Module Three

Third and Fourth Classes

Lá na gCrann
Tree Day

Module Three

Third and Fourth Classes

Contents

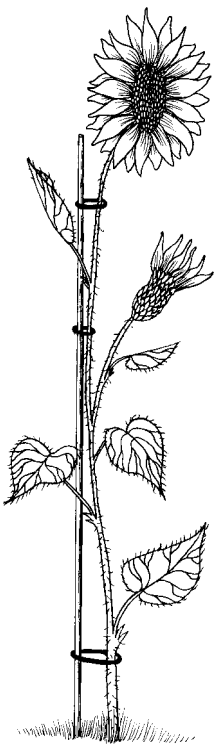
What is a Tree?

A tree is a tall woody plant that can live for many years.

Why is a tree so tall?

A tree is tall for two reasons.

- ✶ A tree grows taller and wider every year. Plants such as daffodils and grass die back every year after flowering so they will never grow tall like a tree.
- ✶ A tree has a strong woody trunk which is able to hold up the branches.



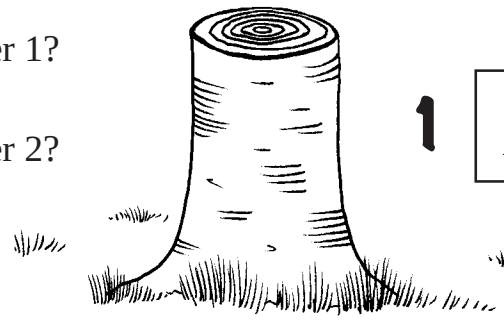
A tall flower such as a sunflower has to be tied up and supported to stop the wind blowing it over. This is because the sunflower does not have a woody stem.

How old is a tree?

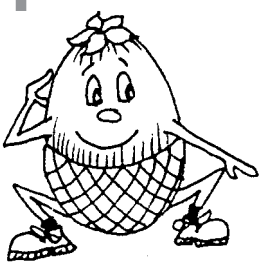
How old is a tree? You can tell the age of a tree by counting the rings. There is one ring for each year.

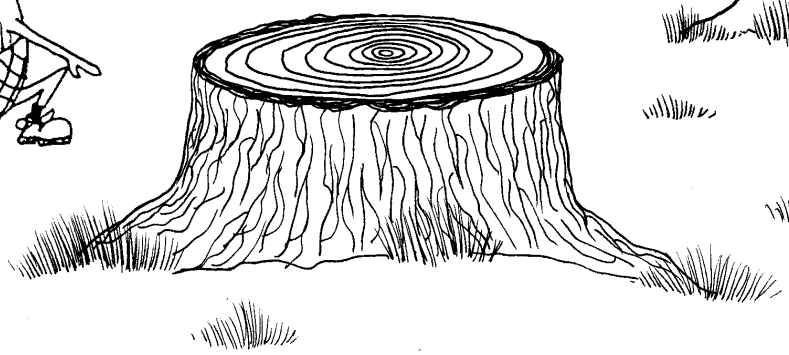
Q How old is tree number 1?

Q How old is tree number 2?



1 ☐

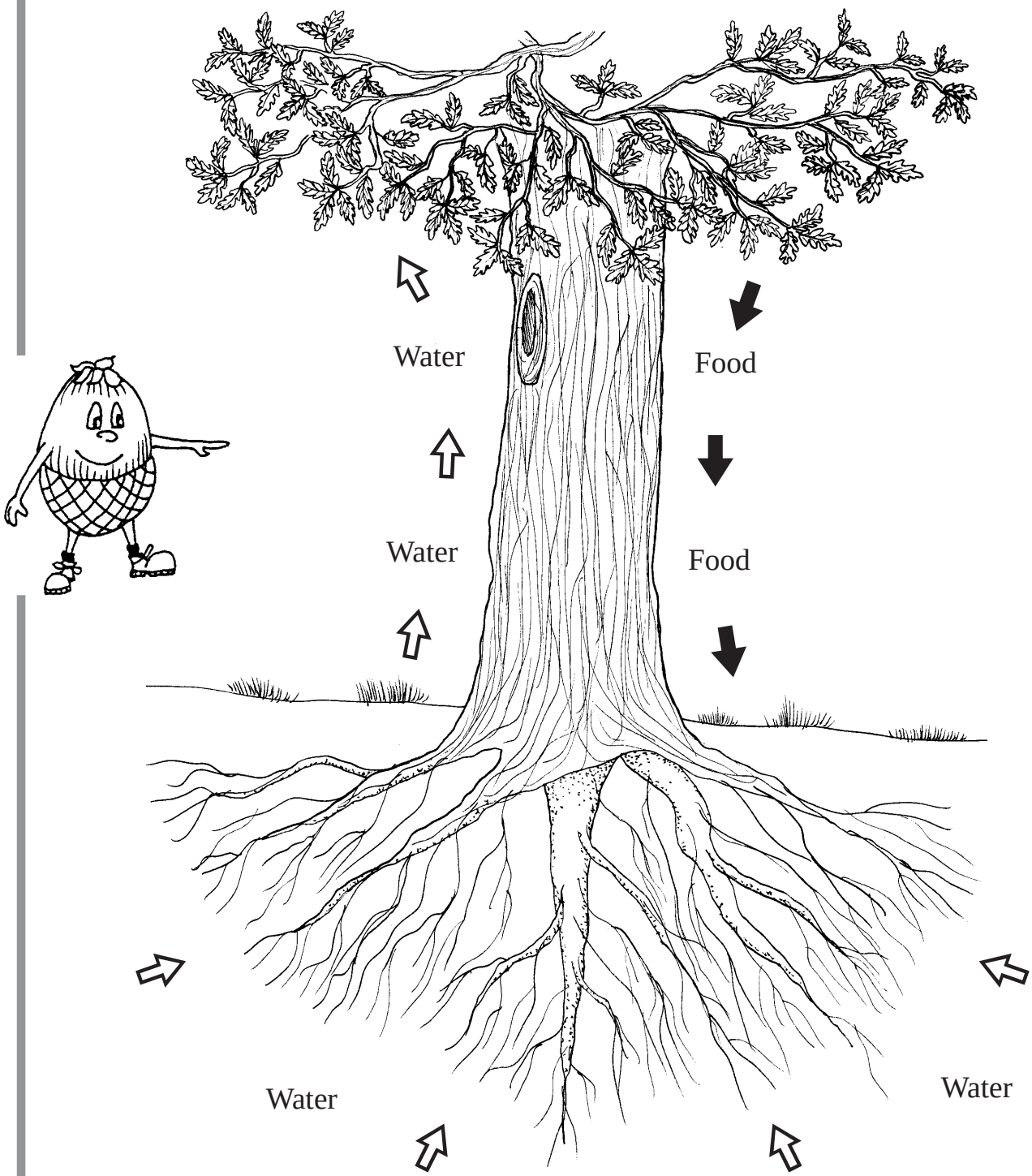




2 ☐

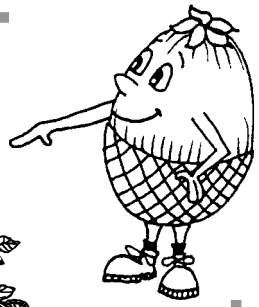
How a Tree Lives

The **leaves** of the tree make **food**. They use **sunlight** as energy for this.
Food is only made during the day.
The food moves **down** the tree through the bark to the roots.



