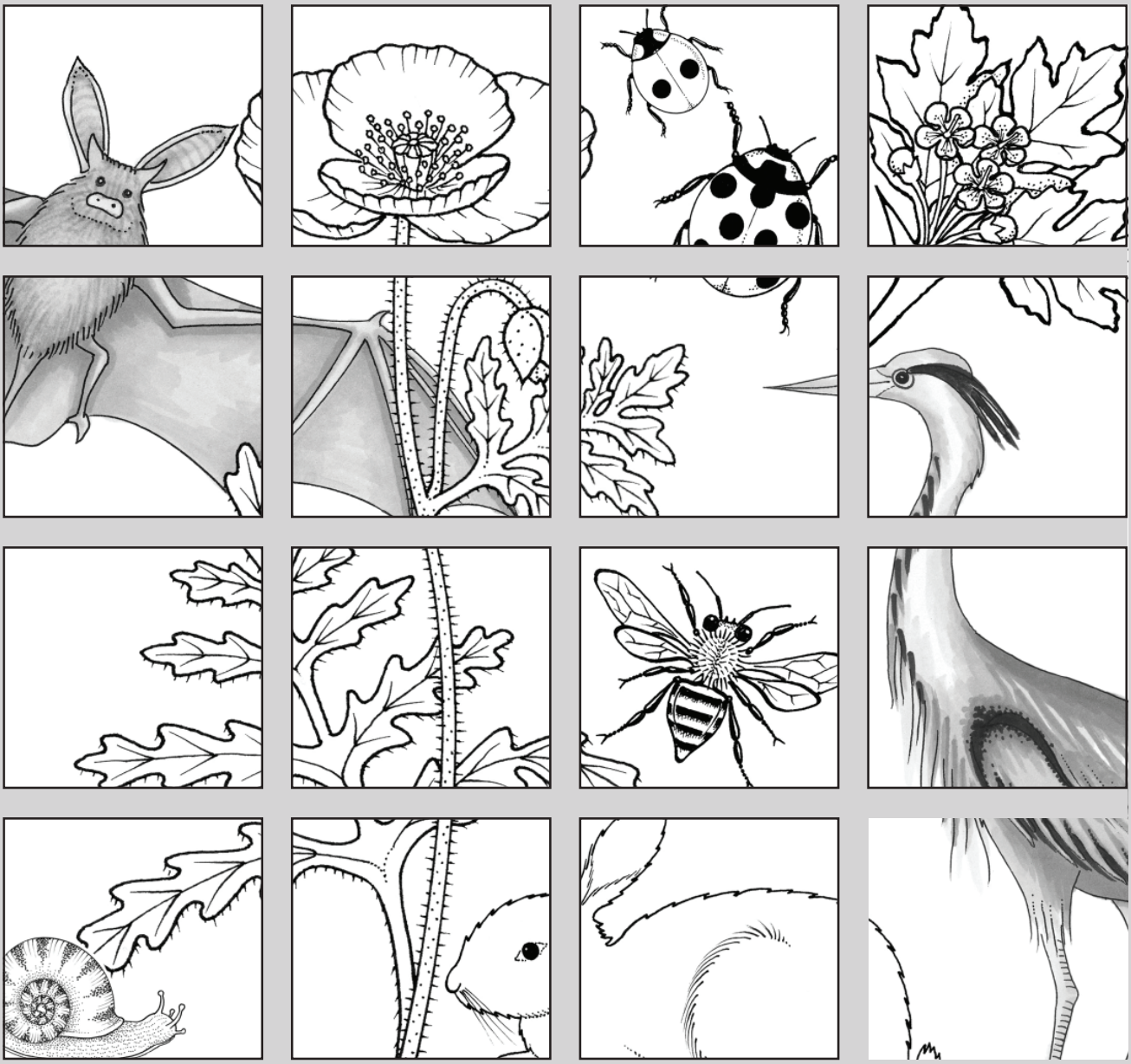
Wild Things at School

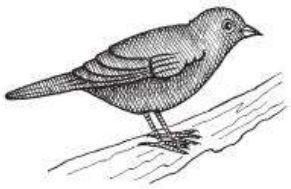
Worksheets for Primary School Students



by

Éanna Ní Lamhna

Illustrations *by* Christine Warner



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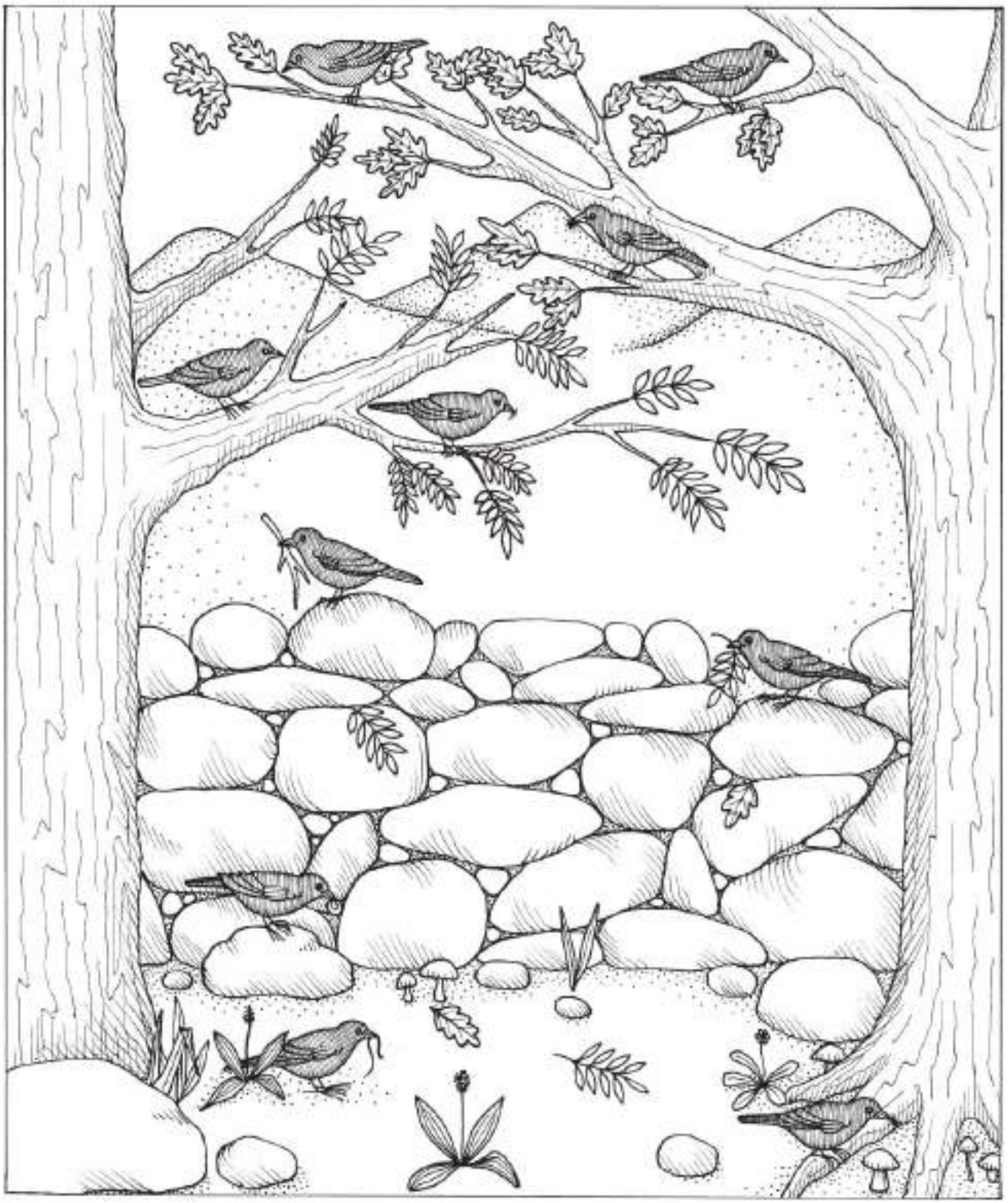

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Worksheets

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Éanna Ní Lamhna

Illustrations *by* Christine Warner

Graphic design *by* Bogfire

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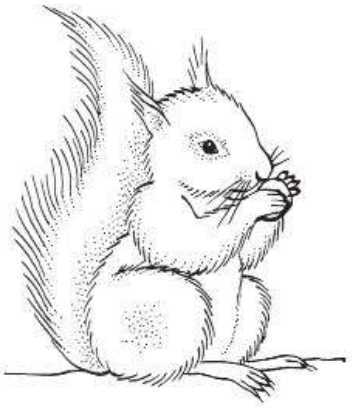

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Graphic design by Connie Scanlon and James Fraher, Bogfire. www.bogfire.com

This publication has been supported by the Heritage Council.

An Chomhairle Oidhreachta
The Heritage Council

Acknowledgements

The *Wild Things at School* series has been developed to help engage primary school children and teachers with nature. The original publication, *Wild Things at School,* a book for primary school teachers has been positively received by teachers all over Ireland and has proved to be a valuable teaching resource. This new publication of *Wild Things Worksheets* is designed to accompany the teacher's book providing material for use in the classroom. Exercises are divided into class groups, from the simplest counting for junior infants to stimulating debates and field studies for the older children.

The exercises have been created and developed by wildlife expert Éanna Ní Lamhna, who has many years experience visiting schools all over Ireland. Christine Warner's beautiful illustrations were specially commissioned to enhance the learning experience on every page. Photographs of all the wild things are included on a DVD along with the worksheets and original teacher's book. The worksheets are available in Irish and are also on the DVD.

This publication is funded by the Heritage Council Heritage Plan fund, Monaghan County Council Heritage Office and Meath County Council Heritage Office.

