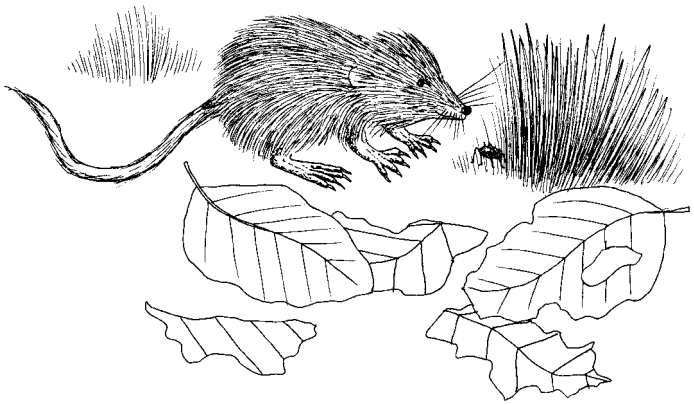
Hoverfly

The Ground Layer

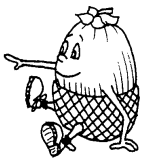
Many animals which live in the ground layer come out at night to find their food.



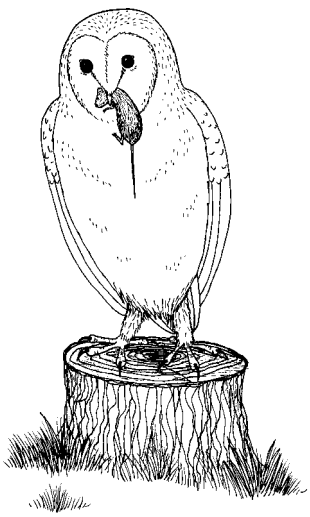
Large insects such as **ground beetles** eat smaller creatures.



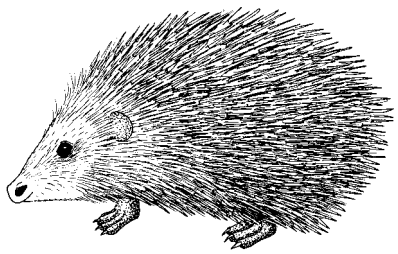
Pygmy shrews eat beetles.



Badgers come into woodlands to eat berries and mushrooms, as well as worms, slugs and snails.



Barn owls and long-eared owls hunt mice in woodlands at night.



Hedgehogs eat insects and slugs.

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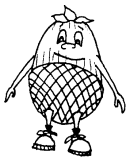
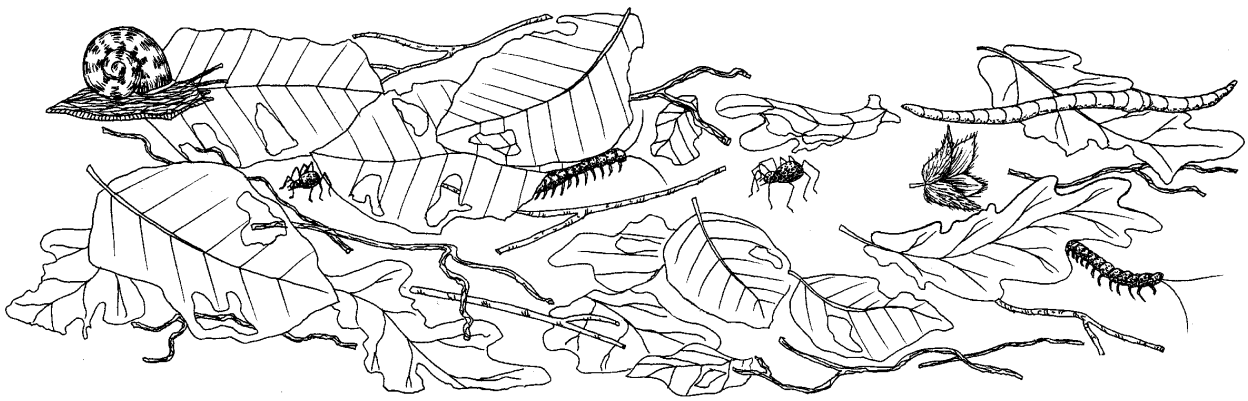
The Leaf Litter



Woodlice, **earthworms** and **millipedes**, inhabit this layer and eat dead leaves.

Centipedes and **spiders** are carnivores which feed on woodlice, and millipedes.

They run away very quickly when we turn over leaves to look for them.



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Plants and Animals

This word bank contains the names of some **trees and plants** found in a woodland.

Decide in which layer each tree or plant belongs. Then write its name in the correct box.

Trees and Plants

oak	primrose
brambles	beech
holly	bluebell
ash	wild garlic
fern	ivy

This word bank contains the names of some **animals** found in a woodland.

Decide in which layer each animal belongs. Then write its name in the correct box.

Animals

blackbird	squirrel
caterpillar	ladybird
hedgehog	badger
beetle	robin
	wood louse
	mouse

The Canopy

Plants	Animals

The Shrub Layer

Plants	Animals

The Ground Layer

Plants	Animals

The Leaf Litter

Plants	Animals

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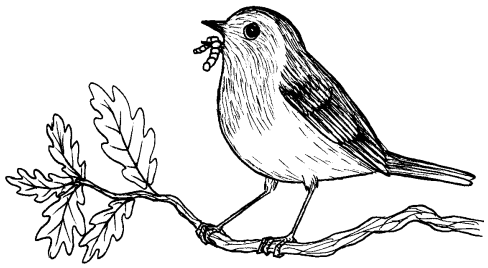
Food Chains

Construct a food chain for each layer in the forest.

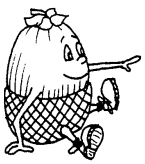


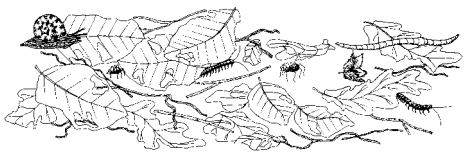
The Canopy

The Shrub Layer

The Ground Layer

The Leaf Litter





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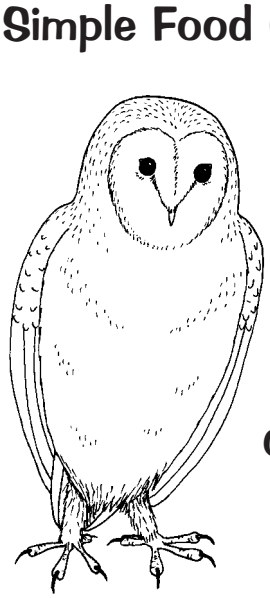
Food Webs

Every living thing is part of a **food chain**.
Some animals eat a varied diet and form parts of different **food chains**.
Food chains linked in this way are called **food webs**.

A Simple Food Chain



Owl

Mouse

Seed

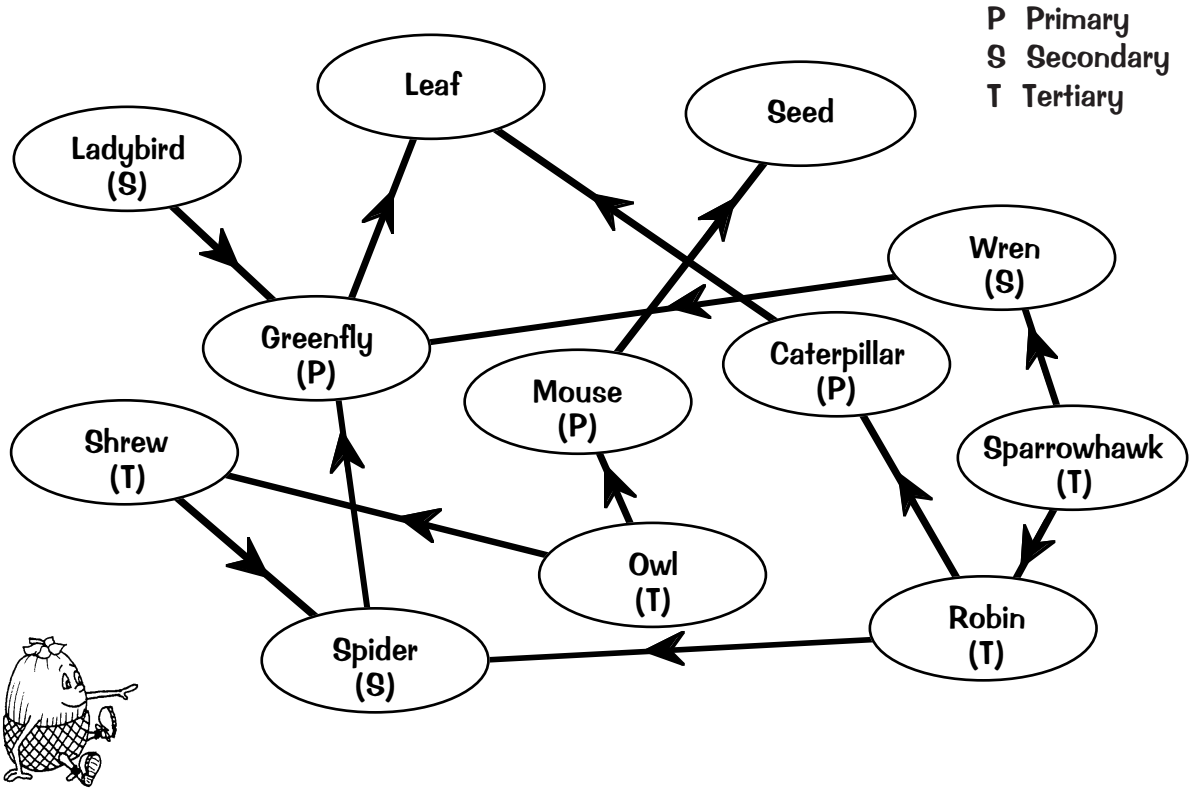
A Food Web

Herbivores are plant eaters.
They are known as **primary consumers**.

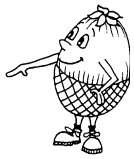
Carnivores eat other animals.
They may eat more than one type of herbivore and are called **secondary** or **tertiary consumers**.

Secondary consumers eat **primary** consumers.

Tertiary consumers eat both **primary** and **secondary** consumers.



Food Webs



Who eats what?

Draw your own food web on this page.
Use what you have learnt about the foods which birds and animals eat.

Remember

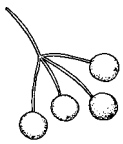
Herbivores – plant eaters – are primary consumers.

Carnivores eat other animals. They can be either **secondary** or **tertiary** consumers.

Secondary consumers eat primary consumers.

Tertiary consumers eat both primary and secondary consumers.



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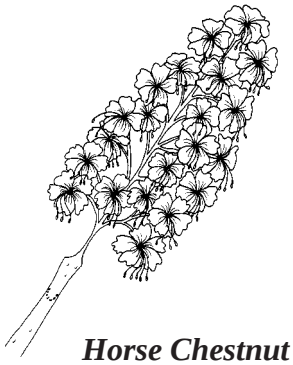
Pollination

Trees must produce **flowers in spring** so that they can make **seeds in autumn**.