Like all plants, trees need **water** to live. Water is taken from the soil by the **roots**.
It moves **up** the tree to the leaves through the wood of the trunk.

Light and Water



This experiment shows that plants need light and water.

What you need

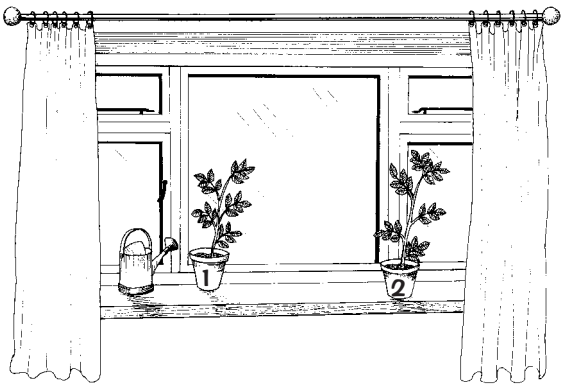
Four healthy plants, for example busy lizzies or potatoes

A black plastic bag

Label the plants 1, 2, 3 and 4.

What you do

- ✶ Leave Plant 1 on a window sill where it will get light. Water it whenever it needs it.
- ✶ Place Plant 2 on the window sill beside plant 1. Do not water it at all.
- ✶ Water Plant 3 well. Then put it in the black plastic bag. Seal the bag tightly.
- ✶ Leave Plants 1, 2 and 3 for three weeks.



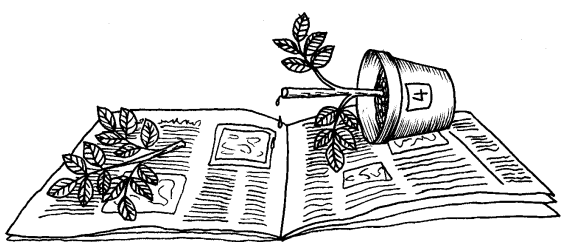
- ✶ Use Plant 4 to show that water moves up the plant from the roots to the leaves.
- ✶ Cut the top off Plant 4. Lie the pot on its side over newspaper.

What happens to the part that has been cut off?

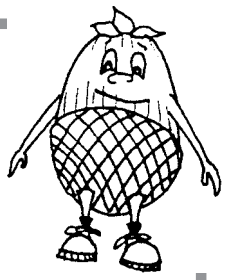
_____

Is there moisture coming out of it?

_____



Light and Water

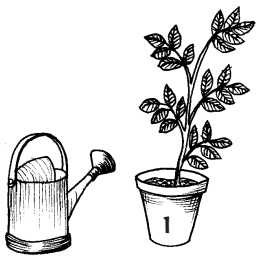


After three weeks, look at Plants 1, 2 and 3.

Place a tick (✔) on the chart to show the condition of each plant.

	Healthy	Yellow	Dying	Dead
Plant 1				
Plant 2				
Plant 3				

Can you explain...



What happened to Plant 1?

_____

Why? _____

What happened to Plant 2?

_____

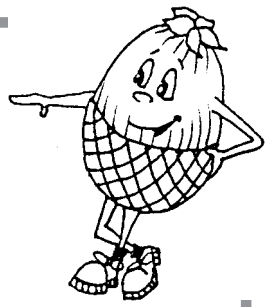
Why? _____

What happened to Plant 3?

_____

Why? _____

Types of Trees



Some trees lose their leaves every autumn.

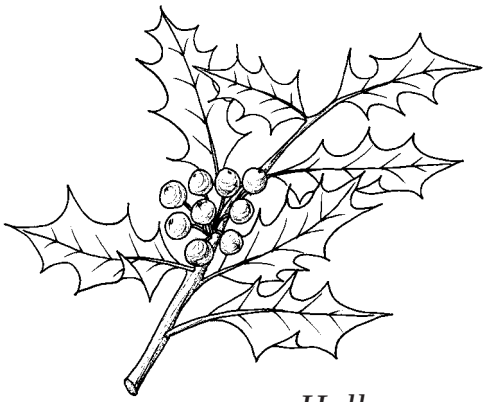
The leaves change colour before they fall off the tree.

A tree that loses its leaves every autumn is a **deciduous** tree.

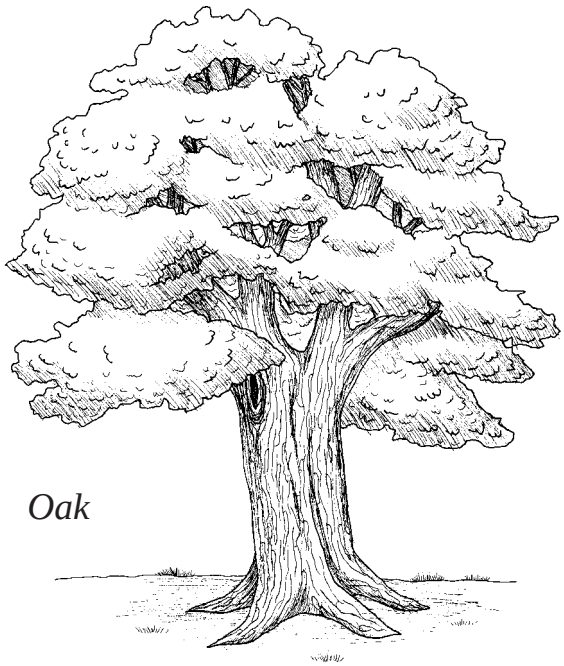
In September and October, it is easy to recognise deciduous trees.

Some trees, such as the holly and the yew, have green leaves all year round.

These are **evergreen** trees.