The publication design is by Connie Scanlon and James Fraher at Bogfire. Proof reading was undertaken by Graham Smith of Wordsmith. Irish translation of the worksheets is by Máire Mhic Thaidhg. Pronsias Ó Donnghaile proofread the Irish version. Photographs are mainly from Eric Dempsey and Shirley Clerkin.

I hope that the production of these worksheets will assist teachers to deliver the *Wild Things* programme. Enormous thanks goes to those who have been involved with this project, particularly Eanna and Christine whose creative partnership has resulted in a fantastic teaching resource. It has been a labour of love for us all; a love for nature that we genuinely wish to pass on to its future custodians.

We wish you luck with the *Wild Things* programme.

Shirley Clerkin
Heritage Officer
Monaghan County Council
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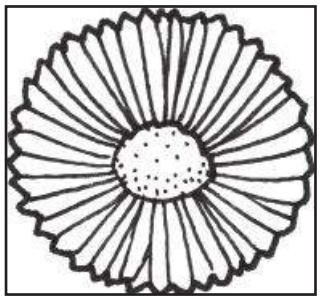
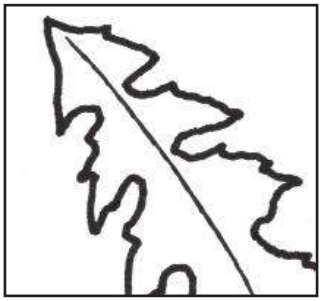
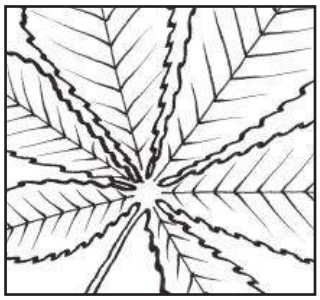
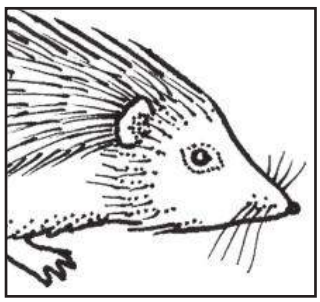
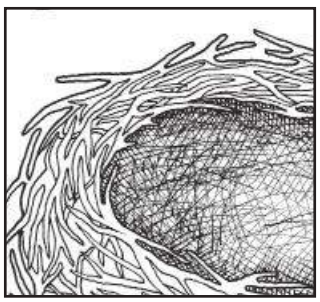
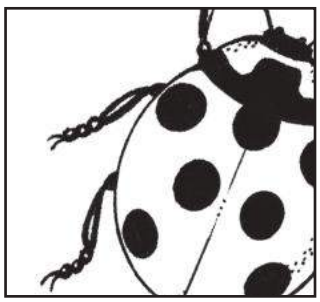
In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the children themselves after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher who should also show the pictures of each species provided.

Worksheets are given in the same order as the species in the handbook, although this is not necessarily the order in which they should be taught. Flowers can be found in September and more easily in May and June, for instance, while the horse chestnut has leaves in September and conkers and then the branches are bare until late March. These things need to be taken into consideration. There are two worksheets for each topic – twelve in all – and they are designed to be photocopied and handed out to the pupils.

Junior Infants Teacher Notes

Daisy 1

Worksheet in three sections

Writing practice:
Pupils practise writing the letter 'd'.
d d d d d d d

Counting practice:
Pupils count the number of daisies and write the total in the boxes.

Classification:
Pupils identify the daisies from a group of flowers and colour them in.

Daisy 2

Worksheet in three sections
(Do this when daisies are in flower.)

Identification and counting:
Pupils identify and count the daisies in a picture which also contains dandelions. The picture can then be coloured in.

Fieldwork outdoors and manual dexterity:
Pupils find daisies growing outside on school lawn. Each child collects two and sticks them in to the spaces provided.

Writing practice:
Write the word daisy over the letters in pale grey daisy.

Dandelion 1

Worksheet in three sections

Counting and recognising letters:
How many letters **d** in **dandelion**
How many letters **n** in **dandelion**

Counting and following instructions:
Pupils colour two dandelions (out of a line-up of 4 dandelions).

Recognising images:
Pupils find the dandelion in a line-up of flowers.

Dandelion 2

Worksheet in three sections

Fieldwork outdoors and manual dexterity:
Pupils find a dandelion leaf outdoors and stick it in the designated space.

Counting and classifying:
Pupils identify and count the dandelions in a picture which also contains daisies.

Observation skills:
Pupils find the odd one out in a line-up of dandelions where one is slightly different.

Horse Chestnut 1

Worksheet in three sections

Recognition and colouring:
Pupils colour in the chestnut leaf and the conker in its prickly shell.

Manual dexterity, make-and-do:
Pupils colour in the drawn leaf and then cut it out. Teacher can make a "tree" in class and stick on the leaves. If this is done in autumn some of the leaves can be coloured brown.

Horse Chestnut 2

Worksheet in three sections

Recognition:
Pupils find and colour in the chestnut leaf (from an array of three different leaves drawn).

Fieldwork and dexterity:
Find a chestnut leaf and stick it to the page in the section allocated for this. Note that chestnut leaves are large compound leaves with seven leaflets. What is required here is that just one of the leaflets is stuck to the page – a whole leaf with seven leaflets would be too large.

Fieldwork:
Pupils make a bark rubbing of a chestnut trunk. They put the page against a chestnut tree and rub a crayon over the bank box – an image of the tree texture will appear in the box.

Hedgehog 1

Worksheet in three sections

Counting:
How many hedgehogs – from a line-up of four hedgehogs?

Counting, Colouring and following instructions:
Pupils colour two hedgehogs only, in a line-up of five hedgehogs.

Visual and manual skills and elementary food chain:
Pupils draw the line the hedgehog must take through the maze to get to its food.

Hedgehog 2

Worksheet in three sections

Drawing skills:
Pupils finish the drawing of a hedgehog that has been presented as an incomplete drawing. They must then add the spines themselves.

Classification and association skills:
Lead the hedgehogs to the snails. Pupils should draw lines to join one hedgehog to one snail in a picture that has a group of hedgehogs and snails.

Writing skills:
Pupils write out the word **hedgehog** over the faint grey outline.

Robin 1

Make-and-do worksheet

Manual Dexterity:
This worksheet has a drawing of a robin, eggs and a nest. Pupils are asked to colour in the robin (brown back with red breast), the eggs (white with brown spots) and the nest made from twigs and moss. They then cut out the robin and the eggs, cut a slit at the top of the nest and insert the robin so that it is sitting on the nest. The eggs can be stuck underneath.

Robin 2

Make-and-do worksheet

Manual Dexterity, colouring and writing:
This worksheet, when folded in four, forms a Christmas card. Pupils colour it in and write on the four sections, as indicated. They can colour-in the border on each page, too.

Ladybird 1

Worksheet in three sections

Counting and classification:
Pupils match the ladybirds. There are six in the drawing – three with two spots and three with seven spots. They can colour these ladybirds in red with black spots.

Counting and manual dexterity:
Pupils complete the drawing of a ladybird by joining the dots. They colour it red. Then they cut out the spots and stick them to the picture in the correct places.

Writing:
Pupils write the word **ladybird** over the pale grey outline of the word. ladybird

Ladybird 2

Worksheet in two sections with extra third option

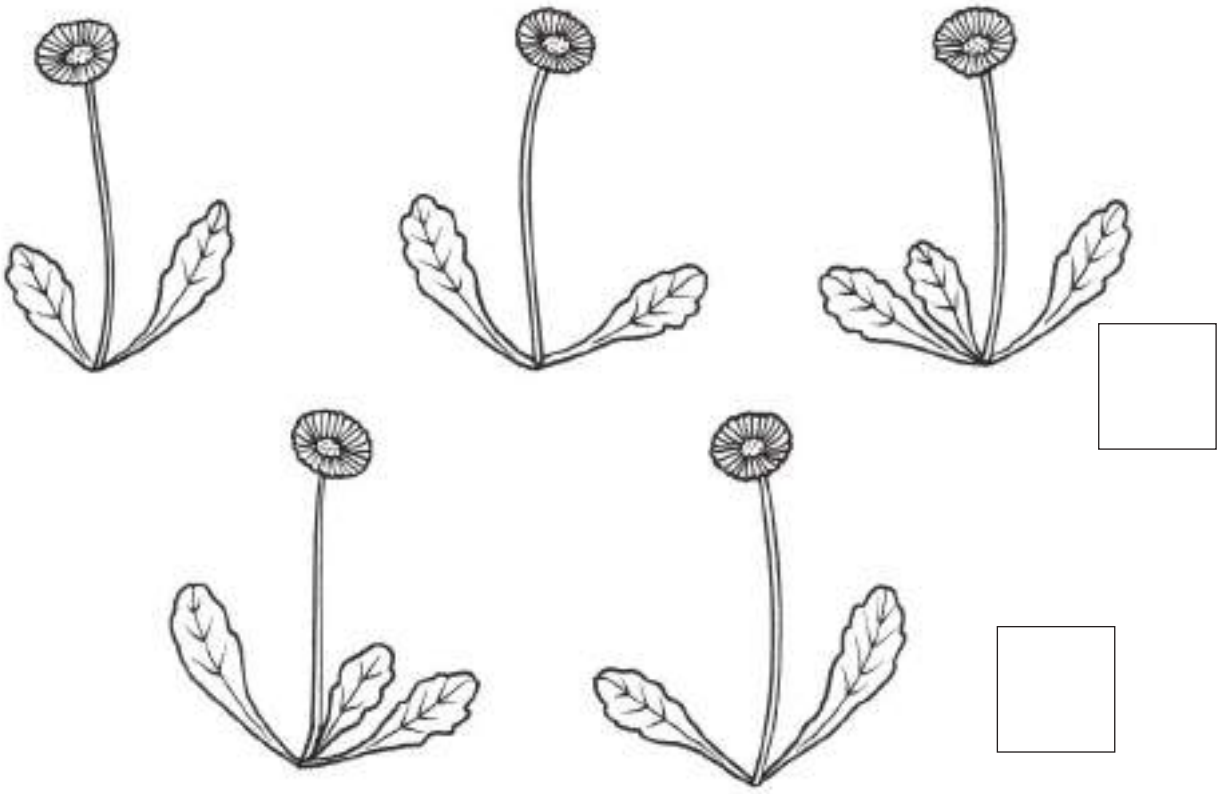
Recognition and classification:
Pupils find the ladybirds in a picture that also contains flowers, hedgehogs etc.