Flowers contain **pollen** which is a very fine powder.

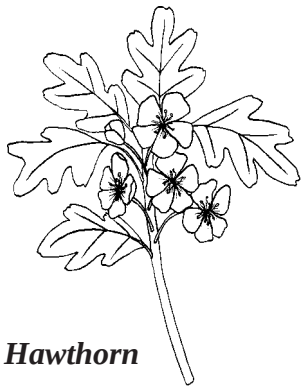
Pollen must be transferred from the male part of one flower to the female part of another flower so that seeds can form.



Horse Chestnut

Types of flowers

There are two types of flowers: **blossoms** (flowers with petals) and **catkins**.



Hawthorn

Blossoms

Blossoms attract insects such as bees and butterflies which visit these flowers to collect **nectar** (flower juice). While doing this they become dusted with pollen.

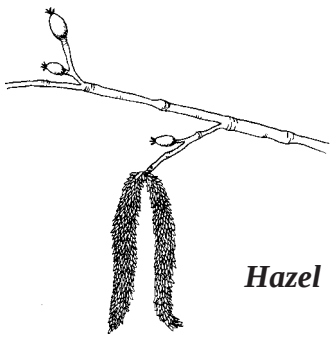
When they move on, the pollen they have picked up from one flower rubs off on the next flower. In this way, bees are very important in helping new seeds to develop and grow.

Bee on Hawthorn

Horse chestnut, cherry, hawthorn, apple and mountain ash trees have flowers which are pollinated by insects.

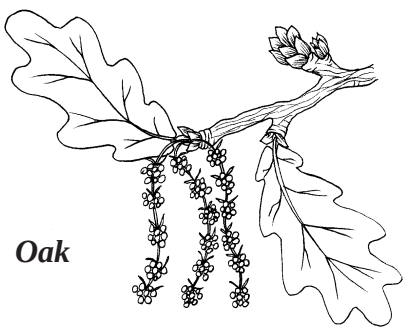
Catkins

Some trees use the wind to blow pollen from one flower to flower. Some trees have long catkins. As the catkins shake in the wind, the pollen is blown from tree to tree.



Hazel

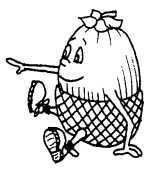
These trees don't need blossoms.



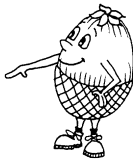
Oak

Instead, their flowers are long **catkins** which are easily shaken by the wind.

Hazel, birch, alder and oak trees have catkins.



Pollination



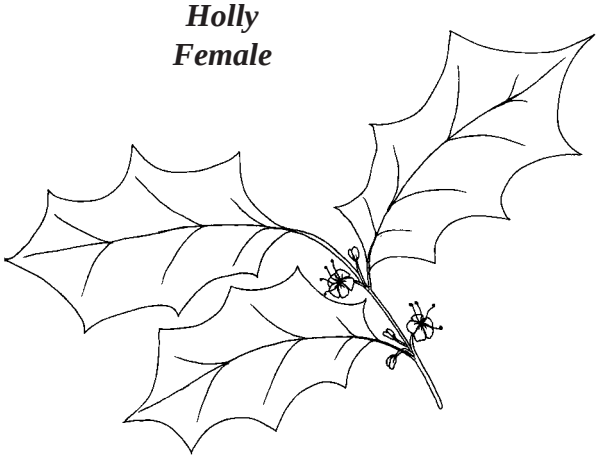
Male and female flowers

The flowers described so far have male and female parts in the same flower.

The male part produces the **pollen** and the female part makes the **berry** or **seed**.

Holly Male

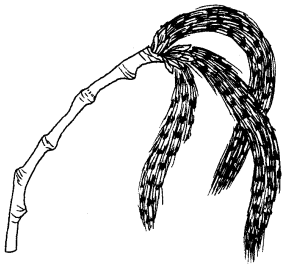
Holly Female



Some trees have **male flowers only** on one tree and **female flowers only** on another tree.

Holly, willow and poplar have separate trees for male and female flowers.

The pollen from the male flowers is **blown by the wind** to the female flowers.



Poplar Female

Poplar Male

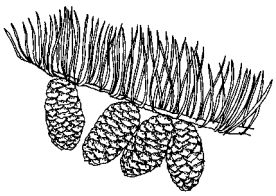
Coniferous flowers

Coniferous trees do not have flowers with petals.

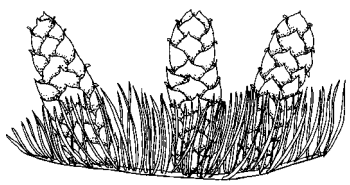
Their flowers are **cones**.

The small male cones have the pollen. Thelarger female cones are **on the same tree**. The wind blows the pollen onto the female cones which is where the seeds develop.

It is easy to identify male and female cones in spring when the pollen is ripe and it is blown by the wind.

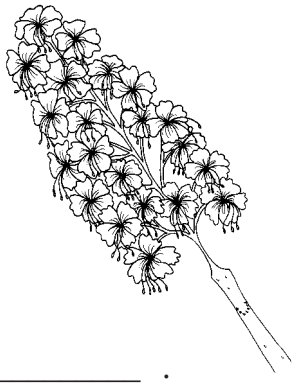


Male cones



Female cones

Pollination



To Do

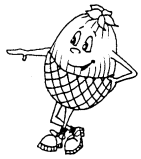
1 Collect some flowers in spring.

Then look up tree flowers in a reference book on **Trees**.

✶ White flowers grow on _____ .

✶ Pink flowers grow on _____ .

2 Collect some catkins. *Beware of this activity if you suffer from allergies!*



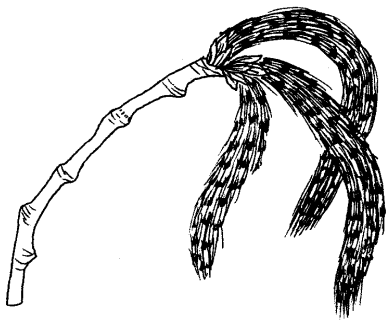
Put the catkins in a vase. Put the vase on a sheet of white paper.

The pollen will drop out onto the paper.

✶ Name the tree from which you collected the catkins?

_____

✶ What colour is the pollen? _____



3 Some trees develop their leaves first, then their flowers.

Some trees develop their flowers first, then their leaves.

What have you observed?

✶ _____ develops its flowers **before** its leaves.

✶ _____ develops its flowers **after** its leaves.

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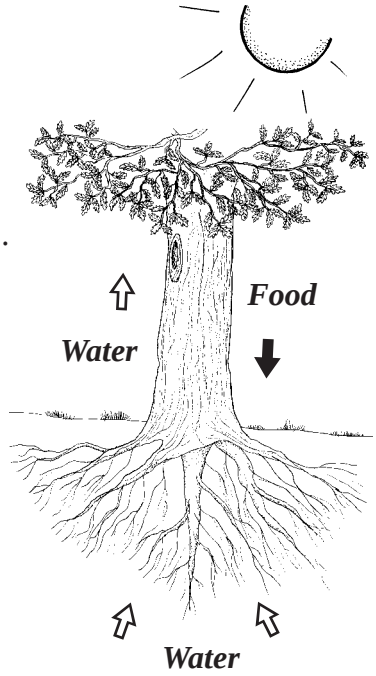
How Trees Work



Trees need **light**, **air**, **heat** and **water** in order to grow.
They need **sunlight** to make **food** and **oxygen**.
Humans need oxygen to live. We get it from trees and other plants.

Making food and giving off oxygen is called **photosynthesis**.
The oxygen is given off into the air by the leaves.
The food is sent down through the bark of the tree to the roots.
The bark is a very important part of a tree. If it is damaged, the tree may die.

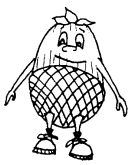
Leaves need **water** for photosynthesis. The water comes from rainfall. Trees need a lot of rain to grow and they cannot live in deserts. Water comes up from the roots, through the trunk of the tree under the bark, to the leaves.

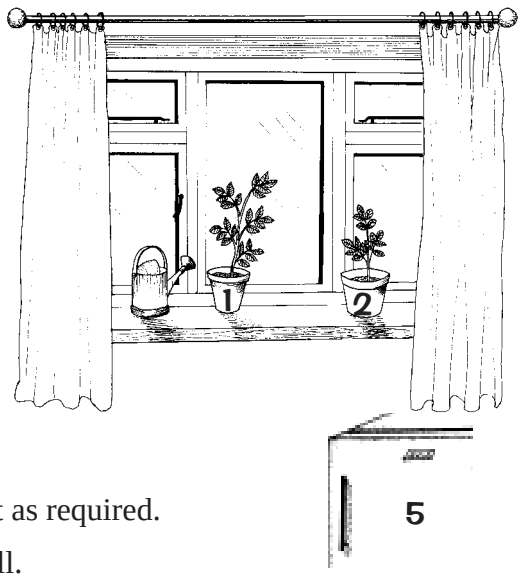
Photosynthesis experiments

- ✔ Plants need **light**. Energy for photosynthesis comes from sunlight.
- ✔ Plants need **air**. Plants take **carbon dioxide** from the air and give off **oxygen**.
- ✔ Plants need **heat**. Plants cannot grow at very low temperatures.
- ✔ Plants need **water**. They take it in through their roots.

You will need...

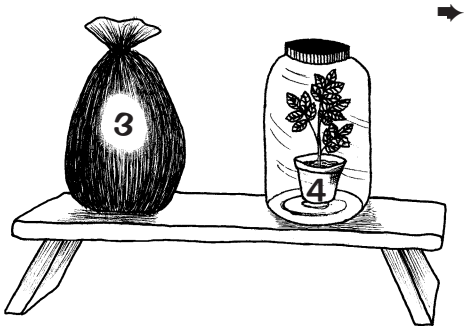
- ✸ Five healthy potato plants in pots. Label the plants 1, 2, 3, 4, and 5.
- ✸ A black plastic bag
- ✸ A large, clear jar with a screw lid
- ✸ Access to a fridge





What you do...

- ➨ Place Plant 1 on a window sill in full light. Water it as required.
- ➨ Place Plant 2 on a window sill. Do not water it at all.



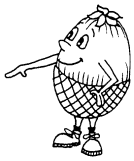
- ➨ Water Plant 3 and place it in the black plastic bag. Seal the bag.
- ➨ Put Plant 4 in the jar. Water it and then screw on the lid tightly.
- ➨ Water Plant 5. Then put it into the fridge.

This experiment is carried out over two weeks. Examine the plants at the end of each week.

Tree Council of Ireland

Results: Week 1

Examine the plants **at the end of Week 1.**



Plant 1

Q What has happened to this plant?

_____

Q Why? _____

Plant 2

Q What has happened to this plant?