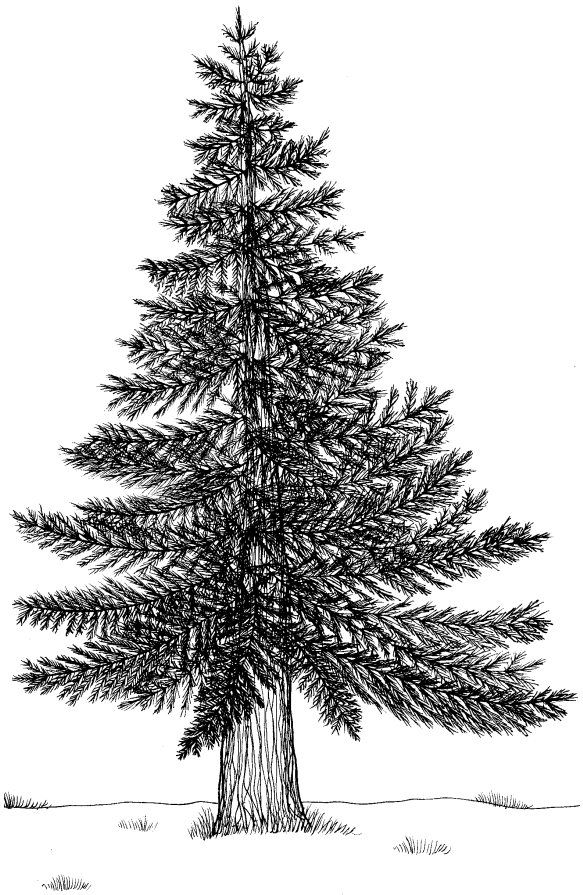
Holly



Oak

Some evergreen trees have small needle-like leaves and cones.

These are **conifers**.



Spruce

Types of Trees

To Do

Choose a **deciduous** tree in your school grounds, or near your school.

Ash

Oak

Birch

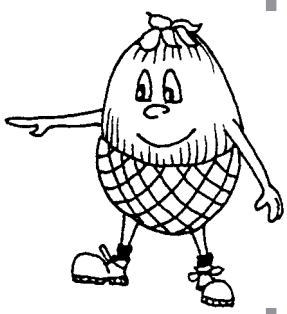
What is the name of the tree? _____

In autumn, you can observe the **leaves** and **fruits**.
In winter, you can observe **bark**, **twigs** and **buds**.
In spring/early summer, you can observe **new leaves** and **flowers**.
These may be in the form of **catkins**, depending on the species.

This is a leaf from an **evergreen** tree.

What tree is it from?

_____



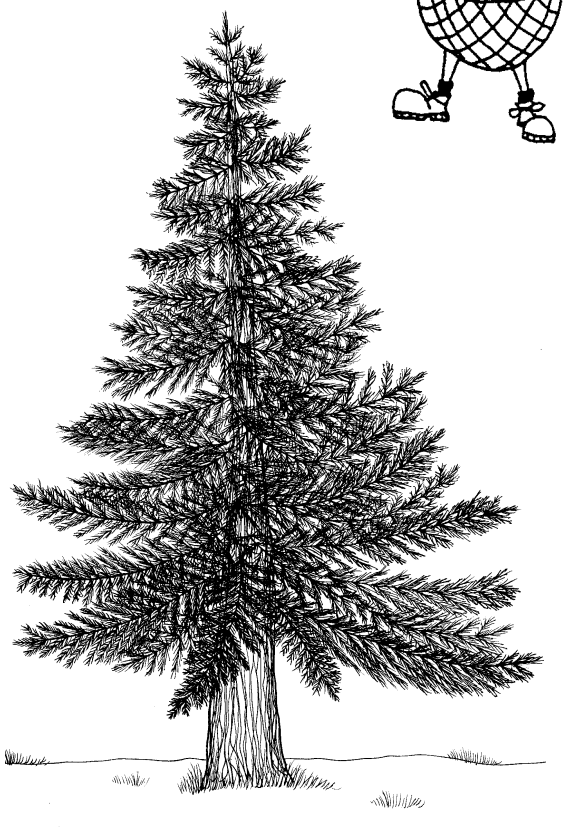
Conifers

These are very common in cold countries where there is a lot of snow in winter.

The trees are shaped like this so that a heavy fall of snow does not break the branches.

Name a country in Northern Europe with a cold climate where these trees grow.

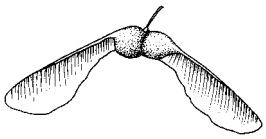
_____



Spruce

Seeds

How new trees grow



Sycamore seed

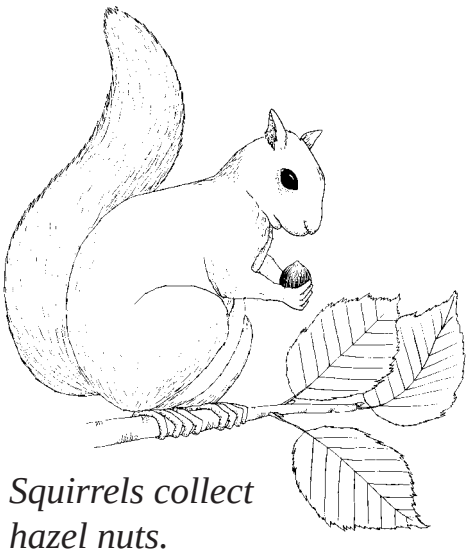
Ash seed

Pine seeds

Trees grow from seeds. They need light and space to grow, so they must get away from under the parent tree.

This happens in two ways in the natural environment.

- **The wind** blows the seeds away from the parent tree. These seeds have wings to help them fly.
- **Animals and birds** take the seeds away from the parent tree. They collect the seeds to eat but sometimes they don't eat them all. The ones that are left may grow into new trees.

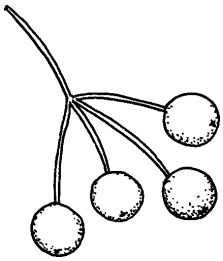


Squirrels collect hazel nuts.

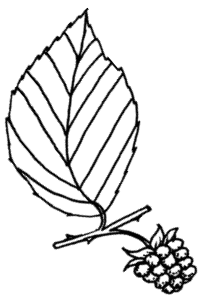
Jays collect acorns.

Mice collect beech nuts and chestnuts.

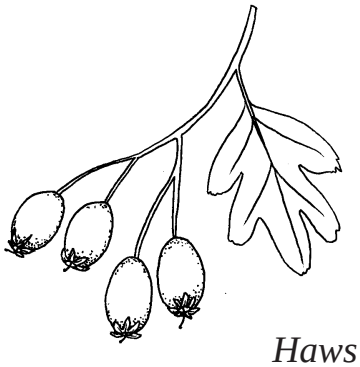
Some seeds must be eaten before they can grow. These are the very hard seeds in the centre of a juicy fruit such as elder, blackberries and haws.