Counting and following directions:
Pupils colour only the two-spot ladybirds in a group of ladybirds that contain a selection of species.

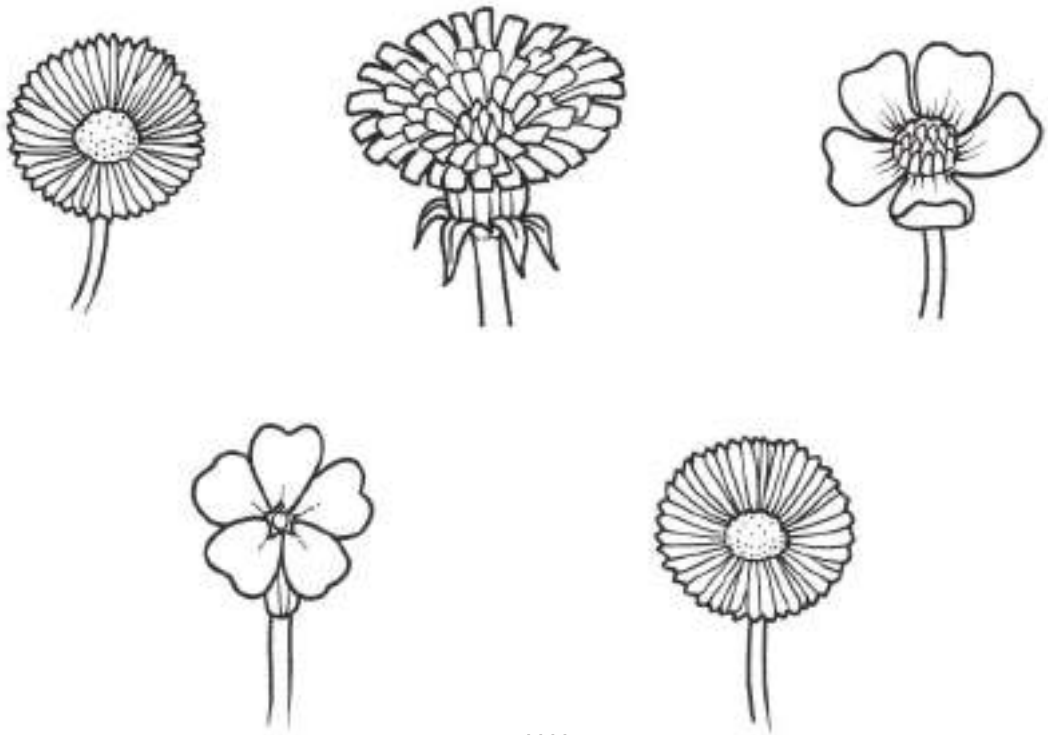
EXTRA OPTION
Accurate Drawing (on a separate blank page supplied by the teacher):
Pupils draw a picture of a ladybird in the box on the page provided – it should be an accurate 2- or 7-spot one. No ladybirds exist with 3, 4, 5, 6, 8, or 9 spots so make sure they do it scientifically correct. This is not a cartoon but a proper drawing of a ladybird to the best of their ability.

d d d

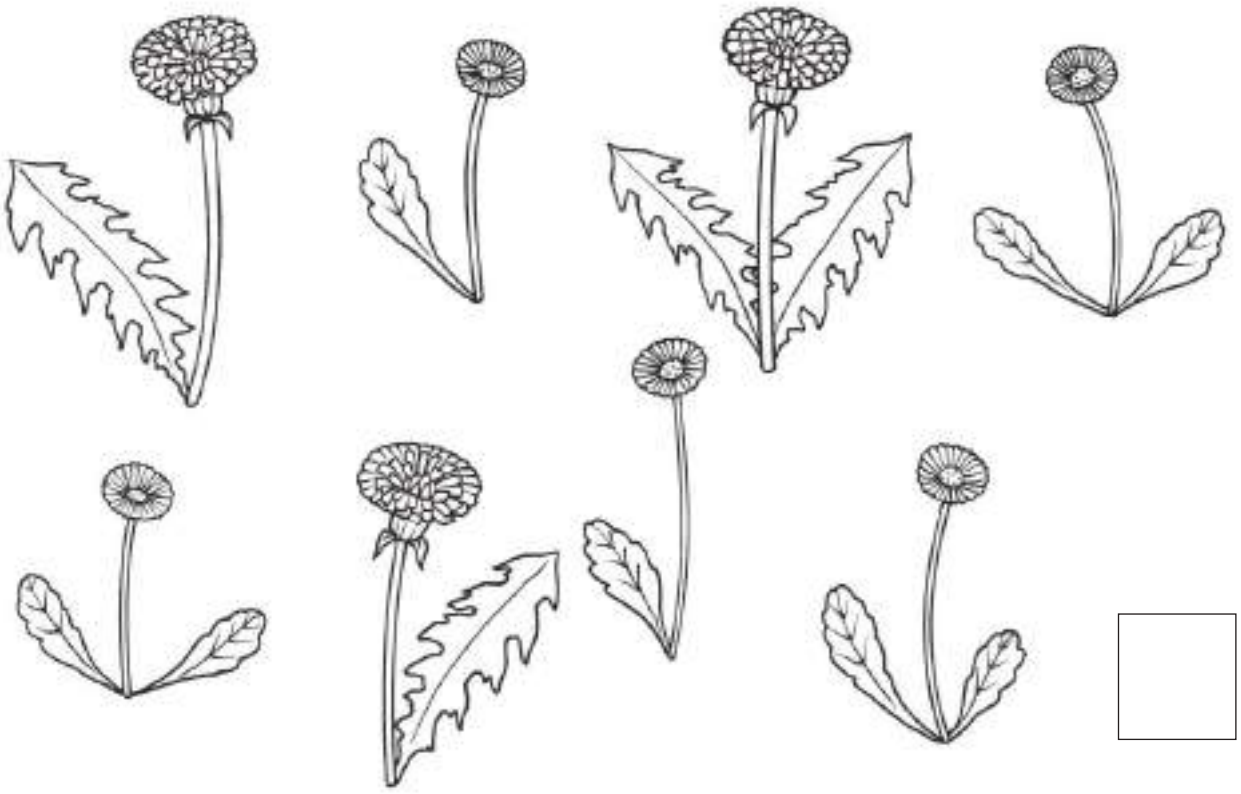
How many daisies?



Colour all the daisies.



How many daisies?



Go out and find 2 daisies and stick them to the page.

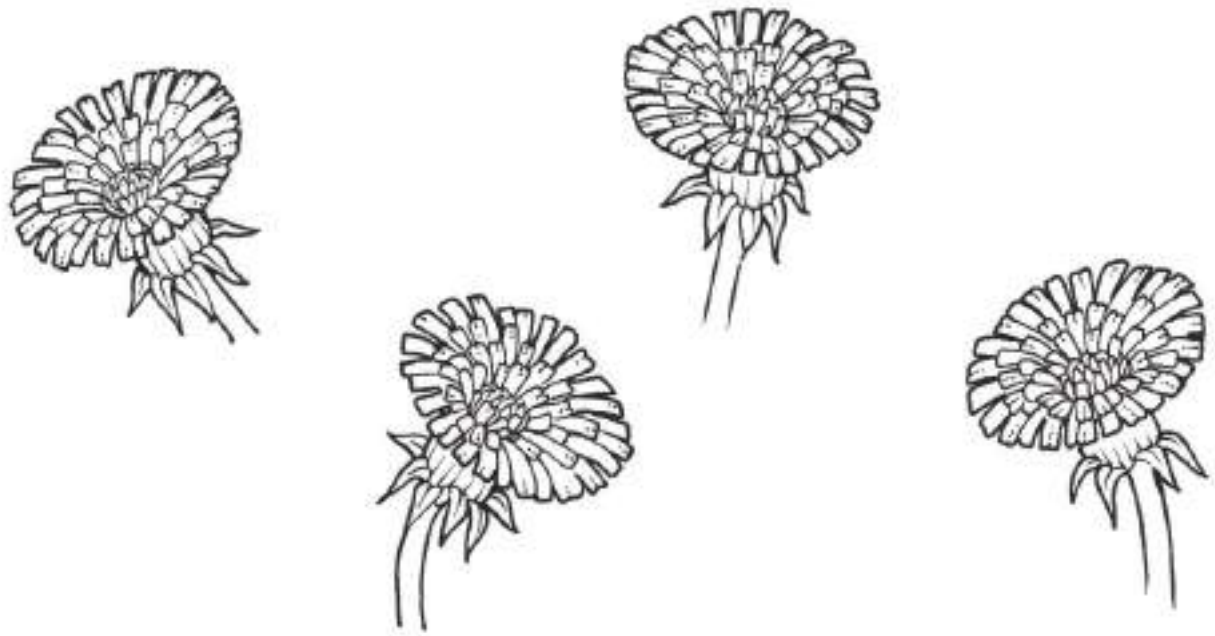
Fill in the word 'daisy'.