_____

Q Why? _____

Plant 3

Q What has happened to this plant?

_____

Q Why? _____

Plant 4

Q What has happened to this plant?

_____

Q Why? _____

Plant 5

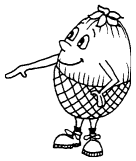
Q What has happened to this plant?

_____

Q Why? _____

Results: Week 2

Examine the plants at the end of Week 2.



Plant 1

Q What has happened to this plant?

_____

Q Why? _____

Plant 2

Q What has happened to this plant?

_____

Q Why? _____

Plant 3

Q What has happened to this plant?

_____

Q Why? _____

Plant 4

Q What has happened to this plant?

_____

Q Why? _____

Plant 5

Q What has happened to this plant?

_____

Q Why? _____

Competing and Adapting

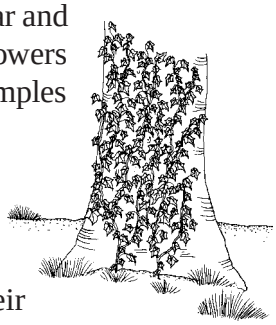
Plants and animals have to adapt to compete for food and light.

✶ All plants in a woodland need light to grow. Trees **compete** for light and the tallest trees get the most. So the fastest growing trees do best.

✶ Some plants are specially suited to growing in a woodland. They are **adapted** to make the most of the light they get.

✶ Ground flowers, such as primroses and bluebells, flower early in the year before the leaves come on the trees. More light gets through to the woodland floor at this time and there is enough light for these plants to flower.

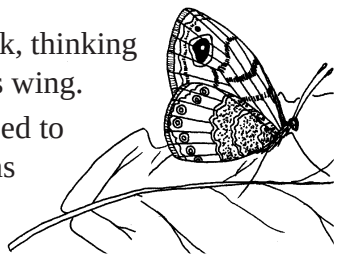
✶ Some plants are adapted to climb up towards the light using other plants as props. They then have light all the year and do not have to flower as early. Honeysuckle, which flowers in August and ivy, which flowers in November, are examples of these plants.



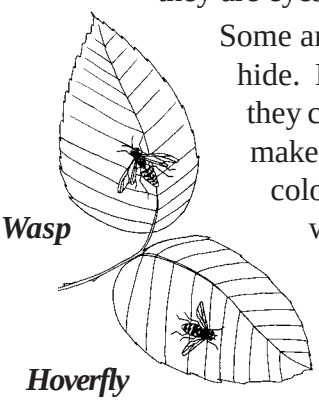
✶ Animals also compete and adapt in a woodland.

Herbivores that feed on leaves cannot move very fast to escape from their enemies. They use **camouflage** – being the same colour as their food – to hide from their enemies and they stay very still. Some caterpillars are green and can't be seen easily on green leaves. Other caterpillars are brown and look like twigs.

Some butterflies have eye spots on their wings which birds peck, thinking they are eyes, and the butterfly escapes with just a hole in its wing.



Some animals have an unpleasant taste so they don't need to hide. Ladybirds are red to warn birds not to eat them as they contain acid. Bees and wasps have stings which make them dangerous to eat. Their yellow and black colours also warn off birds. Hoverflies are the same colours as bees and wasps. Although they do not have stings, birds are afraid to eat them.

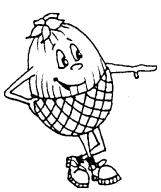


Wasp

Hoverfly

✶ Many woodland animals feed at night. Snails and slugs feed at night because they would get dried up in the heat of the sun during the day. Beetles and spiders hunt at night so they won't be seen by birds. Bats catch moths in woodlands at night. They have developed a **sonar system** which allows them to fly and locate their prey without crashing into trees. Like owls, bats are able to see in very dim light.

To Do

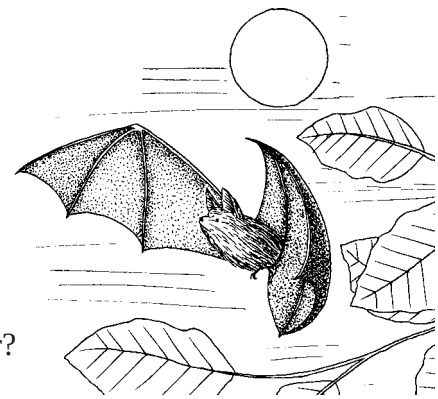


What is a sonar system? Can you find out?
(Clue: sound waves – very high pitch.)

What is an echo?

Discuss 'as blind as a bat'.

Is it likely that bats would fly into people's hair?



Recycling

When we walk through a woodland in October and November, we can kick through great mounds of leaves.

When we walk through a woodland in June, the mounds of leaves have gone.

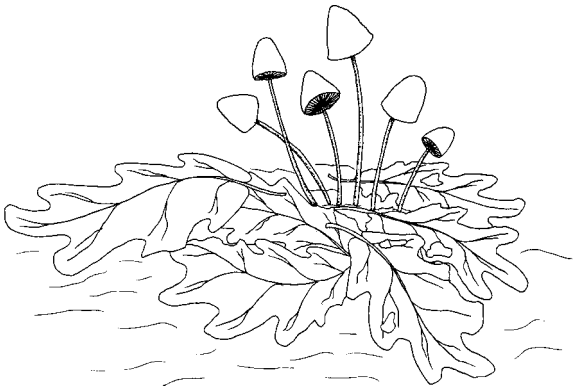
What happens to the leaves?
Where do they go?

Dead leaves provide food for special kinds of plants and animals called **decomposers**.

There are both **plant** and **animal** decomposers.

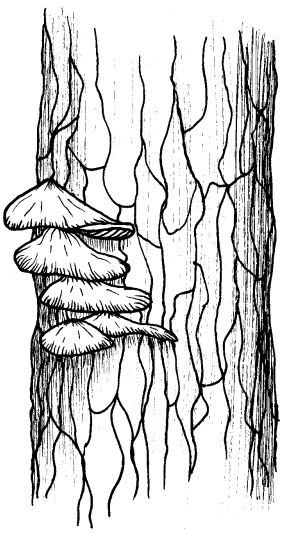
Plant Decomposers

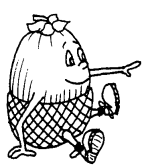
Plant decomposers are fungi.



Fungi are mushroom-like plants that grow on the dead leaves. They are not green, so they cannot make their own food Instead, they use the dead leaves as food. In doing so, they cause the leaves to decompose and disappear.

Fungi grow among the dead leaves all year.
In autumn time, they fruit and send up mushroom-like caps.





There are many different varieties of fungi and autumn is a good time to see them.

Fungi also grow on dead logs and under dead bark.

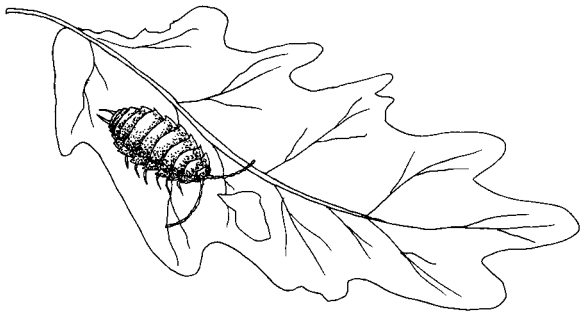
Tree Council of Ireland

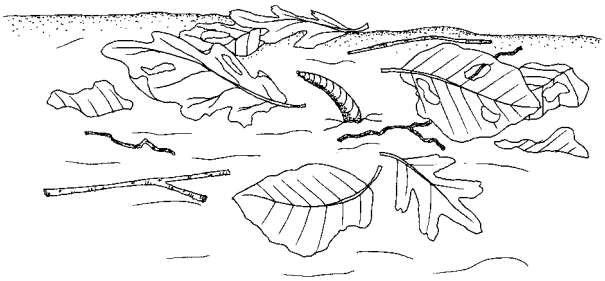
Material Recycling

Animal Decomposers

Animal decomposers are also hard at work in the leaf litter.

Woodlice and **millipedes** get all their food from dead leaves and dead timber.





Earthworms pull leaves down into the soil and eat them underneath the surface.

If you collect a handful of soil and dead leaves, you will see these animals at work.

Animal decomposers and **fungi** break leaves down completely.

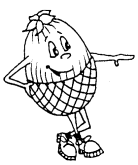
The Cycle of Life

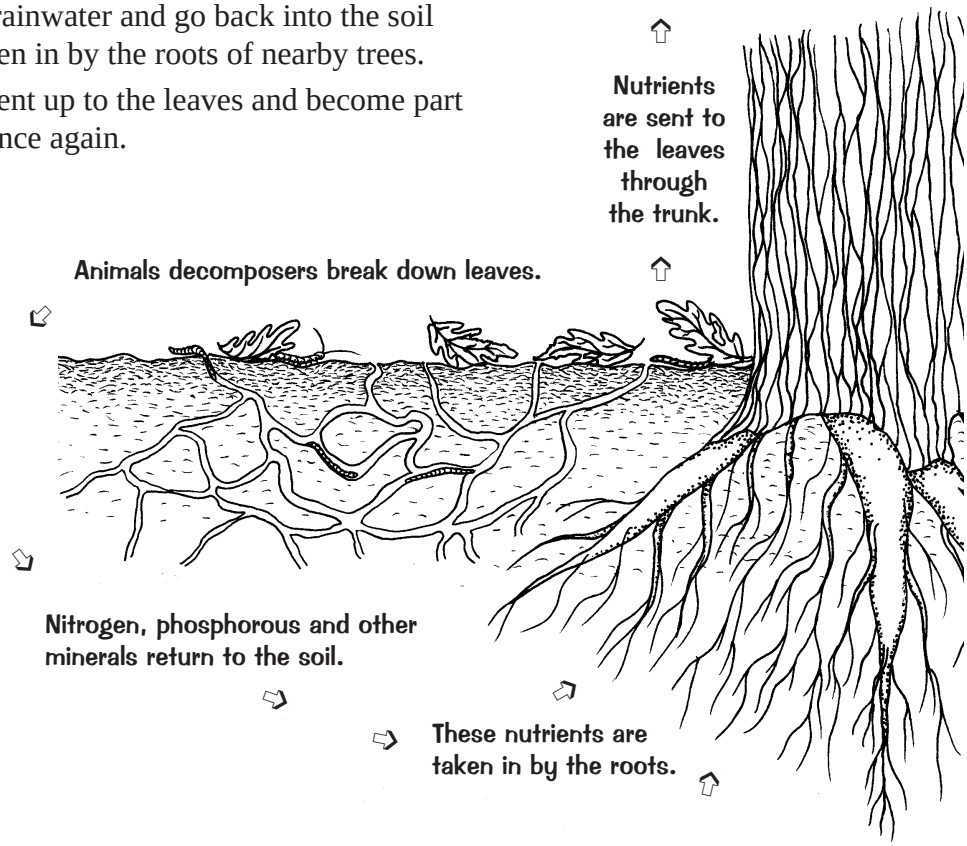
The food made by living leaves is used up by the decomposers. Leaves also contain nitrogen, phosphorous and other minerals.