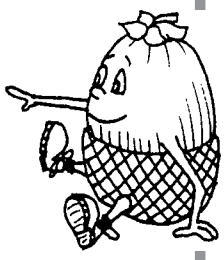
Elderberries



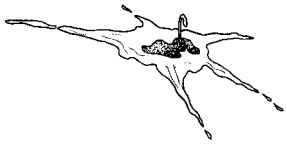
Blackberry



Haws



These hard seeds are not digested when the bird eats the fruit. The seed grows from the bird's droppings.



Field Trip

Go out in September or early October to look at trees and to collect seeds.

Choose a tree to study. Look at the tree.

Q Is it deciduous or evergreen tree? _____

Q How do you know?

_____

Q Name the tree _____

Q What colour are the leaves? _____

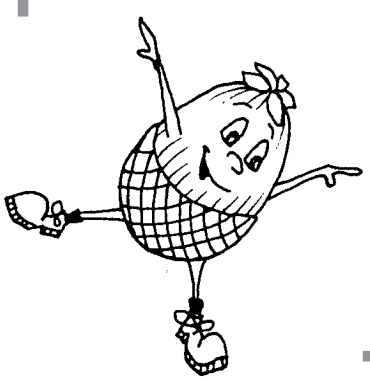
Q Are the leaves…

Broad? ☐

Narrow? ☐

Stand away from the tree.

Sketch the shape of the tree in this space.



Field Trip

Q Is this tree a good shape for a heavy coat of snow? _____

Why? _____

Q Has the tree seeds? Yes ☐ No ☐

Describe the seeds. (Colour, shape, size, hard / soft)

Colour _____

Shape _____

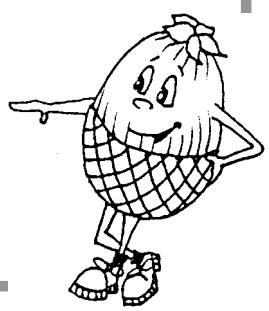
Size _____

Are they… hard? ☐ soft? ☐

Q How do you think the seeds are scattered from the tree?

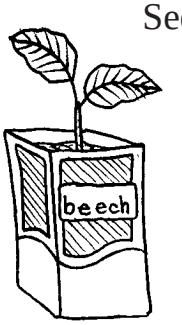
By wind. ☐ By wildlife. ☐

Take some seeds back to class afterwards and plant them..



Growing Trees

Trees grow from seeds.



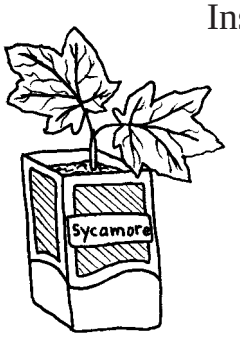
Seeds are formed by a tree in autumn.

Seeds develop from **flowers**.

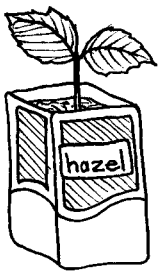
Seeds do not grow as soon as they reach a piece of clear ground away from their parent tree.

If they did, the cold weather in winter would kill the new little tree.

Instead, seeds start to grow in spring.



This is called **germination**.



The seeds from oak, beech, horse chestnut, sycamore and hazel begin to grow the spring <u>after</u> they were formed.

Some seeds need <u>two</u> winters in the ground before they will grow. Holly and ash trees have seeds like this.

Sowing a seed

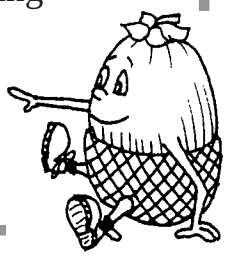
Q What is the name of the seed you are going to sow? _____

Q Is it a seed that is carried away for food, or is it carried away by the wind?

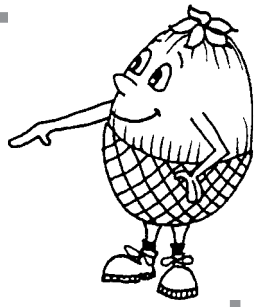
Food ☐ Carried by wind ☐

Q Will it germinate (begin to grow) the **first** spring or the **second** spring after it was formed by the parent tree?

First Spring ☐ Second Spring ☐



Planting a Seed



Some seeds will germinate the **first** spring after they were formed.

What you need

seeds (oak, chestnut, beech, sycamore, hazel)

a flower pot or clean milk carton

horticultural sand

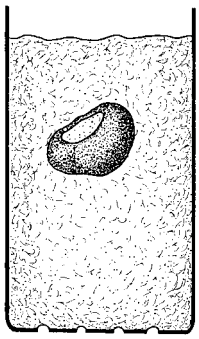
potting compost (preferably peat-free to save our bogs)

clear plastic to cover the pot

a label

What you do

- ✶ Wash the milk container well and open it out fully.
- ✶ Make five or six holes in the bottom of it with a pencil. The holes are for drainage.



- ✶ Put 3 cm of horticultural sand in the container.
- ✶ Fill it to the top with potting compost.
- ✶ Mix well.
- ✶ Insert a seed in the compost to its own depth.
- ✶ Moisten the compost with a little water.
- ✶ Label the container with your name, the name of the seed and the date.

Leave the container on a cold north-facing window sill in the classroom or leave it outside in a sheltered place.

Cover it with clear plastic if you leave it outside. This will keep the compost moist and stop mice from eating your seed.

Take your container into the classroom in spring when the seed begins to grow. Leave it on the window sill where it will get light.

Planting a Seed

Some seeds that will not germinate until the **second** spring after they were formed.

What you need

seeds (holly, ash, rowan) It is a good idea to have a handful of seeds.

a flower pot or clean milk carton

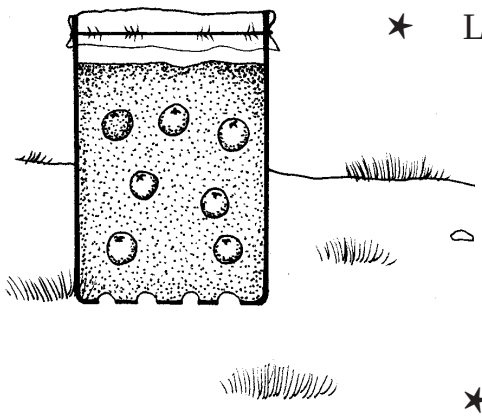
horticultural sand

clear plastic to cover the pot

a label

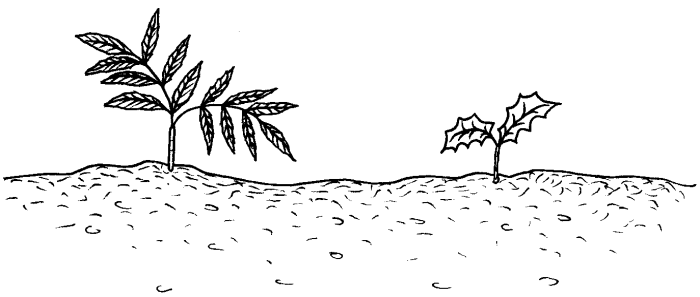
What you do

- ✶ Mix the seeds with 4 times their volume of sand.
- ✶ Put the mixture into the flower pot or carton.
- ✶ Cover the pot with clear plastic.
- ✶ Label the pot with your name, the name of the seeds and the date.
- ✶ Leave it outside where it will get frost.