daisy

dandelion

How many d's? ☐ **How many n's?** ☐

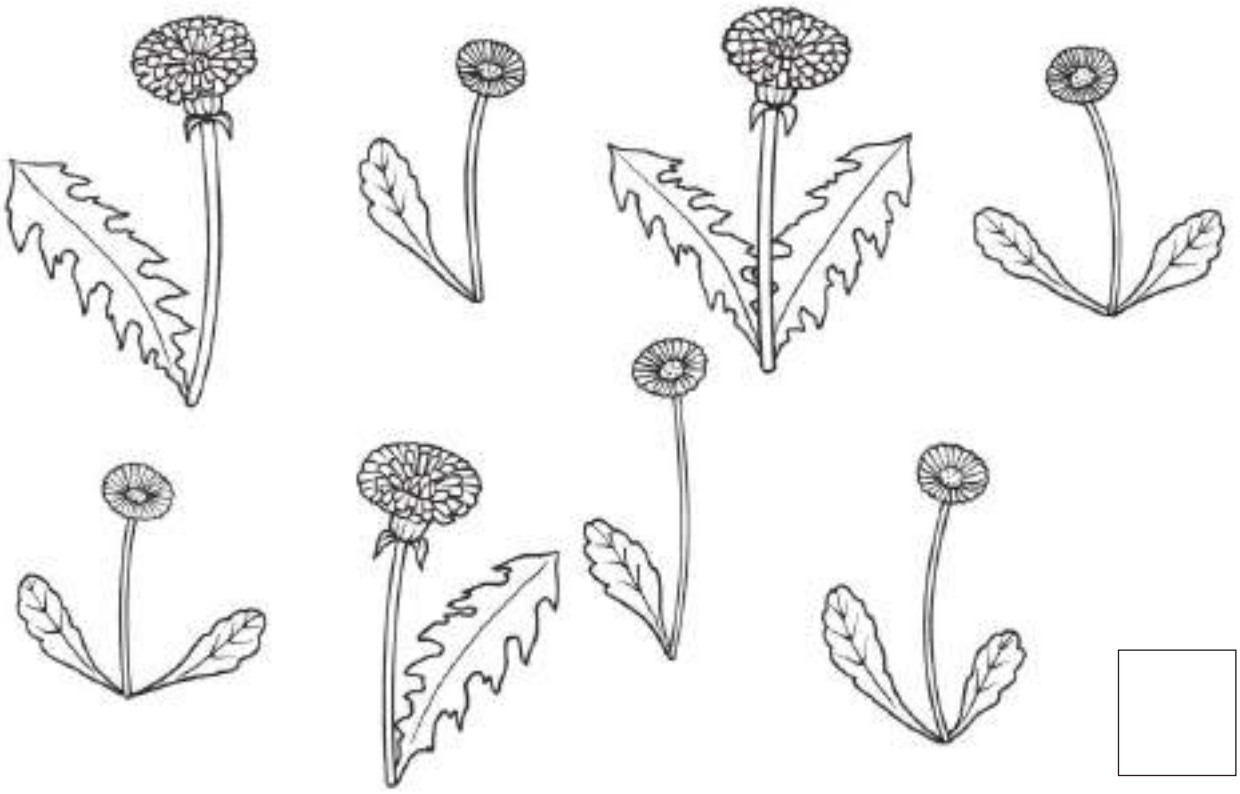
Colour 2 dandelions.



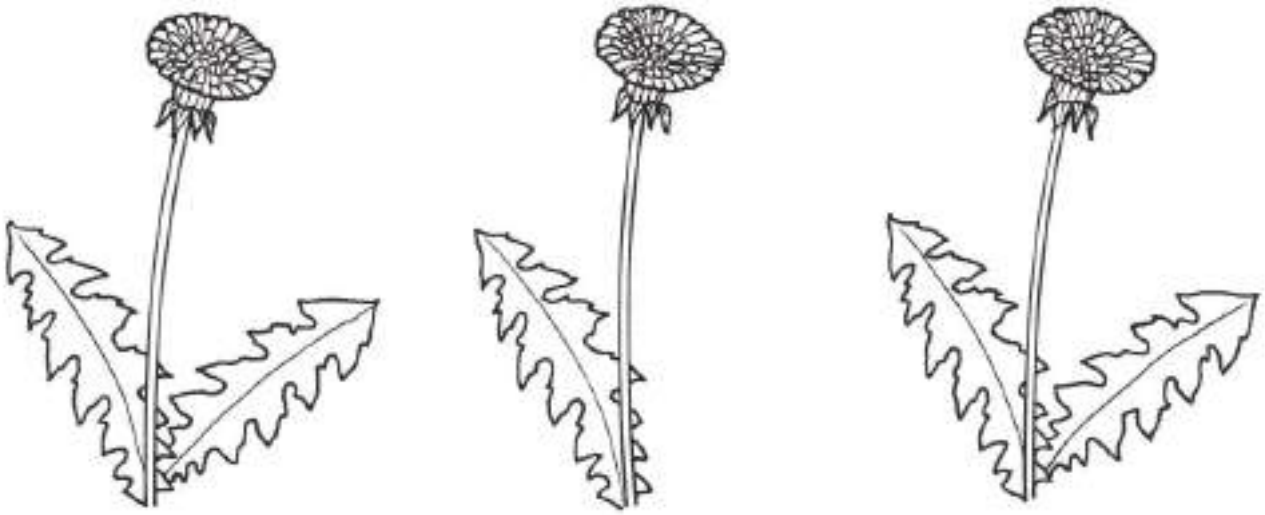
Find the dandelion.

Find a dandelion leaf and stick it to the page.

How many dandelions?

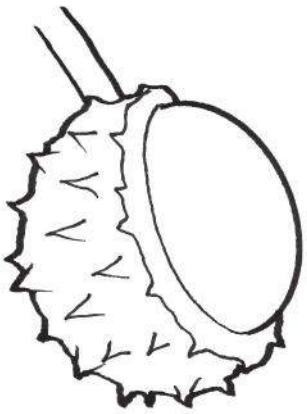


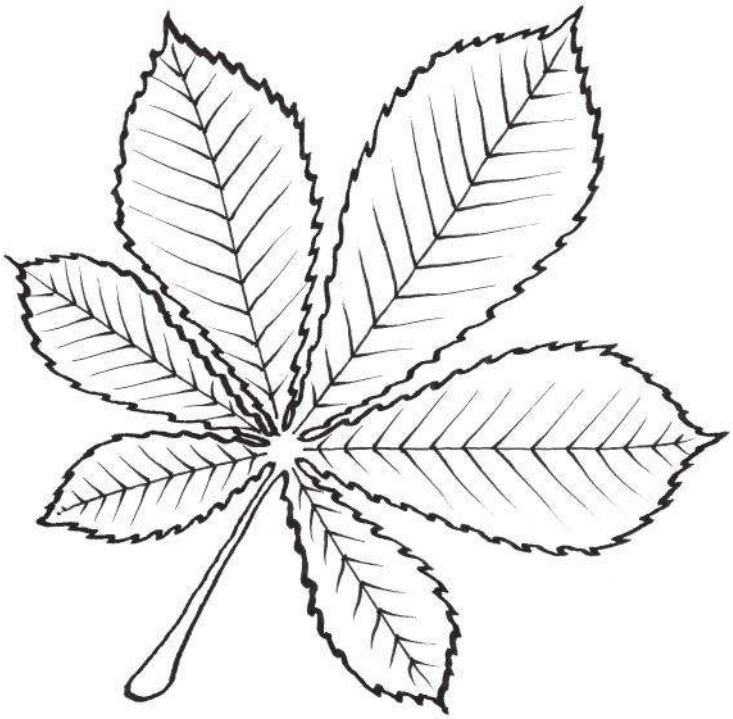
Find the odd one out.



Colour the horse chestnut leaf.

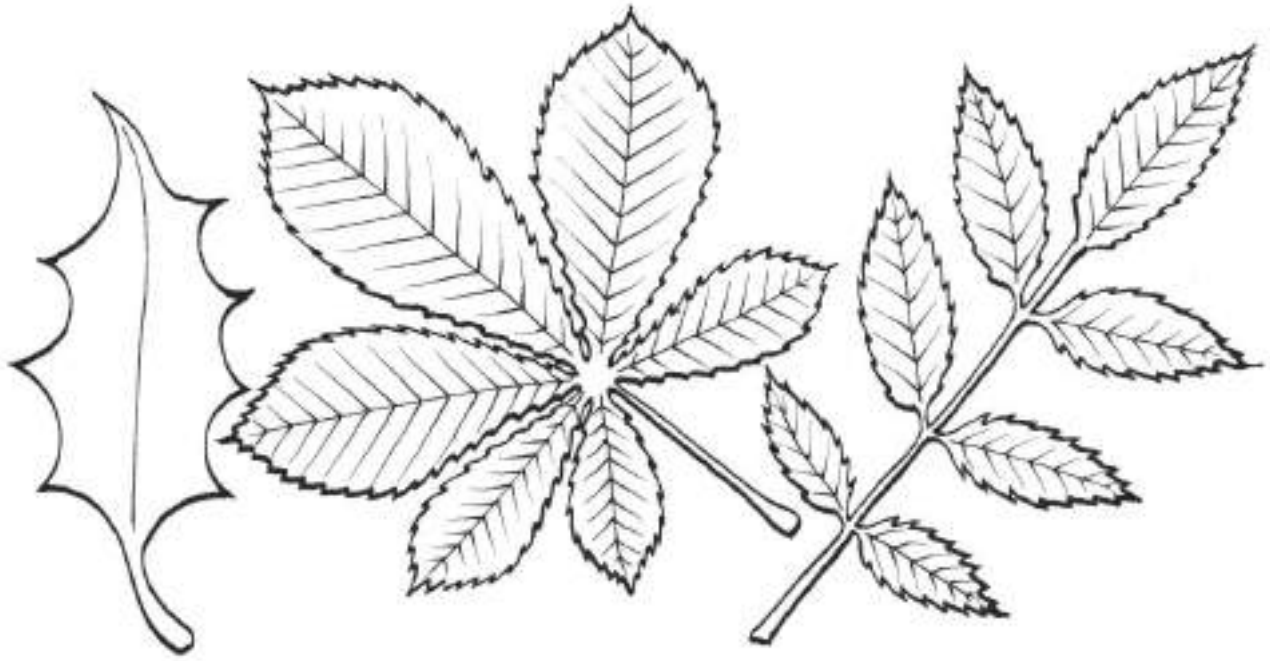
Colour the conker.