These dissolve in rainwater and go back into the soil where they are taken in by the roots of nearby trees.

The minerals are sent up to the leaves and become part of the living tree once again.

Decomposers are very important in the woodland's **Cycle of Life**.



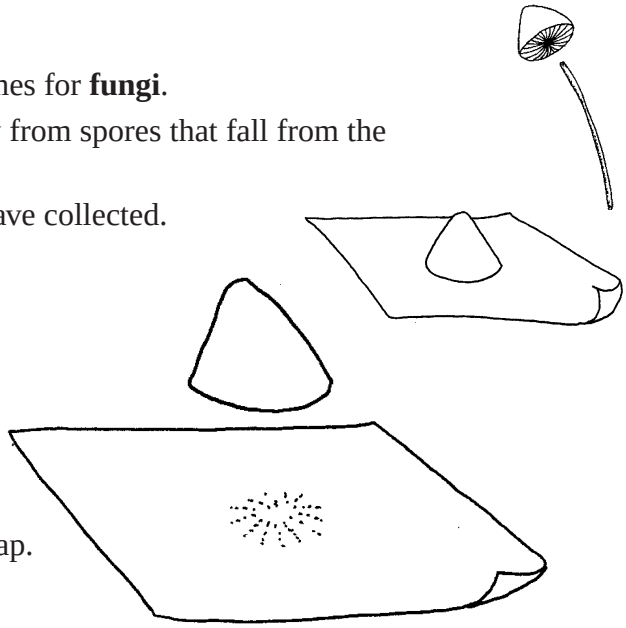


To Do

Mushrooms and **toadstools** are common names for **fungi**.

These plants do not have flowers. They grow from spores that fall from the fruiting cap.

You can make a spore print from a cap you have collected.



You will need...

A mushroom-type fungus

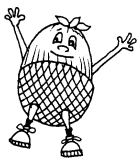
A page of white or coloured paper

What you do...

- ✶ Carefully remove the stalk from the cap.
- ✶ Put the cap on your page.
- ✶ Leave for two days.

The spores will fall down onto the page in the same arrangement as they were in the cap. Remove the cap and you will see the spore print.

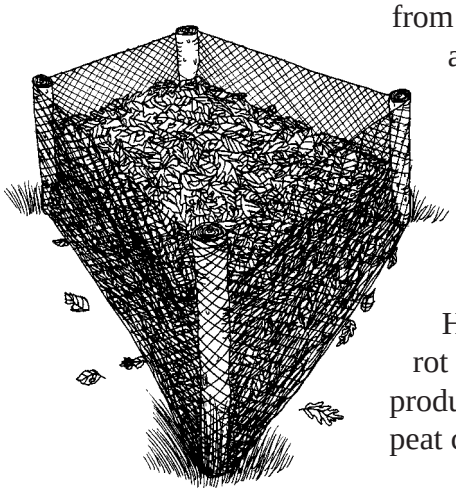
What colour were the spores? _____



Make your own Leaf Mould

Leaf mould makes excellent peat-free compost. It's free and easy to make and use. You can use it to improve the soil in your garden and as a seed compost.

- ✶ Hammer four posts into the ground. Make a cage by stretching a length of chicken wire mesh or plastic garden mesh around the four posts.
- ✶ You may also use a large black plastic bag, with a few holes in the bottom to drain away excess water.
- ✶ Fill the container with soggy leaves (collected after a rain shower). Push them down firmly to compact them. You may use leaves from any deciduous tree. Leaves from conifers and other evergreens acidify the leaf mould. This is an advantage if you have acid-loving plants.
- ✶ Add some grass clippings (not more than a quarter).
- ✶ Shred the leaves if you wish to speed up decomposition.

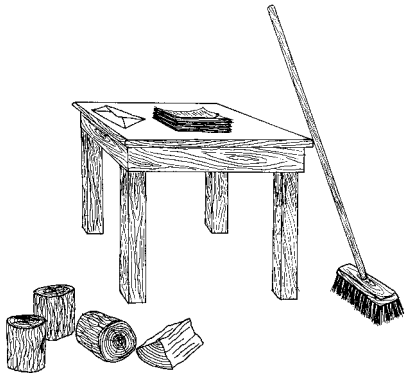


After a year, your pile will have sunk down considerably and the leaves will be partially rotted. This could be dug into the soil as it is.

However, it is recommended that you leave the leaf mould to rot or decompose for another year. You will have a much finer product. You can use your own home-made compost instead of peat compost. You are now actively helping to conserve our bogs!

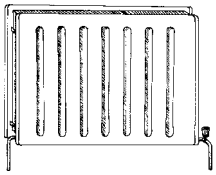
Conservation

It is important to **conserve** our woodlands. They are important in our lives for several reasons. If trees are needed for timber and firewood, they should be replanted so that new trees will take their place and the woodland will continue.



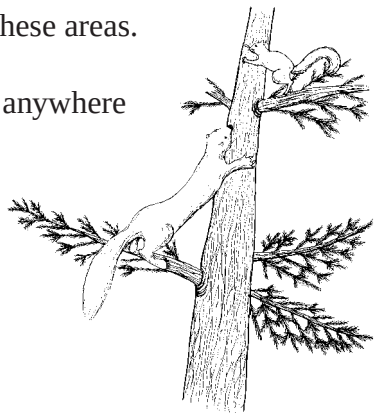
✶ Trees are a source of **timber** for **furniture** and **building**. They also provide the raw material for paper, cardboard, fibreboard and wood chip. In order to have a good supply of timber, forests of fast-growing trees are planted in Ireland. These are evergreen conifers such as sitka spruce, fir and pine.

✶ Trees are a source of **firewood**. People use firewood to keep warm and to cook. We do not use much timber in this way in Ireland. We use electricity instead, which is made from oil, coal, and water power, or we use natural gas.

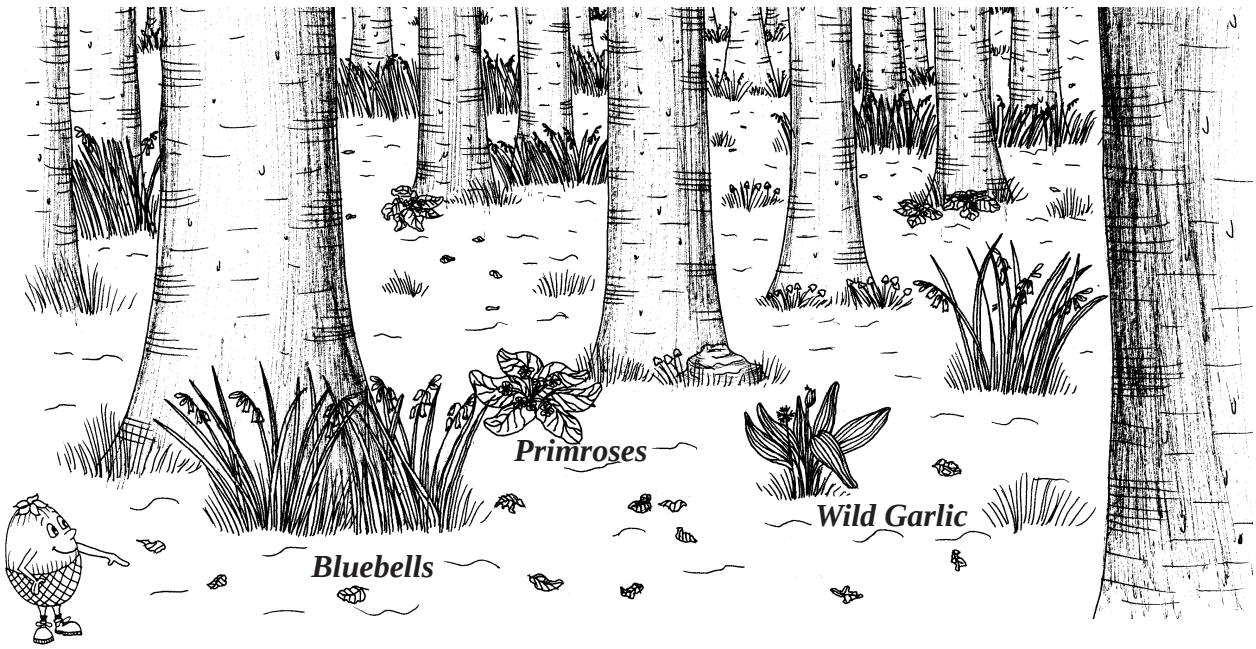


In many countries, people use timber for cooking as they have no other fuel. In Africa, Asia and South America, forests are being cut down for firewood and forests are very scarce around cities and towns. They are not being replanted in these areas.

✶ Woodlands are homes for **plants** and **animals** that cannot live anywhere else. In Ireland, squirrels, pine martens, jays, treecreepers and purple hairstreak butterflies live in woodlands only.



Many plants such as wild garlic, primroses and bluebells are woodland plants. In order to keep these plants and animals in Ireland, we must have woodlands.



Conservation

To Do

The following is a list of the best and most important woodlands in Ireland.
They are mostly **deciduous** woods except for one which is **mixed**.
They are important because they are on sites that have been wooded since the Ice Age.
Animals and plants in these woods are typical of a native woodland.

Can you mark them on the map?