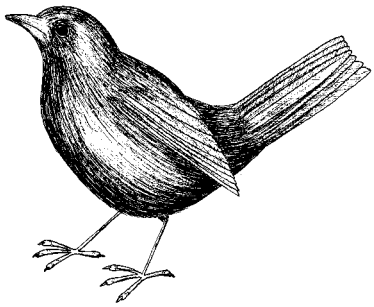
(The seeds will not germinate if they do not get frost.)

- ✶ In March, or when the ground is not too hard, bury the whole pot in the ground so that it won't dry out.
- ✶ Mark the spot where you buried it.
- ✶ Dig it up the following spring and the seedlings are ready for sowing.



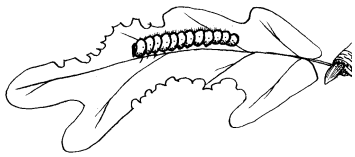
Trees and Wildlife

Birds, animals and insects use trees for three reasons.

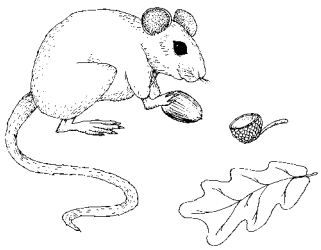


- They can find their **food** there.
- They can have their **homes** there.
- They can **rest and sleep** there.

All parts of the tree are used in these ways.



Food



The leaves, fruits and seeds of a tree are food for caterpillars, greenflies, squirrels, blackbirds and mice.

Caterpillars eat green ___ ___ ___ ___ ___ ___ .

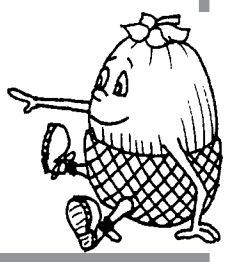
Squirrels eat ___ ___ ___ ___ ___ ___ ___ ___ ___ .

Greenflies suck ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

Mice eat ___ ___ ___ ___ ___ ___ which they find under the tree.

Red ___ ___ ___ ___ ___ ___ ___ are food for blackbirds.

Creatures that feed on parts of a tree are called **herbivores**.



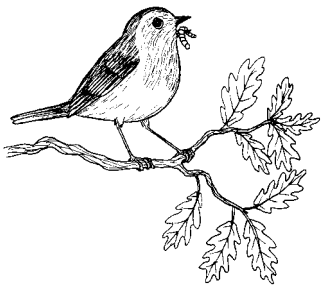
Word Bank

hazel nuts leaves
acorns berries
leaf juices

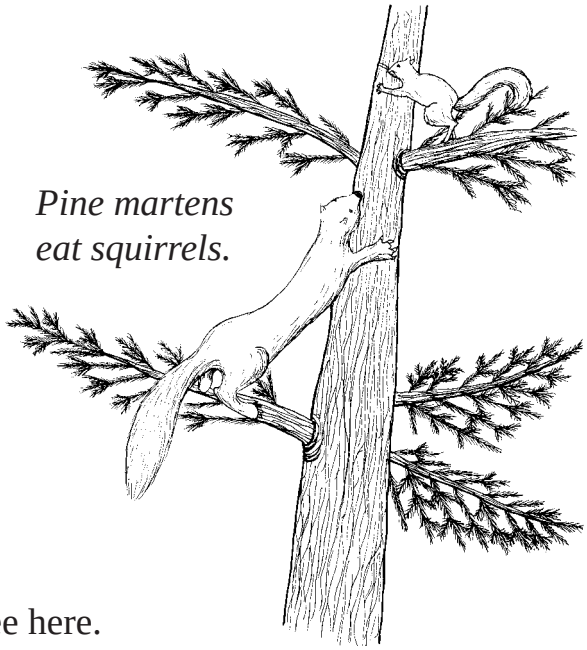
Trees and Wildlife

Some birds, animals and other wildlife come to trees to eat the herbivores.

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



Robins eat caterpillars.



Pine martens eat squirrels.

Make a list of all the carnivores you can see here.

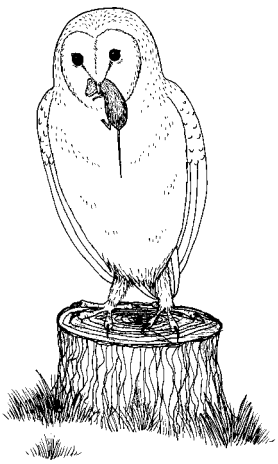
1 _____

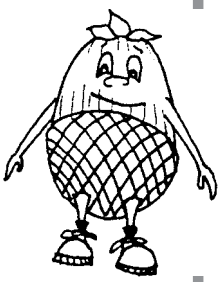
2 _____

3 _____

4 _____

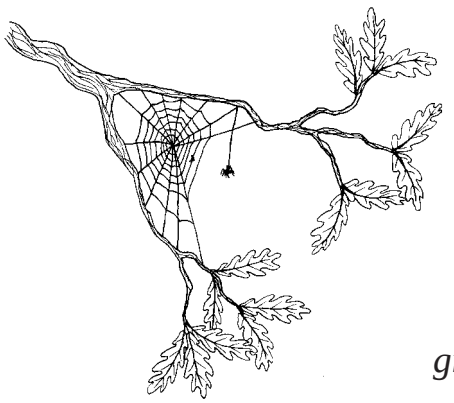
5 _____



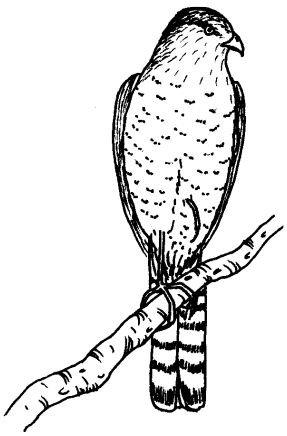


Owls eat mice.