Draw a leaf and colour it and cut it out.

Find the horse chestnut leaf.

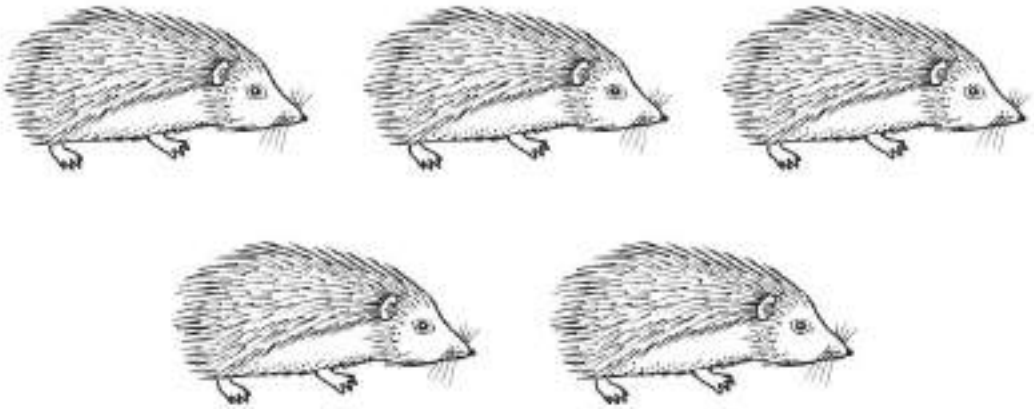


Find and stick on a leaf.

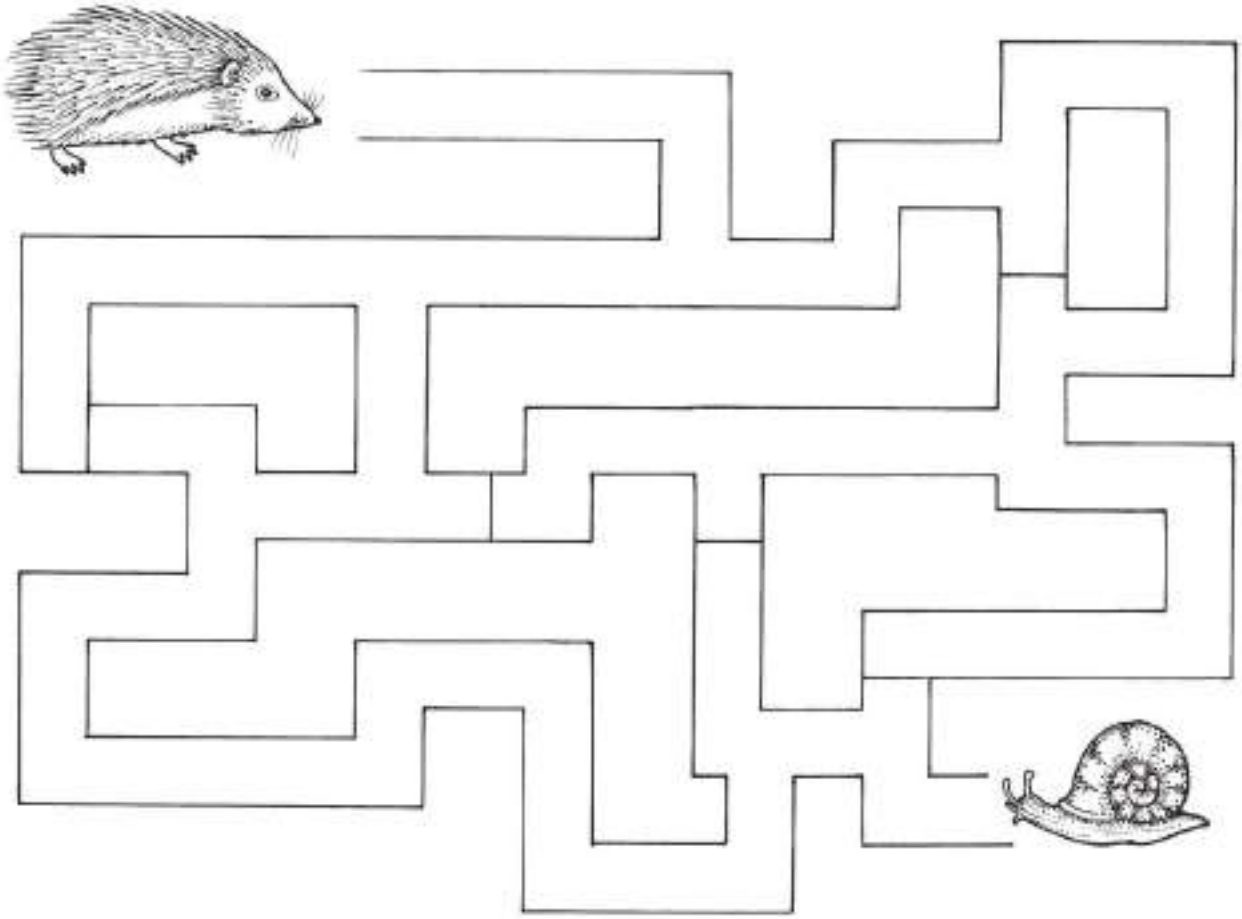
Make a rubbing of horse chestnut bark.

How many hedgehogs?

Colour two hedgehogs.

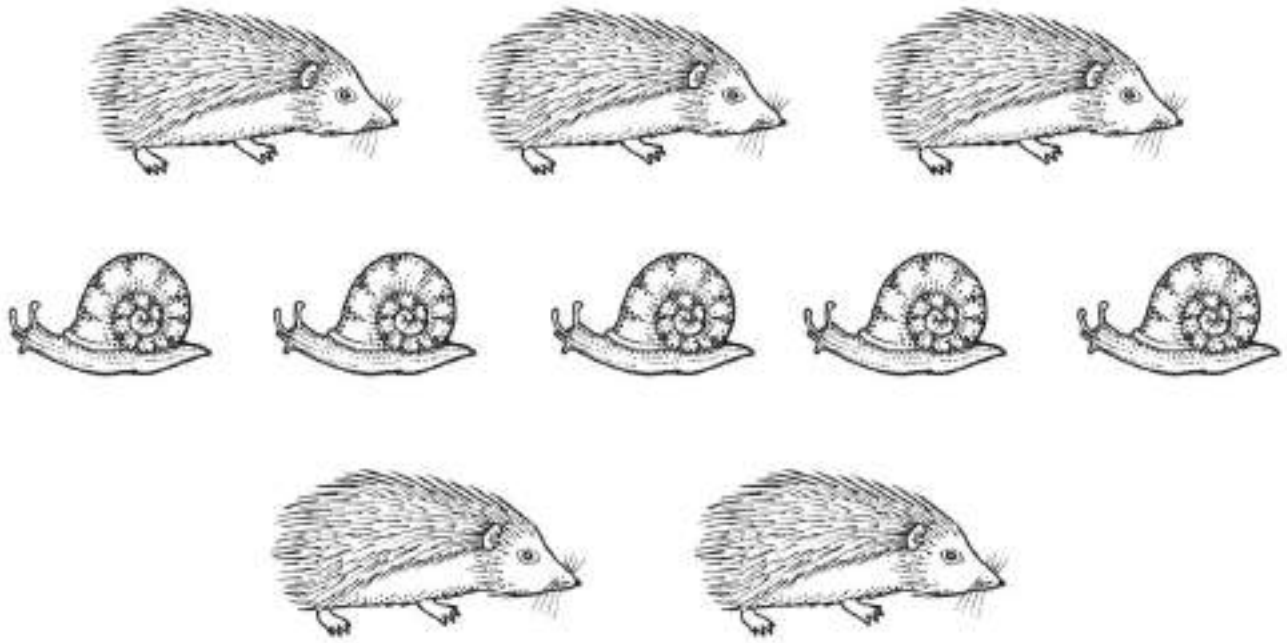


Help the hedgehog find its way to the snail.



Finish drawing the hedgehog.

Lead each hedgehog to its food by drawing a line.