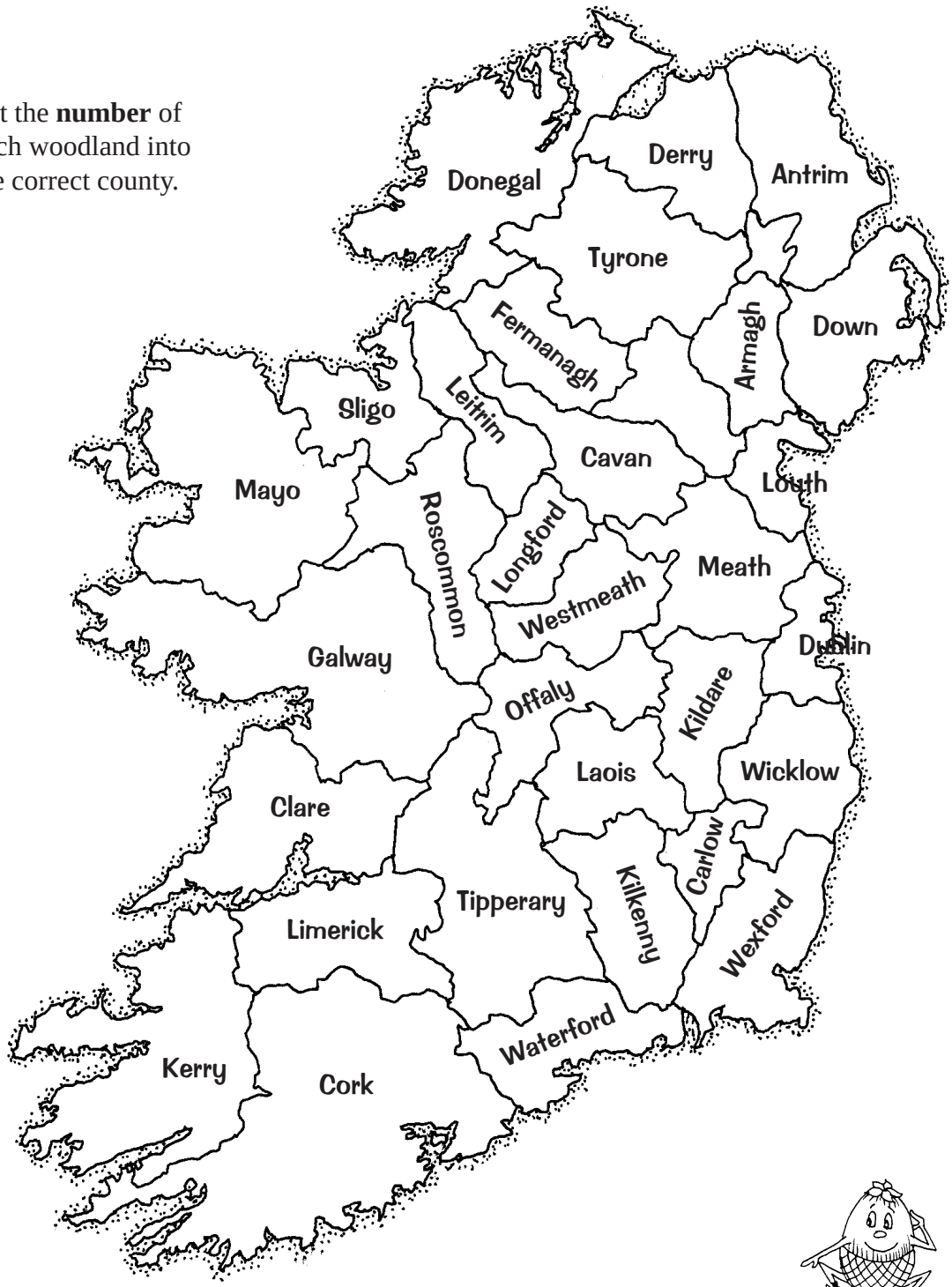
Use a detailed map of Ireland to find the exact location of each wood.

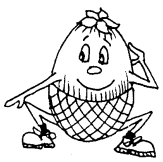
Put the number of each woodland into the correct county on Worksheet 22.

1 Glenomera Woods, The Burren, Co. Clare
2 Glengarriff Woods, Co. Cork
3 Glenveagh Woods, Co. Donegal
4 Ardnamona Wood, near Lough Eske, Co. Donegal
5 Derryclare Wood, Co. Galway
6 Killarney Woodlands, Co. Kerry
7 Uragh Woods, Co. Kerry
8 Corballis Woods, Co. Kildare
9 Abbeyleix Woods, Co. Laois
10 Lough Gill Woods, Co. Leitrim
11 Old Head Woodland, Co. Mayo
12 Rahugh Ridge Woods, Co. Offaly/Westmeath
13 Charleville Woods, Co. Offaly
14 St. John's Wood, Co. Roscommon.
15 Bonet Wood, Co. Sligo
16 Union Wood, Co. Sligo
17 Cornalack Wood, Co. Tipperary (**mixed**)
18 Knockasteen Wood, Co. Tipperary
19 Portlaw Woods, Co. Waterford
20 Nire Valley Woods, Co. Waterford
21 Crookedwood, Co. Westmeath
22 Long Hill Wood, Co. Westmeath
23 Killoughrim Forest, Co. Wexford
24 Glendalough, Co. Wicklow
25 The Glen of the Downs, Co. Wicklow
26 Powerscourt, Co. Wicklow
27 Rathdrum Woods, Co.Wicklow

Woodlands

Put the **number** of each woodland into the correct county.



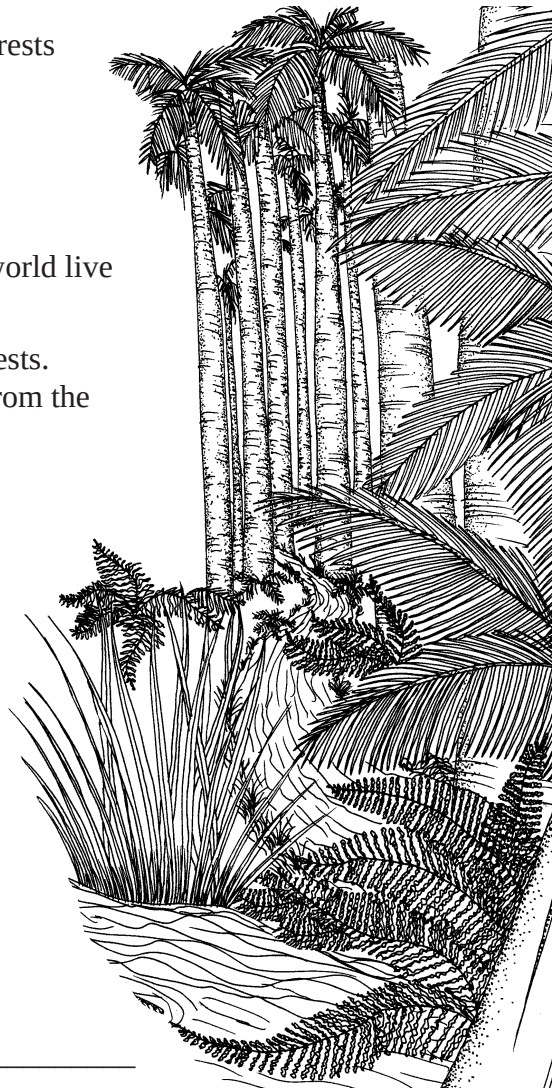


How many of the woodlands are in

Leinster? ☐ Ulster? ☐ Munster? ☐ Connacht? ☐

How many counties have no important woodlands left? ☐

Rain Forests



Trees are not just important as homes for wildlife. Forests are also very important to this whole planet.

The most important area of forest in the world is the **tropical rain forest**. Rain Forests occurs in a belt all around the world at the Equator.

Half of all the species of **animals and plants** in the world live in the rain forests.

The **climate** of the world is affected by these rain forests. During photosynthesis, trees absorb carbon dioxide from the air and release oxygen.

Great amounts of **carbon dioxide** are stored in the trees of a tropical rain forest. If these trees are cut down and burned, the carbon dioxide goes back into the atmosphere.

An increase in the amount of carbon dioxide in the atmosphere causes the **greenhouse effect**.

To Do

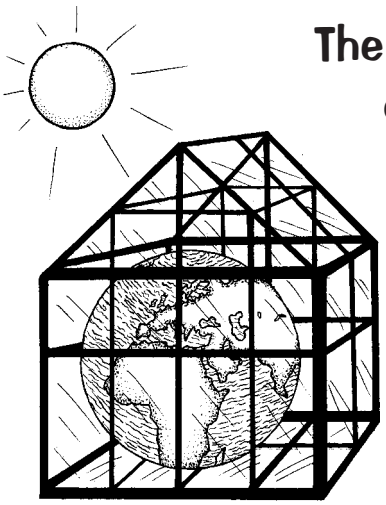
Rain forests occur in South America, West Africa and Asia. Find them on a globe or in an atlas.

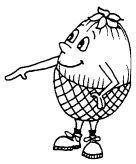
Q Name one country in each of these continents where rain forests occur.

South America _____

Africa _____

Asia _____





The Greenhouse Effect

Carbon dioxide in the atmosphere acts like a great **greenhouse** around the planet.

It absorbs the heat that comes from the sun and traps it, so that it cannot be reflected back into space.

The more carbon dioxide there is in the atmosphere, the warmer the earth will become.

As this happens the climate of the world will change, the polar ice-caps will melt around the edges, and sea levels will rise causing flooding in coastal areas.

Tropical forests should **not** be cut down and burnt.

Trees and Climate

The destruction of tropical rain forests affects the world's climate in another way.

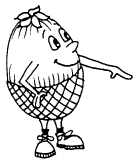
The areas where rain forests occur are very hot and very wet because they are along the equator.

The heavy rainfall trickles gently through the thick, leafy canopy and falls lightly on the forest floor.

When the forests are removed, the heavy rain falls directly on to the ground and washes away the soil.

This causes **flooding** and **landslides** and makes surrounding areas unsafe for people to live in.

Half of the world's rain forests have already been destroyed. Further destruction of rain forests must stop if these bad climatic effects are to be halted.



Conservation

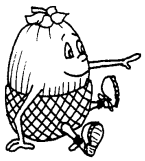
People who wish to conserve rain forests should not buy mahogany or teak unless it comes from areas where replanting is taking place.

The governments of the countries where the rain forests occur should be asked to set up nature reserves in tropical rain forests. This is happening in Brazil in South America.

Dublin Zoo is breeding Golden Lion Tamarin monkeys for reintroduction into these reserves.

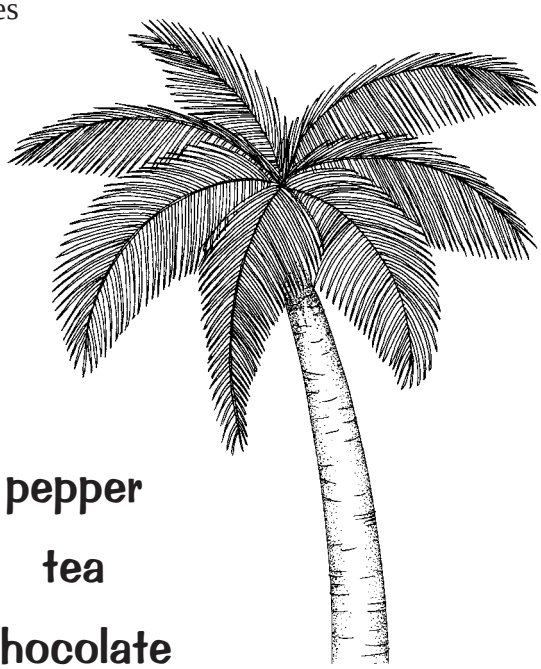
Food from Plants

Word Search



The Word Search contains the names of food and drinks that come from plants.

Can you find them all?