Carnivores are animals that eat other animals.



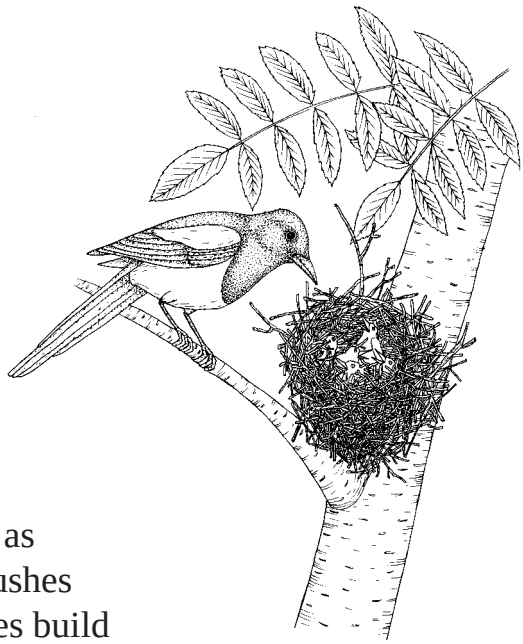
Spiders eat greenflies.



Sparrowhawks eat blackbirds.

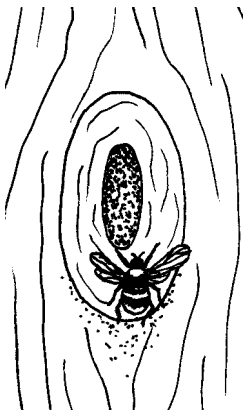
Trees and Wildlife

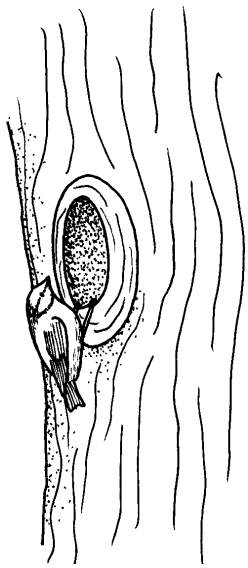
Homes



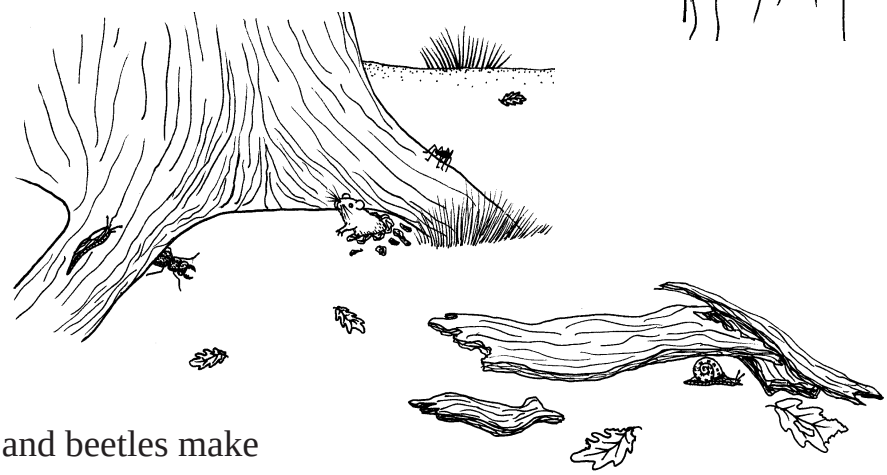
Birds such as robins, thrushes and magpies build nests in trees.

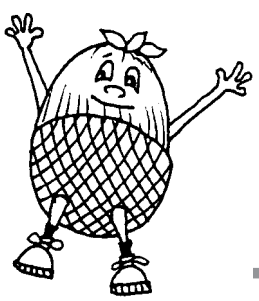
Blue tits, bumble bees and bats live in holes in the trunk.





Slugs and spiders live in cracks in the bark.





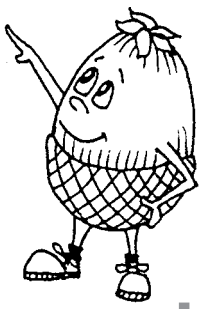
Mice and beetles make burrows under the roots.

Trees and Wildlife

Resting and Sleeping

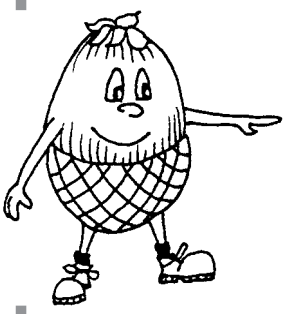
Rooks and starlings crowd together in flocks on the branches of trees to keep warm in winter.

Pigeons sleep in trees at night and go off to fields to feed during the day.



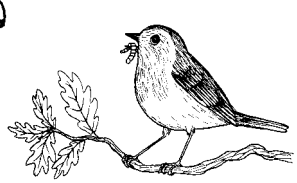
Snails rest under the bark of the tree during the day. They feed on plants and grasses on the ground at night.

Food Chains



Fill in the links in following food chains.

Then make your own food chain. Remember that humans are part of a food chain.



Owl

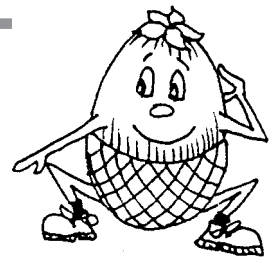
Caterpillar

Oak Leaf

Blackbird

Blackberry

Trees and People



Timber

Timber from trees is used to make furniture.

List four things in your classroom made from timber.

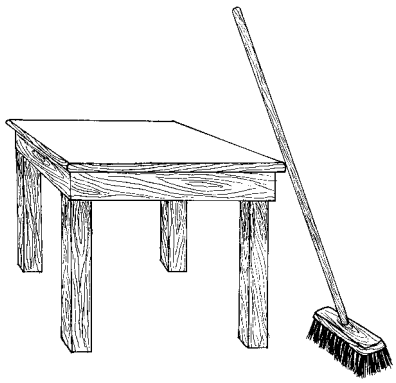
1 _____

2 _____

3 _____

4 _____

Draw one of these things in the space.



List four things in your home made from timber.

1 _____

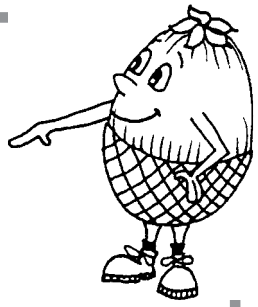
2 _____

3 _____

4 _____

Draw one of these things in the space.