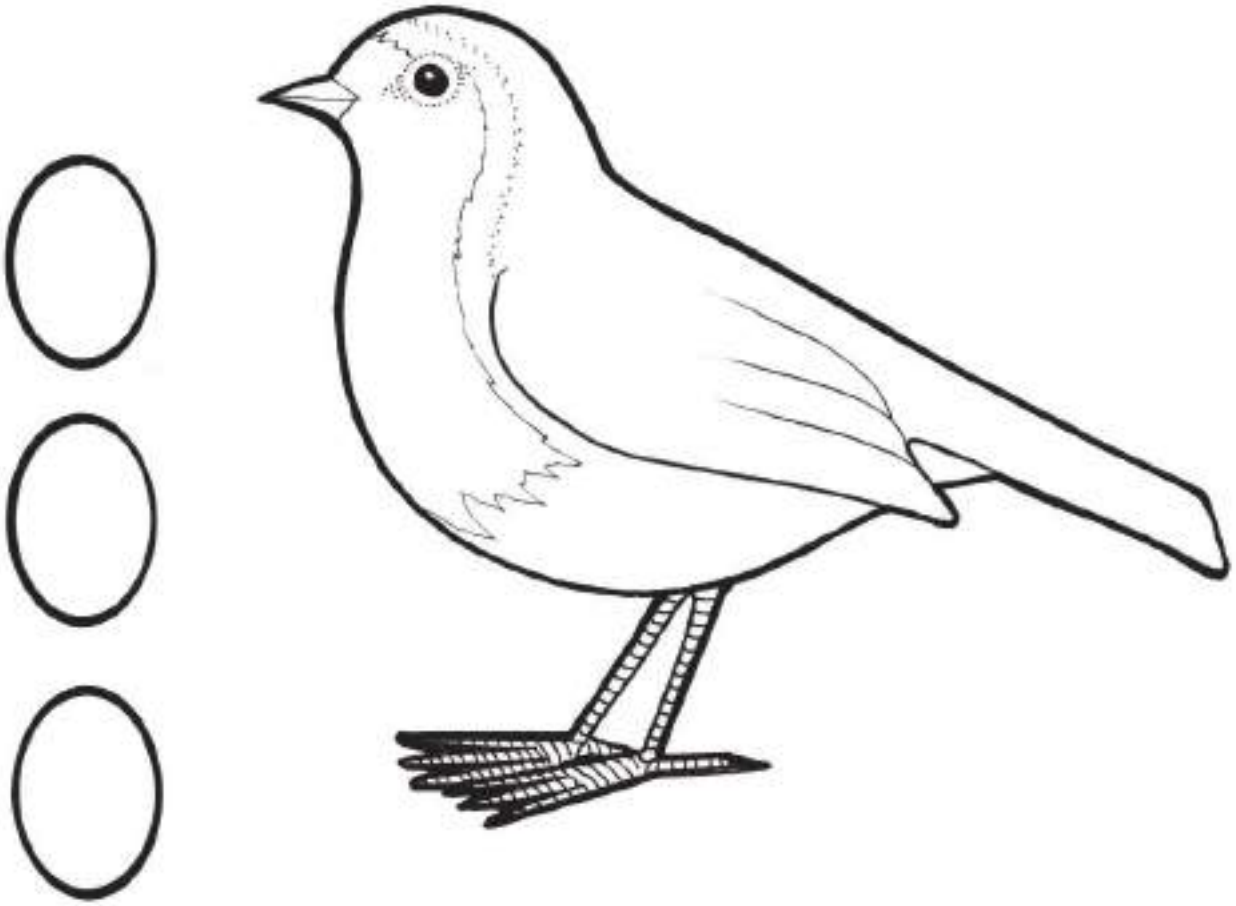


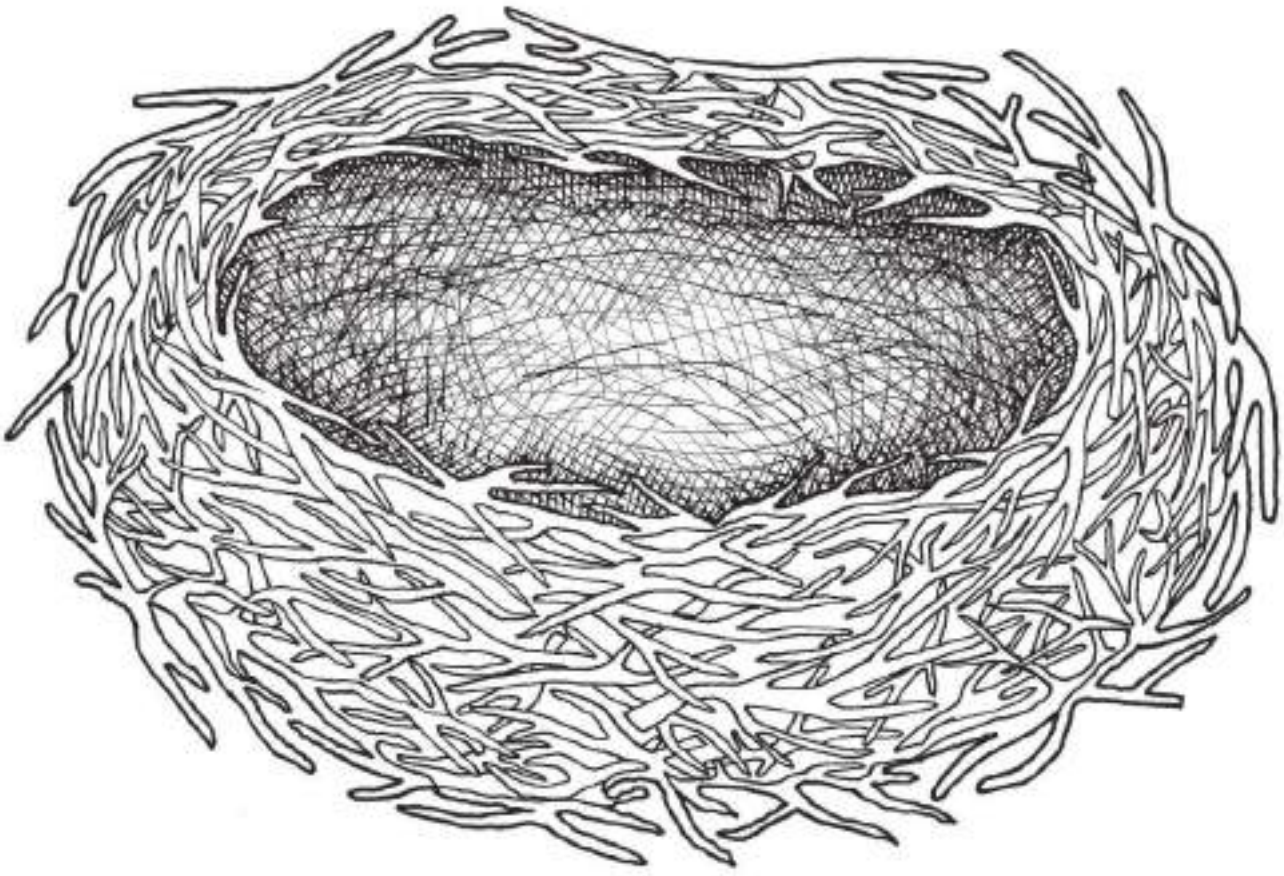
Write 'hedgehog'.

hedgehog

Cut out the robin and the egg and stick them into the nest.

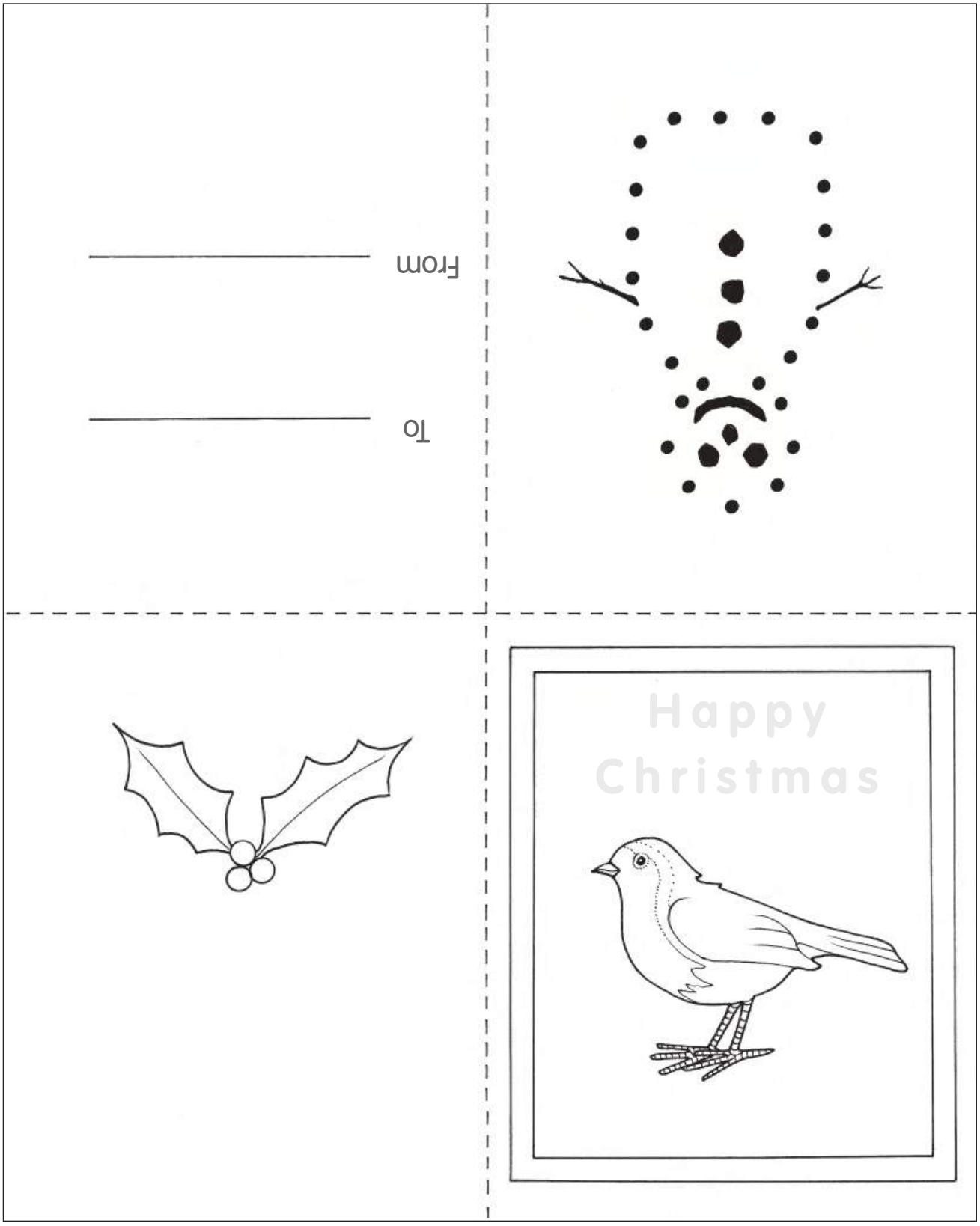
Colour the picture.