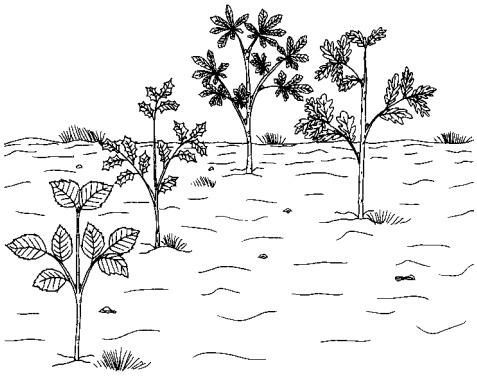


pineapple	banana	
orange	lemon	
bean	avocado	
peanut	coconut	pepper
nutmeg	chewing gum	tea
coffee	cocoa	chocolate

c	o	c	o	a	v	o	c	a	d	o	b	b
c	h	i	l	e	c	c	o	m	f	r	a	e
a	c	e	p	t	o	h	f	e	f	a	n	a
e	h	l	w	o	f	i	f	s	s	n	p	c
l	o	i	n	i	e	l	e	t	t	g	g	o
p	c	m	e	e	n	i	e	o	h	e	v	c
p	o	t	b	e	r	g	r	p	m	v	o	o
a	l	o	p	e	l	v	g	t	i	l	n	n
e	a	t	p	i	a	a	u	u	l	o	i	u
n	t	p	m	a	e	n	m	t	m	i	h	t
i	e	b	a	n	a	n	a	e	a	o	h	c
p	e	a	n	u	t	m	l	o	n	u	t	c

Tree Council of Ireland

Tree Planting



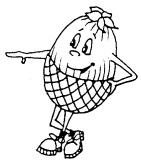
Trees are living plants – they mature, get old and die, even without human interference.

When trees that die, they are replaced naturally by trees that grow from seeds in the woodland.

If we want to use trees for timber, furniture, firewood and other things, we must plant trees to replace the ones we have felled. As we have so little woodland in Ireland (only 7%), we should plant far more trees than we cut down.

Deciduous trees – trees that lose their leaves in winter – are our **native trees**.
If we plant these, we will be providing more homes and food for the birds, animals and insects that already live here.

To Do



1. Survey your school grounds to see if it would be possible to plant trees.
2. Collect seeds from native trees in the autumn.
3. Plant the seeds in milk cartons and look after them for a year.
4. Plant out the young trees in the chosen place.

A hedge planted with ash, hazel and hawthorn is much more valuable to Irish wildlife than a hedge of Leyland cypress, privet or box.

Growing native trees is very easy. Seeds should be collected in autumn and either kept moist over the winter for planting in spring or planted indoors immediately. One-litre milk cartons are good containers for tree seeds. They are **biodegradable** and can be inserted directly into the soil.

When the trees in the pots are one year old, plant them out in the place where they are to grow. The milk carton will break down when it is placed in the soil and the tree will spread its roots. You can plant your classroom trees all together in the school grounds to form a woodland or in a line to form a hedge.

After Care

Young trees must be kept free from weeds and watered well during their first year in the soil.

Woodland Field Trip

There are **four layers** in a woodland. Identify and name four plants in each layer.

The Canopy

Four trees

1 _____

2 _____

3 _____

4 _____

The Shrub Layer

Four shrubs or smaller trees

1 _____

2 _____

3 _____

4 _____

The Ground Layer

Flowers or small plants

1 _____

2 _____

3 _____

4 _____

The Leaf Litter

Identify some of the leaves on the ground.

1 _____

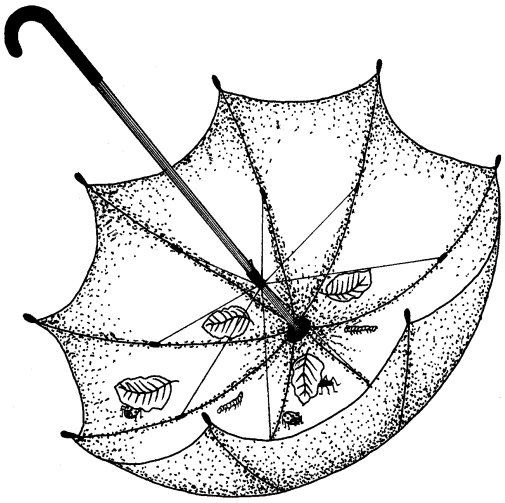
2 _____

3 _____

Tree Council of Ireland

Woodland Field Trip

Finding Animals



Canopy Beating

Do this to find the small animals that live on the leaves of a tree.

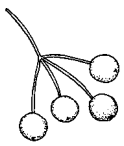
You will need...

an open umbrella

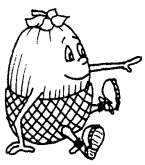
What to do...

- Two people should hold the umbrella by the edges, upside-down under the tree.
- A third person then firmly shakes the branches over the umbrella.
- The insects and small creatures living on the leaves will fall into the umbrella.
- Take the umbrella away and look at what's in it!

What you will see



- There will be leaves and twigs in the umbrella as well as animals.
- The carnivores that live by catching other animals will run under the leaves. They include spiders and ladybirds.
- Herbivores such as caterpillars, greenfly and leaf hoppers won't move.
- Flies and bees that were just resting on the leaves will fly away.



Observation

To see larger animals such as birds, divide into groups of two and stay quiet for at least 10 minutes. Note what you see and hear.

Examine the trunk closely to see if there are any animals in the cracks in the bark. A torch could help for this task.

Tree Council of Ireland

Woodland Field Trip

Finding Animals

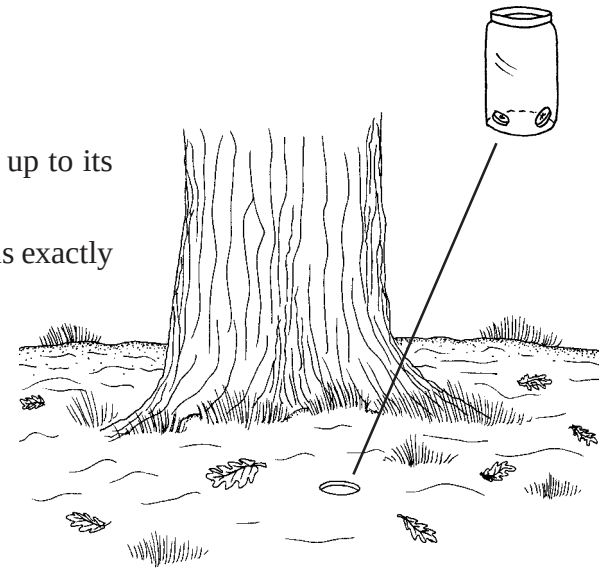
Pitfall Traps

These are traps set in the ground to catch animals that move over the ground at night.

What to do...

You will need a jar and a trowel.

- ✶ Dig a hole under the tree. Put the jar right up to its neck in the hole.
- ✶ Smooth off the soil so that the open jam jar is exactly flush with the level of the soil.



Small animals moving over the ground at night will fall in and won't be able to get out again because of the smooth sides.

You can catch **ground beetles** in this way.

Try baiting your pitfall traps with bits of meat or banana to see if your catch varies.

Return all creatures to the wild after observing them!

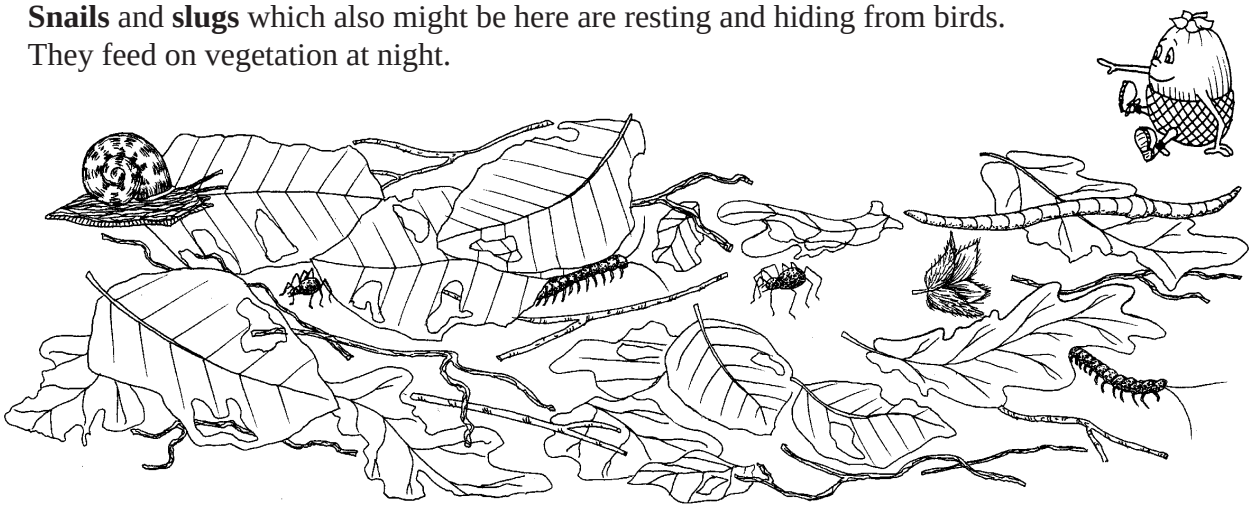
Leaf Litter

If you look under leaves and under big stones or rotting timber, you will find animals that break down dead leaves (decomposers).

Look out for **woodlice**, **millipedes** and **earthworms**.

Faster moving animals such as **centipedes** and **spiders** are carnivores. They eat the decomposers.

Snails and **slugs** which also might be here are resting and hiding from birds. They feed on vegetation at night.



Tree Council of Ireland

Scavenger Hunt

Take this list with you on a field trip. Identify all the things that are listed below.
You may be able to collect some items if you find them on the ground.

1 A hawthorn leaf

2 A berry

3 A wind-dispersed seed

4 An animal from the bark of a tree

5 A herbivore

6 A feather

7 Three pieces of litter

8 A fungus

9 A lichen from the trunk of a tree

10 A leaf that is not green

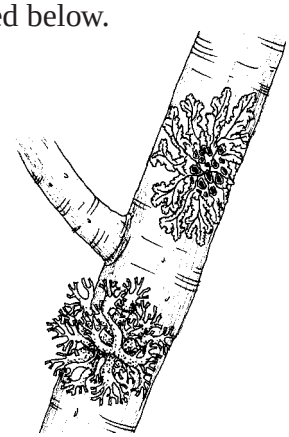
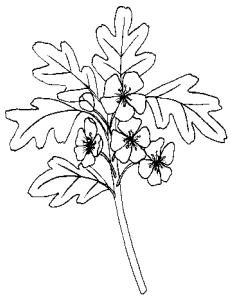
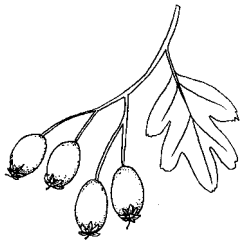
11 A carnivore

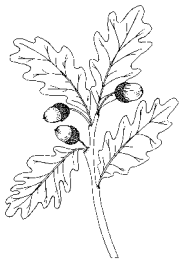
12 A wild flower

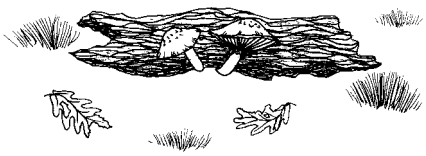
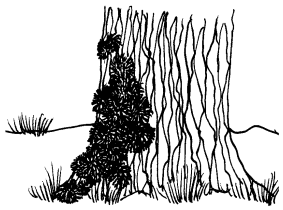
13 A nut

14 A fern

15 Something unusual

Notes

Tree Council of Ireland

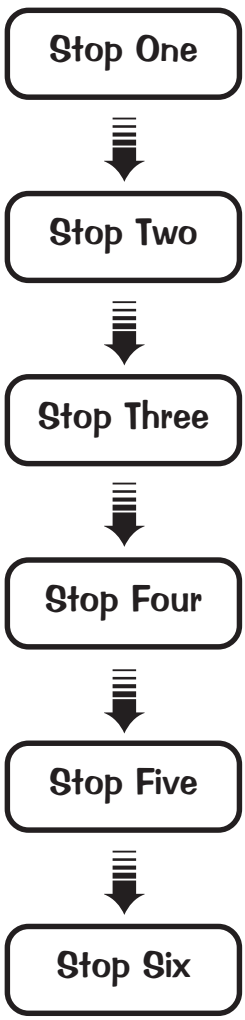
A Nature Trail

Make a Nature Trail

Nature trails are made by people who know lots about the area.
Make a nature trail in a wood that your class or a younger class will enjoy.