Trees and People



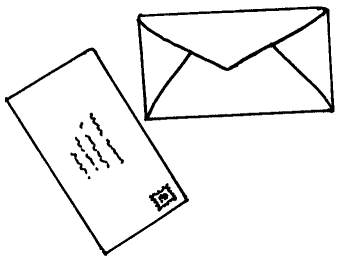
Paper, Cardboard, Rubber

Timber can be pulped and made into paper and cardboard.

Name two things made from paper.

1 _____

2 _____



Name two things made from cardboard.

1 _____

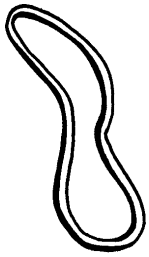
2 _____

Rubber is made from the juice or **sap** of the rubber tree which grows in tropical countries. When this hardens, it becomes waterproof.

Name two things made from rubber.

1 _____

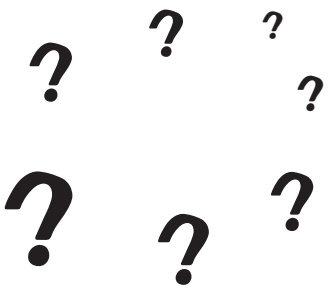
2 _____



Turpentine and **maple syrup** are also the juices or sap of trees.

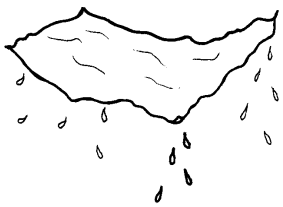
Trees and People

Do you know...



or can you find out?

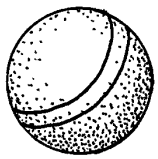
Q What happens to paper when it gets wet?



_____

_____

Q What happens to a rubber ball when it is dropped?



_____

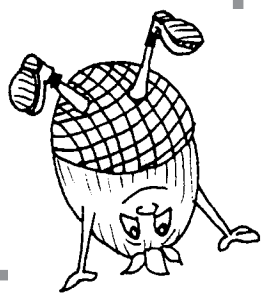
_____

Q What happens to timber when it is left outside in the rain for long time?

_____

_____

Q Why do we paint wooden windows?

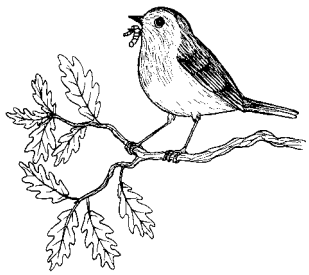


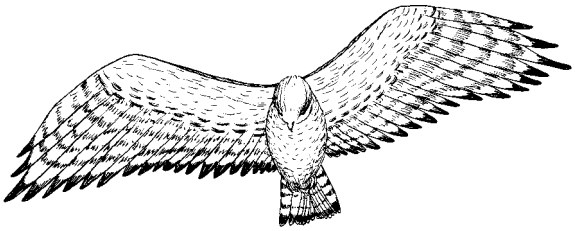
_____

_____

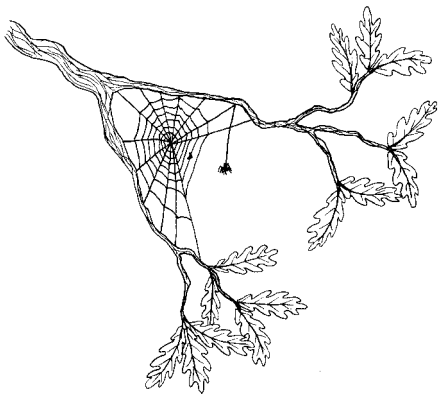
Word Search

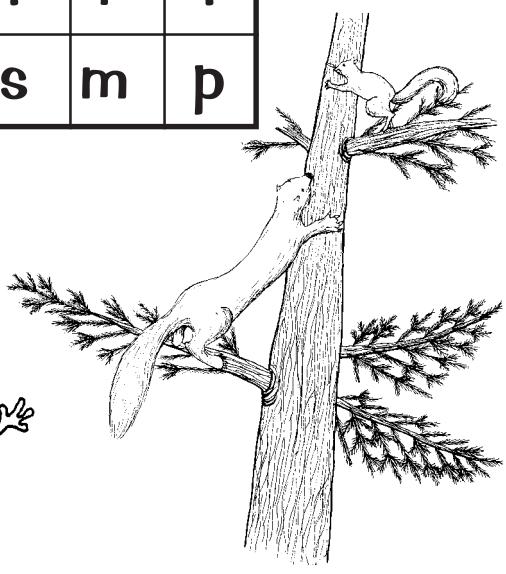
Find ten **carnivores** in this word search.

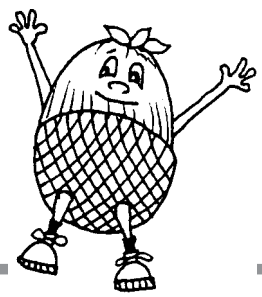




b	l	r	o	b	i	n	d	k	h
a	a	k	f	o	x	x	e	e	e
t	b	d	f	w	a	o	k	s	d
s	n	a	g	e	r	w	x	t	g
n	a	i	s	e	a	l	s	r	e
a	b	a	d	g	e	m	v	e	h
i	g	i	h	o	s	h	o	l	o
l	p	n	p	y	n	e	a	o	g
s	p	i	g	e	r	a	t	i	t
b	l	u	e	t	i	t	s	m	p