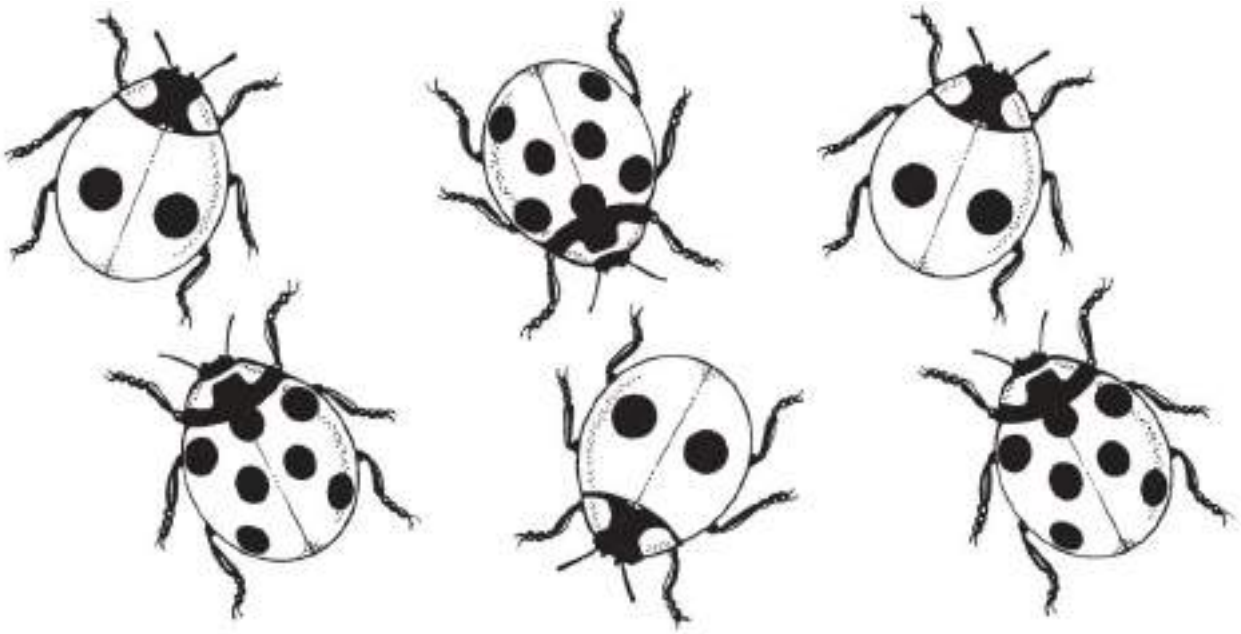


Make a Christmas card. Write 'Happy Christmas' on the front.

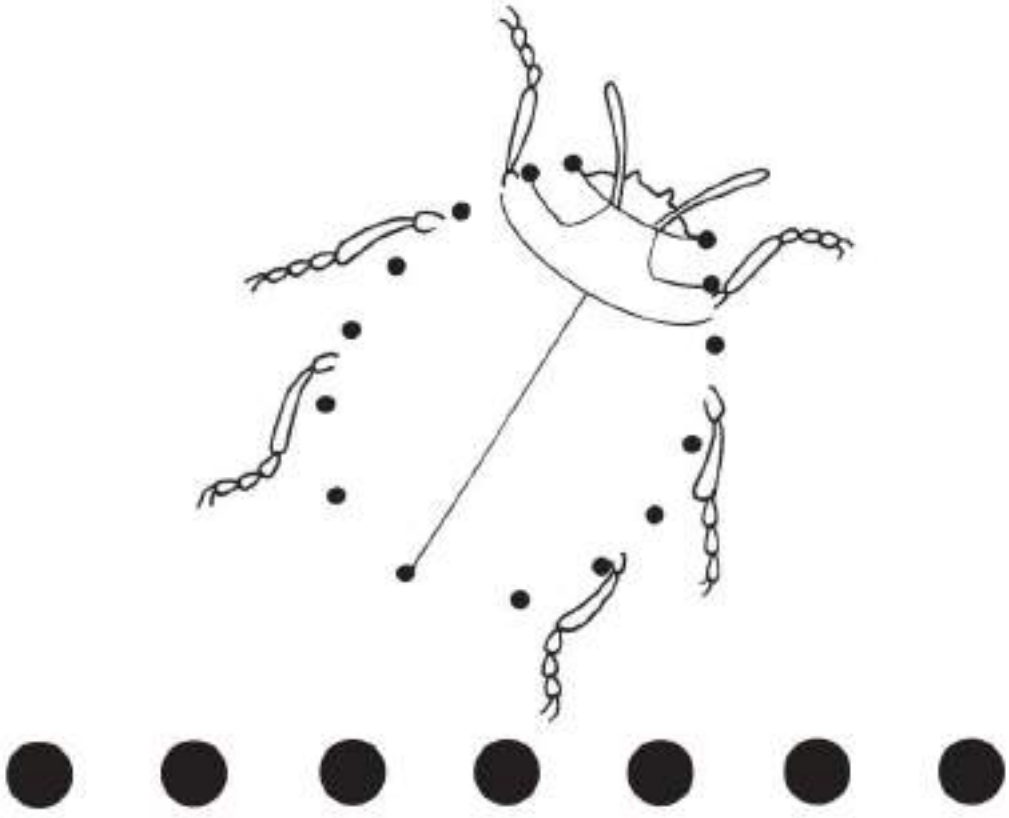
Join the dots to finish drawing the snowman. Colour the card and fold it.



Match the ladybirds. Circle all the 7-spot ones.



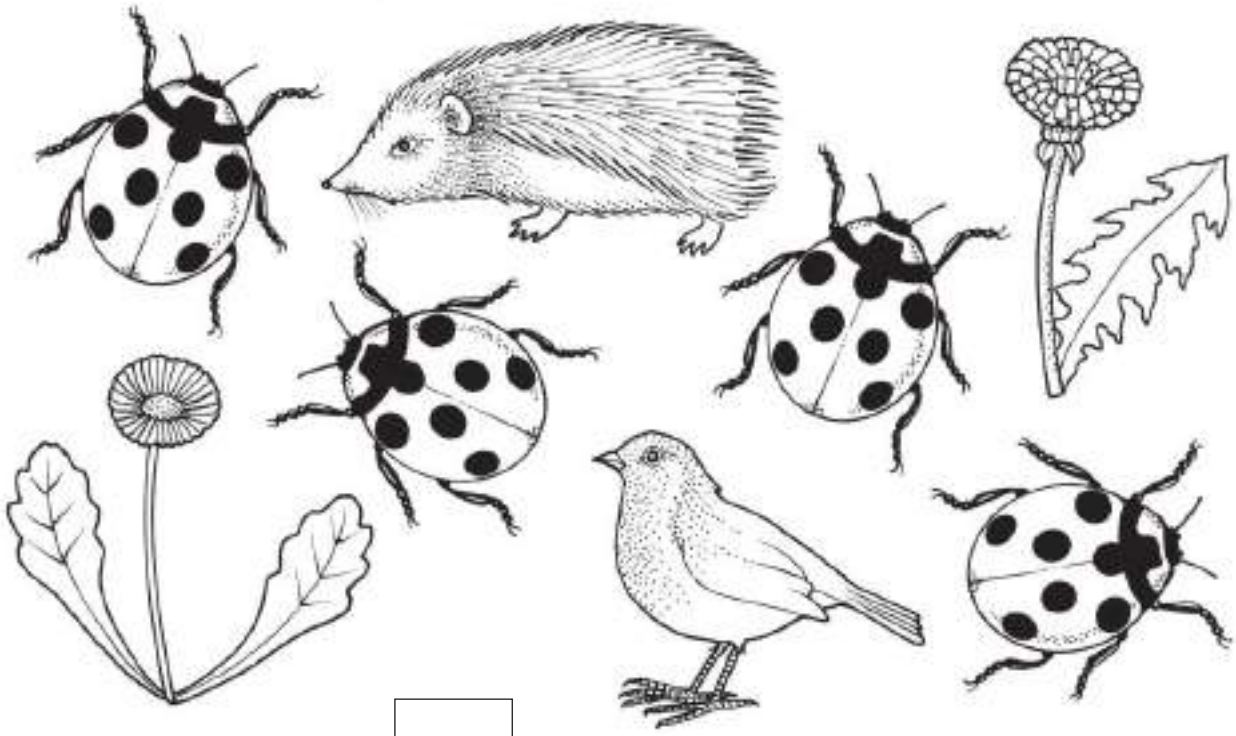
Finish drawing this ladybird by joining the dots. Then cut out the spots and stick them to the ladybird's back.