What To Do

- ✔ Decide on a number of stops on the trail, perhaps six.
- ✔ Identify something interesting at each stop.
- ✔ Draw a map and mark down where each stop is located.
- ✔ Make field notes for the nature trail.



Use Graphics

Include graphics to illustrate the nature trail.

Eyes when you are asked to look at things.

Ears when you have to listen.

A Pen or Pencil when you are to write things down.

Footsteps when you walk from one place to another.

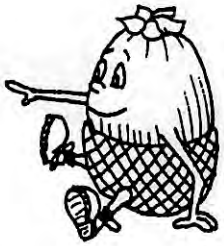
A Hand to feel things.

A Nose when there is an interesting smell.

and so on...

Tree Council of Ireland

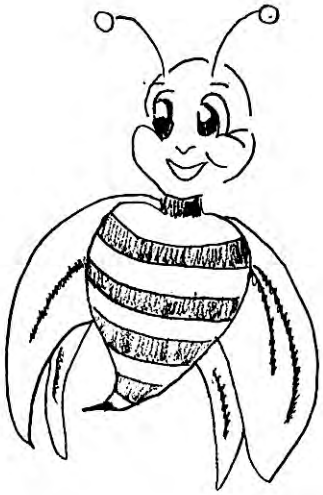
WHERE DO I LIVE?



You can answer this question by giving your ADDRESS. All letters that come to your house have the address of your family on them.

You can have an urban address if you live in a city or town such as

6 Chord Road
Drogheda
Co. Louth
Ireland



Or a rural address if you live in the country such as

Cloontooskert
Ballyleague
Co. Roscommon
Ireland

Fill in your own address

_____

_____

_____

_____

HOW DID THIS ADDRESS COME ABOUT?

Addresses are read from the bottom.

COUNTRY ***IRELAND***

Ireland is the country we live in so the last line of the address of every person in this country is *IRELAND*

PROVINCE

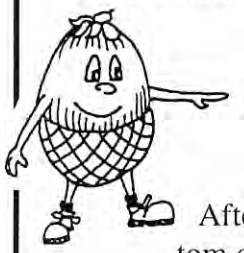
Ireland is divided into four provinces - **ULSTER**, **MUNSTER**, **LEINSTER** and **CONNACHT**. We don't put these on our addresses but we all know what province we are from - especially when the final for our province is being played.

What province do you live in?

WHERE DO I LIVE?

COUNTY

Provinces are divided into counties and everyone has a county in their address. There are 32 counties in Ireland. There are nine in Ulster, twelve in Leinster, six in Munster and five in Connacht.



MORE INFORMATION ABOUT OUR ADDRESS

After our country and our county, the next line up from the bottom on our address is the name of a town or city. This is because the post office where our letters are delivered from is always in a town or city. Dublin is such a big city that it has lots of postal sorting centres. Dublin addresses always have a number after Dublin to make sure the letter comes to the right post office. Uneven numbers such as 1,3,5,7,9,11,etc mean the sorting office is on the north side of the river Liffey, while even numbers such as 2,4,6,8,10,12,14, etc mean that the letter is going to the south side of Dublin city.

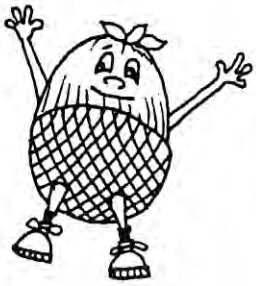
DIFFERENCES BETWEEN URBAN ADDRESSES AND RURAL ADDRESSES

URBAN ADDRESSES

If you live in a big town or city the postman will need more information in order to deliver your letter. He needs to know exactly where your house is and so the number of your house and the street or road where it is must be on the letter. There are so many houses on city roads and streets that they all need to have numbers so that the postman can deliver the letter. How many pupils in your classroom have a number on their house?

The part of the city may be mentioned as well if the same street name occurs twice in the one city. There are two St. Lawrence's Roads in Dublin, so the address must say if it is in Clontarf or Howth. There is a Riversdale Ave in Clondalkin and a different one in Palmerston - both in Dublin again.

Do you know any addresses that could get mixed up?



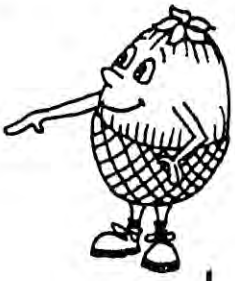
WHERE DO I LIVE?

RURAL ADDRESSES

Fewer people live close together in villages and rural areas than do in cities and towns so there is no need for such detail as house numbers in the address. The name of the road may be enough such as Main Street, Castlebellingham. In rural areas there are no names on the roads so the townland and the parish where the house is forms part of the address. Usually the townland name is enough, unless it is very small, followed by the nearest big town.

ADDRESSES

What's on our address depends on whether we live in the country or in the town



RURAL	URBAN
TOWNLAND	HOUSE NUMBER and ROAD or STREET
PARISH	TOWN AREA
NEAREST TOWN	TOWN or CITY
COUNTY	COUNTY
PROVINCE	PROVINCE
COUNTRY	COUNTRY

Worksheet A

Compile a list of all the addresses of the pupils in your class and add the address of the school to the list.

Answer the following questions.

1. Does everyone live in the same county?

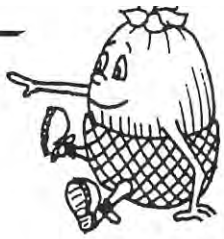
2. How many addresses are urban with a number on the house. What percentage is this?

3. Write down the different parts of the city or town the urban pupils come from.

4. List the parishes or townlands the rural pupils come from.

5. List the first line of everyone's address. For how many of these can you explain how the name came about. Get the owner of the address to ask at home, if the class has a difficulty with understanding where the name came from.

What's in a name?



Why do the places we live in have the names that they do? There are all sorts of reasons for place names and some of them are given below.

VERY OLD HISTORICAL NAMES

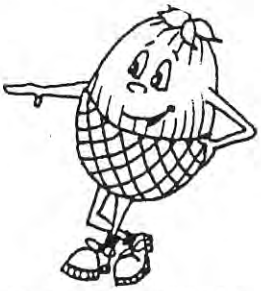
Some places are called after queens and heroes that lived long ago and we have to look at the Irish version of the name to see this.
ARMAGH is **ARD MACHA** in Irish - the high place where queen Macha lived.
ARDEE is **ATH FHIRDIA** in Irish - the ford where **FERDIA** fought against Cuchulainn.
CAHIRSIVEEN is the cahir or Stone fort of little Sadhbh, a local important woman.
BALLYCONNELL is the home (Baile) of Conal, a warrior of the Red Branch Knights

CALLED AFTER PEOPLE WHO OWNED THEM.

Rich landowners often called streets or towns on their property after themselves.
TYRONE is Tír Eoghan - the land of Eoghan a son of Niall the king of Ulster.
IRISHTOWN was where the poor Irish people lived outside the walls of the town proper.
CASTLEBAR was owned by the Barry's.
CONNEMARA was owned by the Conmaicne Tribe of the sea.
PEMBROKE STREET was part of Lord Pembroke's Estate.
And of course there are lots of Queen Streets, and King Streets and Princes Streets. We even had Queen's County and King's County but they were changed back to Laois and Offaly when we got our independence from Britain.

CALLED IN HONOUR OF FAMOUS PEOPLE

This usually applies to streets and roads in towns.
SEAN KELLY SQUARE in Carrick on Suir is called after the famous cyclist.
O' CONNELL STREET in many towns and cities is called after Daniel O' Connell.
We have streets and roads etc called after Robert Emmett, Parnell, Patrick Pearse, Jack Lynch. Many streets too are called after Our Lady or after saints.



Can you think of any called after modern Irish women?

CALLED AFTER THE PLACE IT LEADS TO

Sometimes roads are just called after where they are going. It's easy to understand why the following places have the names they do.
North Road, West Street, Dublin Road, Louisburg Road, Ennis Road, Circular Road.

What roads in your area get their names like this?

What's in a name?

CALLED AFTER AN IMPORTANT BUILDING OR CONSTRUCTION

When people lived on the same road as an important building they called the road after it. So we would expect to see a Church on Church Road or in Churchtown, a Bridge in Bridge Street, a Castle in Castletown, a Mill in Milltown and in Bushmills. Sometimes however the building is long gone and lives on only in the name. Many places with Cill in the names are called after monastic churches (Cill is a church) and these may no longer be there for example Kildare, Kilkee, Kilmore or places with Abbey in the name i.e. Abbeyleix.

Are there places in your area called after buildings and are the buildings still there?

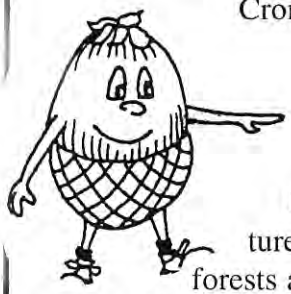
CALLED AFTER WHAT HAPPENED THERE

Places are called after important events. Markets and Fairs were very important so we have Fair Street, Market Street, New Market on Fergus, the Bull Ring, the Shambles, Cornmarket, Winetavern Street.

But sometimes the event was a one off happening.

TALLAGHT means a plague monument. 9000 people died here in the time of Parthalon, thousands of years ago and there was a monument there to commemorate them.
KNOCHNAREA is Cnoc na Ria in Irish - the Hill of the Executions
KNOCHCROCHERY in Co. Roscommon is the Hangman's Hill.

Many street names commemorate battles, sometimes even fought in other countries - Waterloo Road, Fontenoy Street, or the leaders of battles - Wellington, Cromwell, James, William, Charles, Brian Ború.