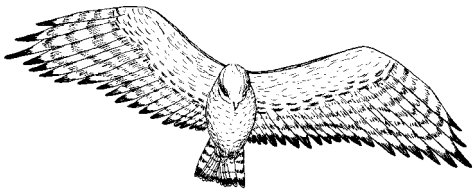


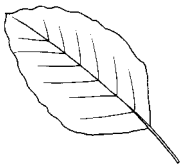


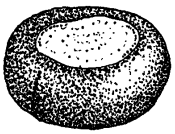


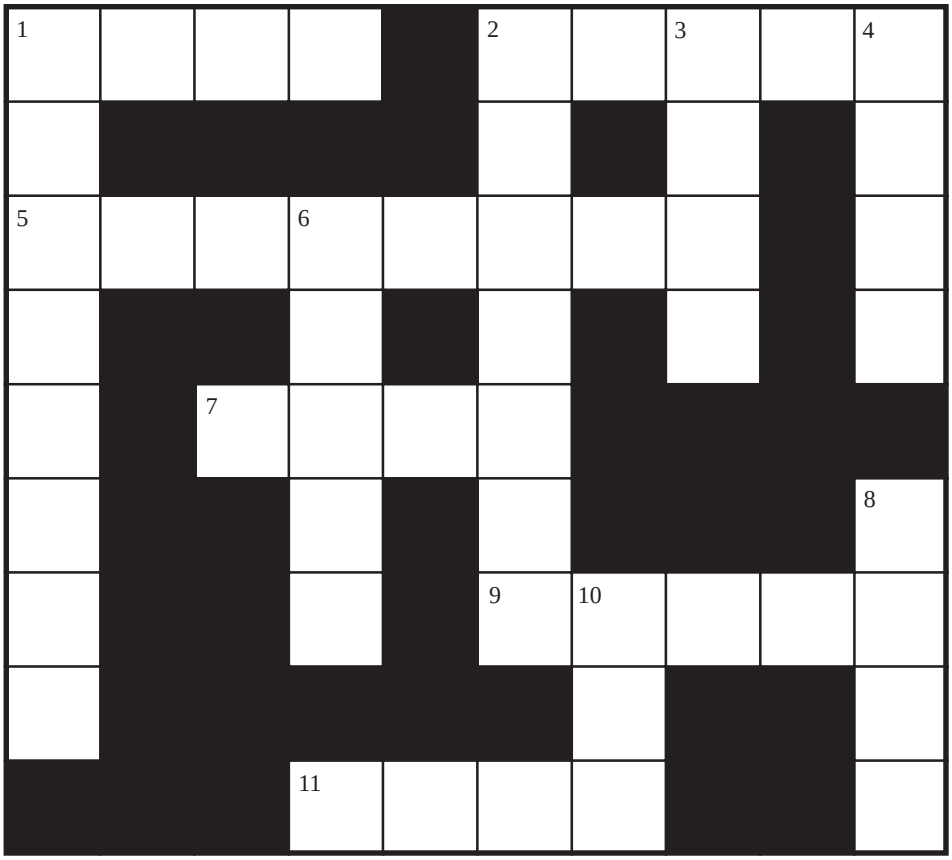
Crossword

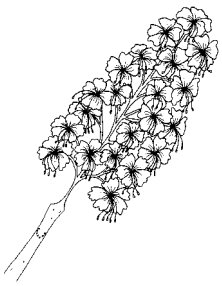
Test your knowledge!





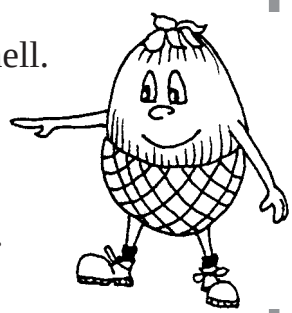






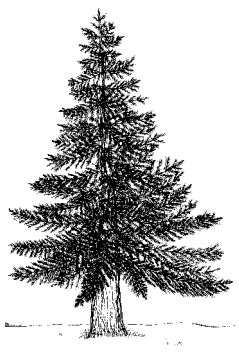
Across

1 A member of the snail family without a shell.
2 These are found on conifer trees.
5 Conkers are the seeds of this tree.
7 This changes colour and falls in autumn.
9 This bird eats spiders and has a red breast.
11 This bird is a carnivore.



Down

1 The seeds of this tree are known as helicopters.
2 This tree is Δ shaped to withstand being covered with snow.
3 Squirrels eat many of these.
4 The fruit of the blackthorn is called a _ _ _ _ .
6 All new trees grow from these.
8 They sting and they live together in colonies in the ground.
10 An acorn grows into this.



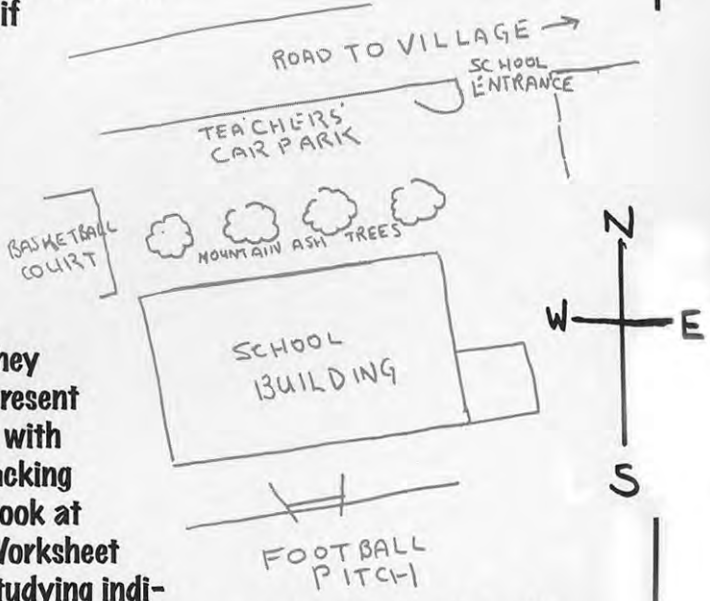
THE TREES AROUND US
A Tree Survey

This survey is to find out what trees are growing around the school and to mark them on a map.

First the class will need a map of the area to be studied. A compass and a tape will be needed.

Maps are drawn with north pointing to the top of the page so the mapping team must have the correct orientation. The easiest way to map the school ground is to pace it, so the length of the pace of the measurer must be measured with the tape. Then starting at the south west corner the length of the western boundary should be measured. This length will be the left hand side of the page. The northern, eastern and southern boundaries should likewise be stepped out. The orientation of the mapping page may need to be adjusted if the boundaries are not squarely following these directions.

When the school grounds have been drawn the school buildings can be marked on the map. Mark in playing areas and football pitches as well, and areas where there are flowerbeds, and car parking space. It is then time to walk around and mark the position of each tree and boundary hedge on the map. Trees should be marked with circles and numbers. The identification of each tree can be done later and added to the map as a legend. From this it will be easy to say if there are many trees in the school grounds or if more would give a better environmental quality. It should be possible to plan where new trees could be planted. It may be that the whole area is under concrete and so consideration should be given to small trees in pots.



As a result of this survey pupils' awareness of the trees in their school grounds will be raised. They will also learn about the variety of tree species present and over their school years can become familiar with all of them. It will also be obvious if the area is lacking in trees or has a poor variety of species. Take a look at Module 3, Worksheets 8 and 9 and Module 5, Worksheet 35 of the Tree Day Pack for further details on studying individual trees. The Teachers Notes section also has a number of suggested activities that will help your class become more familiar with trees.

Trees are essential for wildlife, particularly birds and insects. Pupils should be encouraged to say whether their school grounds are good or poor for wildlife, and be encouraged to plan to make good any lack.