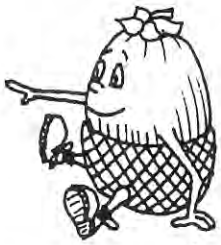


CALLED AFTER IMPORTANT FEATURES IN THE LANDSCAPE

Many towns, villages, parishes and townlands are called after important features in the landscape such as rocks, lakes, rivers, mountains and particularly forests and trees. When places were being named long ago, there were much more woodlands and wildlife around. Towns and villages were often named after these features, such as:
DUBLIN - the place of the black pool.
CORK - the marshy place
GALWAY - the stony river
SLIGO - the shelly place
ARKLOW (an tInbhear Mór) - the big estuary
TULLAMORE - the big hill
TRAMORE - the big strand
FOXROCK and **FOXFORD** were places where foxes could be seen.

Trees and Place Names

1. Woods



When people came to Ireland first about 9000 years ago they found that Ireland was an island completely covered in woodland. There were forests of ash and elm on good soil, oak and holly on acid soil and pine forests on mountain areas. Everywhere you looked there were trees and forests.

Little by little people began to cut down some of the forests to have space to keep cattle and to grow crops. But the trees were very important for shelter, for firewood, for building materials, for weapons, and indeed as homes for wildlife. It was thus very important to know where the right trees were for any particular purpose. So places were often named after the trees or woods that were there.

People spoke Irish in those days and so they named woods, trees and the places called after them in Irish. Although some of those old names have been translated into English today, many have not. If we want to find out which places near us are called after trees we have to learn the old words used by those people long ago.
This is not very difficult and you will be able to show off how much you know about the place names of your own area.

First you need the vocabulary.

TREE

The usual Irish name for a tree is **crann**. So places with *crann*, *cran*, *crin*, or *nagran* as part of the name means that it was a place where there were trees.

However there was another word in old Irish for a tree and some places are called after this. This word was **bile** (pronounced billa) which meant a large ancient tree. So places with *billa*, *billy*, *villa*, *ville* or *villy* in them could mean that they were called after a tree.

Rinnvilla, Crannagh, Moville

Sometimes part of a tree was used to describe the whole place. The Irish for a branch is **Craobh** and this appears as *crew*, *creevy*, *creeva* and *nagreeve* in place names.
Loughcrew, Creevykeel, Creevelea

Oak

WOOD

A wood is really a collection of trees. There were a great many Irish words for this. It might depend on how big the wood was, how big the trees were in the wood. All these names turn up again in our place names.
Coill is the usual word for a wood. This word turns up in lots of place names usually as *Kyle* or *Kilty* at the beginning of the name or *cuill* or *cullia* at the end of it.

Trees and Place Names

BEWARE however of presuming that everything with *Kil* in it means a wood. Cill means a church and many places were called after churches too so sometimes it can be hard to tell which is which.
Usually if it is Kil like Kilkenny, or Kildare, or Killaloe it means a church. If it is Kyle as in Kylemore, or Kilty as in Kiltyclogher it means woods.

Other words that mean a collection of trees are

Dairbhre - an oak forest often turns up as *derravara*, or *dorrery*

Doire - an oak wood. This appears as *derry* or *derreen* in place names.

Dearmhagh - an oak plain (in other words as far as the eye can see of oaks). This can be *durrow* or *derra* in a place name.

Eochaill - a wood of yew trees. This gives us *youghal* and *oghill* in place names.

Fidh - another word for a wood. So we get *fee*, *fi*, *fid*, *fith*, *fiodh* and *feigh*.

Garrán - a shrubbery, in other words a collection of small trees. So it appears in place names as *garran*, *garrane*, *garn* and *garrane*.

Mothar - a cluster of trees (in the northern half of Ireland only- it means the ruin of a building in the southern half). This word is *moher* in place names.

Muine - this is another word for a shrubbery. It is usually *money* or *mun* in place names.

Ros - This means a wood in the southern part of Ireland (and a peninsula in more northerly regions.) It is often spelled *ross*, *rus* or *rush* in place names.

Scairt - a thicket - again a smallish wood. This appears as *scart* or *scarty* in place names.

Worksheet B

You have now learned enough to have a go yourself at working out place names. All of the place names below are called after woods. Using the vocabulary you have learned so far, can you work out what they mean?

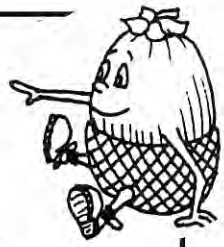
The first one has been done for you.

Place name	In Irish	Tree Part	Meaning	Other part	Meaning
Ballaghadereen	Bealach an doirin	Dereen	Little oak wood	Bealach	The road

Fill in the blank spaces yourself. Use the word bank below for clues to help you with the other part of the place name - or if you're desperate, ask the teacher.

Place name	In Irish	Tree Part	Meaning	Other Part	Meaning
Kylemore	Coill Mór				
Rathvilly	Rath bile				
Ballinascarty	Baile na scairte				
Fethard	Fiodh ard				
Carrowcrin	Ceathrú crainn				
Ballymun	Baile muine				
Rossbeg	Ros beag				
Ballygarran	Baile garrán				
Clonoghil	Cluain eochaill				

Trees and Place Names
2. Individual Trees

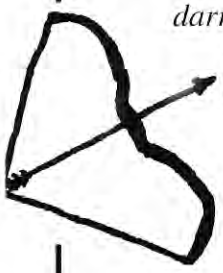


Long ago in Ireland everyone knew the names of all the species of tree that grew here. Mind you it wasn't all that difficult, as only native trees were here at the time and we only have twenty-eight of them. These trees had different values and uses so it was very important to know where they were. Places that had a lot of the same tree there were called after that tree. As a result a lot of our place names have the names of particular trees in them.

The most common and important trees are frequently found in our place names.

a. The oak tree must have grown everywhere because every county in Ireland has places called after it.

Dair is the most common word for oak. This appears in place names as *dar*, *der*, *dara*, *darra* and *darraigh*.



Omna is an old Irish word for an oak and omna or umna at the end of a name means that there were oak trees there e.g. Portumna

b. The Yew Tree is not very common nowadays. People don't plant it because the leaves are poisonous, but it was a very important tree long ago - bows for fighting were made from it. So it is not surprising that it occurs so commonly in our place names.

Yew

Eó is a yew tree. So we get Eochaill meaning a wood of yew trees.
Iubhar is another word for a yew tree and this is very commonly used too.

c. Most of our other native trees also appear in our place names. Here is a list of them.

Apple or crab apple is a common tree in our hedges still. The Irish word for it is *Úll* and this appears in place names as *ool*, *owl*, *aval*,etc.
Oolart in Co Wexford means *Úll ghort* an apple orchard.

The **blackthorn tree** has two Irish words. *Airne* means sloe, the fruit of the blackthorn tree. *Draighean* is the Irish word for the tree itself and often appears in place names as *dreen*, *drain*, *drin*.
So we have places called Killarney (Cill Airne), Drinagh and Dreenan all meaning that blackthorn trees grew in these places.

Birch tree

The **birch tree** is *beith*. This tree is found everywhere as it can grow high up in mountains and on poor ground as well as in cities where the air quality may not be the best. In place names this appears as *behy*, *beha*, *beagh*, *veha*, *vehy* and so on. So we have places such as Kilbeheny, *Coill beithne* - the birch wood.

The **mountain ash** also called the **rowan tree** is called *Caerthainn* in Irish. This is a fairly small tree with white flowers and red berries so it is very popular in towns where people have small gardens. The words *keeran*, *caran*, *kerane* and *keraun* in place names refer to this tree.

2. Individual Trees

The **hazel tree** is *Coll* in Irish. This tree was once so common that the word coillte, which means woods, originally meant a collection of hazel trees. This is still a very common hedgerow tree. It appears in place names as *col*, *cull*, *cul*, *coyle* and such like.

Holly is one of our native evergreen broadleaved trees. It is *Cuileann* in Irish. As it has leaves all year round it grows very well in the understorey of a woodland or hedge. This is quite a common place name appearing as *cullen* or *cullion*.

Holly

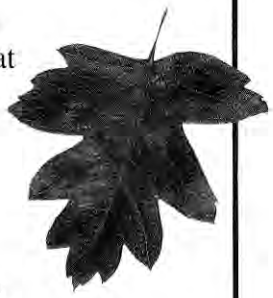
Alder

The **alder tree** is *Fearn*. This tree thrives in wet marshy places so place names with this in the name originally were suited to the growing of alder. It turns up as *farn*, *farnagh*, *farnoge*, *navarn*, and *navarna*.

The **ash tree** is still the most common hedgerow tree in Ireland, particularly on good soil. It is called *fuinnse* or *fuinnseóg* in Irish. It is particularly important as a raw material for hurleys. Do places with *funcheon*, *funshin*, *funchoge*, *unshin*, *unshog* or *hinchoge* in their names have good hurling teams? Check it out!

The **elm tree** was once very common with ash as woodland on good soil and we had several species of native elm. This is *Leamhan* in Irish, often written as *levan*, *levane livaun*, *laune* or *longfield*.

Willow is also well known by its Irish name - *Saileach*. We have all heard of sally gardens or indeed sally rods. These were so necessary in a world before plastic that people planted them in their gardens to have a supply of rods for baskets. It occurs in place names as *sillagh*, *sallagh*, *sill*.



The **whitethorn** or **hawthorn** is one of the main trees in our hedges today and the Irish word *sceach* or *sceagh geal* means this tree. It was treated with a healthy respect long ago and places with *skeagh*, *shehy*, *skey*, *skew* or *skeha* in the names could originally have been popular with the little people.

The **elder tree** is *Trom* in Irish. This tree is spread from the droppings of birds that feast on their berries. In place names it turns up as *trim*, *trom,* or *trum*. In Co. Monaghan it is called the boor tree, a word that has come over from Scotland.

We have other native trees such as **Aspen** (*Crann creathach*), **Arbutus**, (*Caithne*), **Juniper** (*Aiteal*), **Pine** (*Giús*), **Cherry** (*Crann silín*) and the **Spindle** tree (*Feoras*). However, these don't seem to feature to any great extent in our place names. It mustn't have been of any great significance if these trees grew in a certain place!

Tree Council of Ireland

Worksheet B
Becoming an expert in place names

A. For easy reference you need a list of all the place name words in alphabetic order. So go over the previous pages and write down all the words in alphabetic order with their meaning after them. This will make it much easier to find a word when you are looking at a place name. The glossary has been started for you below.

B. We have at least six counties in Ireland with tree words in their names (3 in Ulster, 2 in Connaught and 1 in Leinster). What are they?

C. What have Newry, Mayo and Youghal got in common. (Hint: look at their names in Irish).

D. Look at the class map of the area around the school. Are there any place names that are derived from trees? Visit the place and see does it live up to its name.

GLOSSARY

Airne : Sloe
Beith : Birch (can occur as behy, beha, beagh, veha, vehy)
Bile: Large tree (can occur as billa, billy, villa, ville or villy)