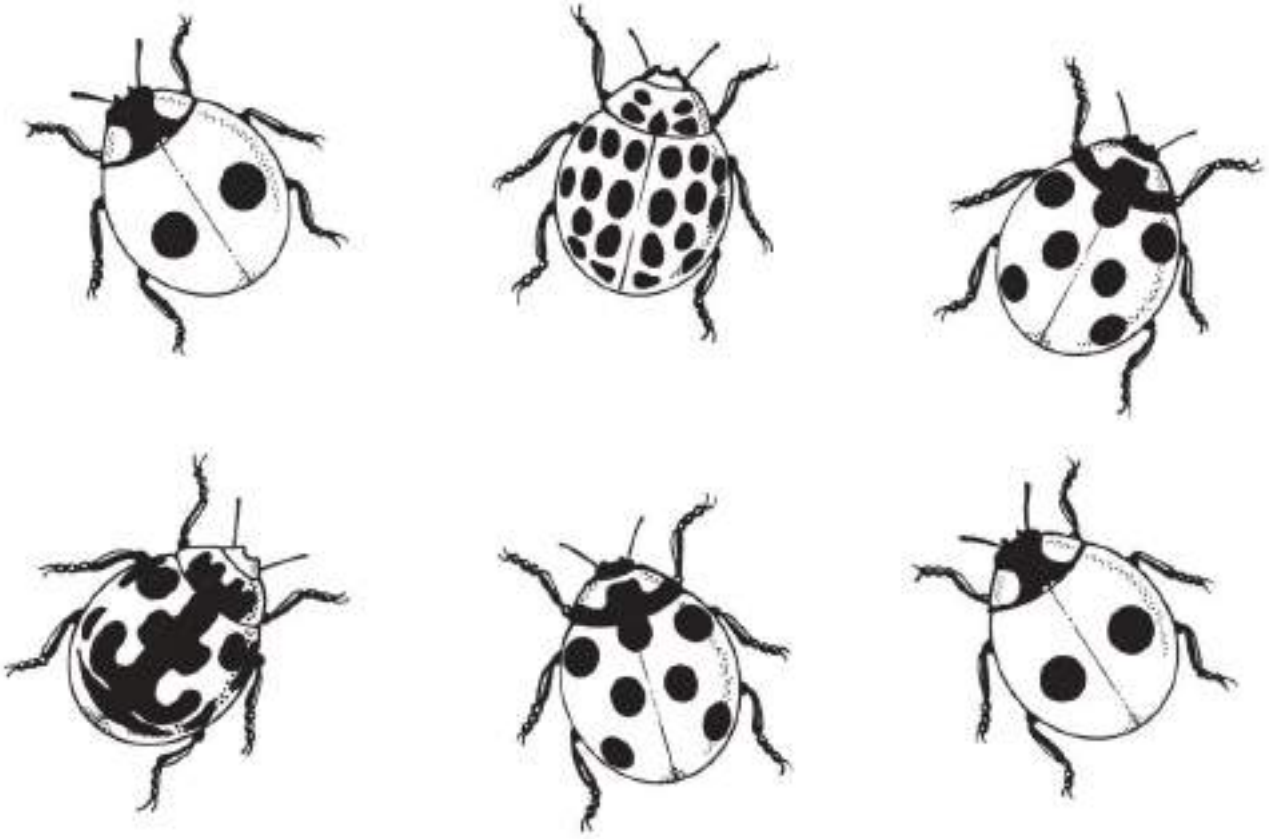
Write 'ladybird'.

ladybird

How many ladybirds?



Colour only the two-spot ladybirds.



Introduction to Senior Infants Worksheets

Buttercup

White Clover

Holly

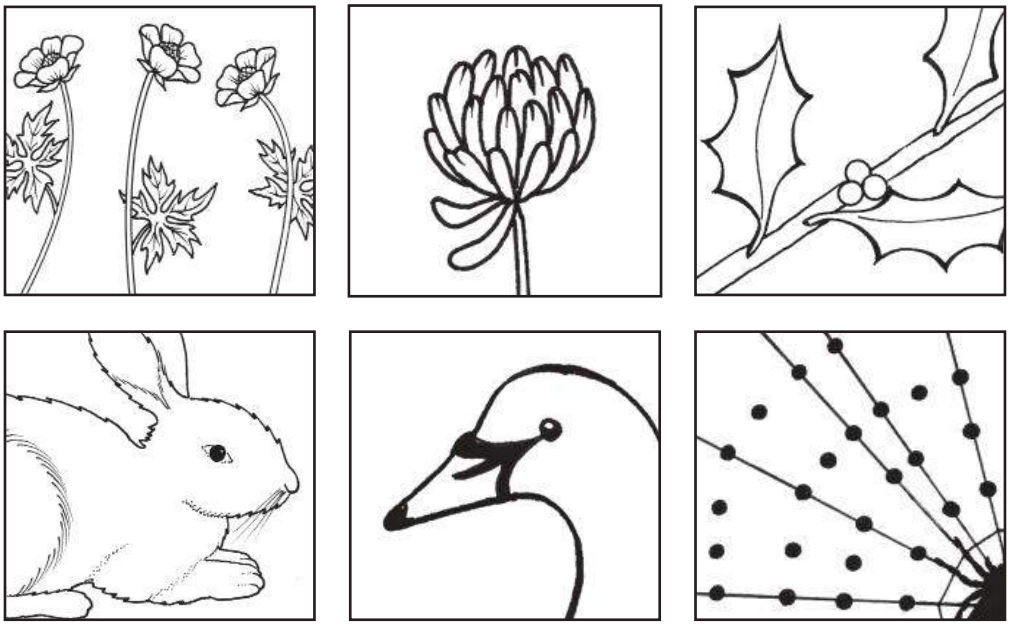
Rabbit

Swan

Spider

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher who should also show the pupils the pictures provided of each species.

Worksheets are given in the same order as the species in the handbook, although this is not necessarily the order in which they should be taught. Buttercups and clover can be found in September and more easily in May and June. Holly has leaves all the year round and berries in winter. Spiders are most easily seen in September. These things need to be taken into consideration. It is very important that the pupils be brought out into the school grounds to look for the plants and trees. It is not the same if the teacher brings in the plants. **N.B. Clover and buttercups grow and flower in un-mown sections of grass so get the caretaker to leave a section un-mown.** There are two worksheets for each topic – twelve in all – and the worksheets are designed to be photocopied and handed out to the pupils.



Senior Infants Teacher Notes

Buttercup 1

Worksheet in three sections

Writing practice:
Pupils practise writing the word **buttercup**

Counting practice and letter recognition:
Pupils count the number of different letters in the word

Following instructions:
Pupils colour in only 4 of the 6 buttercups drawn.

Classification:
Pupils identify the buttercups from a group of flowers and colour them in.

Buttercup 2

Worksheet in three sections

(Do this when buttercups are in flower)

Writing and letter recognition:
Pupils fill in the missing letters **buttercup**

Fieldwork outdoors and manual dexterity:
Pupils find buttercups growing outside in an un-mown area of school field. Each child collects one and sticks it in to the space provided. A buttercup should have 5 petals.

Accurate drawing:
Pupils should be encouraged to do an accurate drawing, with the correct number of petals.

Clover 1

Worksheet in three sections

Practising writing: **white clover**

Counting and recognising letters: How many letters in the two words – **white clover** ?

Observational skills:
Pupils connect each bee to each clover with a line.

Accurate drawing:
Pupils complete the drawing of the clover as accurately as they can. They then colour it in.

Clover 2:

Worksheet in three sections

Species recognition:
Pupils recognise the clover leaves among the other leaves drawn. They will already have been drawing the plant on the Clover 1 worksheet.

Counting practice:
Pupils are asked to count the leaflets – 3 to a leaf – not the number of leaves.

Fieldwork:
Clover plants should be found in an un-mown section.

Holly 1

Worksheet in three sections

Writing practice:
Write the word holly twice.

Counting practice:
How many berries?

Colouring accurately:
Pupils colour in the holly and berries.

EXTRA OPTION
Field work, if possible (using a blank sheet provided by the teacher):
Pupils find a holly tree and do a bark rubbing with pencil

Holly 2:

Worksheet in three sections

Observational skills:
Lead the birds to the berries – draw lines from bird to berry.

Counting and observational skills:
Pupils count the number of prickles in each holly leaf and write each total below each leaf.

Knowledge and remembering lesson on holly taught by teacher:
Birds are thrush, blackbird, robin, swallow and heron. Only thrush and blackbird eat berries (robins, herons and swallows don't).

Rabbit 1
Worksheet in three sections

Knowledge test:
Rabbits live in a burrow (not in a nest or a web)

Logic skills:
Pupils find the right string that leads the rabbit to its burrow.

Manual dexterity:
Pupils practise colouring.

Rabbit 2:
Make-and-do worksheet

Manual dexterity, colouring and writing:
This worksheet, when folded in four, forms an Easter card. Pupils colour it in and write on the four sections, as indicated. They can colour in the border on each page too.

Swan 1
Worksheet in three sections

Writing practice:
Pupils practise writing the word swan

Observational skills:
Spot the difference – three mute swans with s-shaped necks and one whooper swan with a straight neck and black-tipped bill.

Drawing skills:
Pupils finish drawing the swan, then colour it in.

Swan 2
Worksheet in three sections

Scientific knowledge:
Basic food chain – a swan only eats weeds in water and bread. It does not eat fish or ducks as it is a herbivore.

Manual dexterity:
Pupils cut out the swans and stick them in the picture provided – one in the air and one on the water.

Spider 1
Worksheet in three sections

Writing practice:
Pupils practise writing the word spider

Logic skills:
Find a way through the maze to the centre.

Drawing skills:
Pupils carefully and accurately finish drawing the spider. (N.B. all legs are attached to head section).

Spider 2
Worksheet in three sections

Observational skills:
Pupils join, with lines, the matching sets of spiders

Drawing skills:
Pupils join the dots and complete the spider's web.

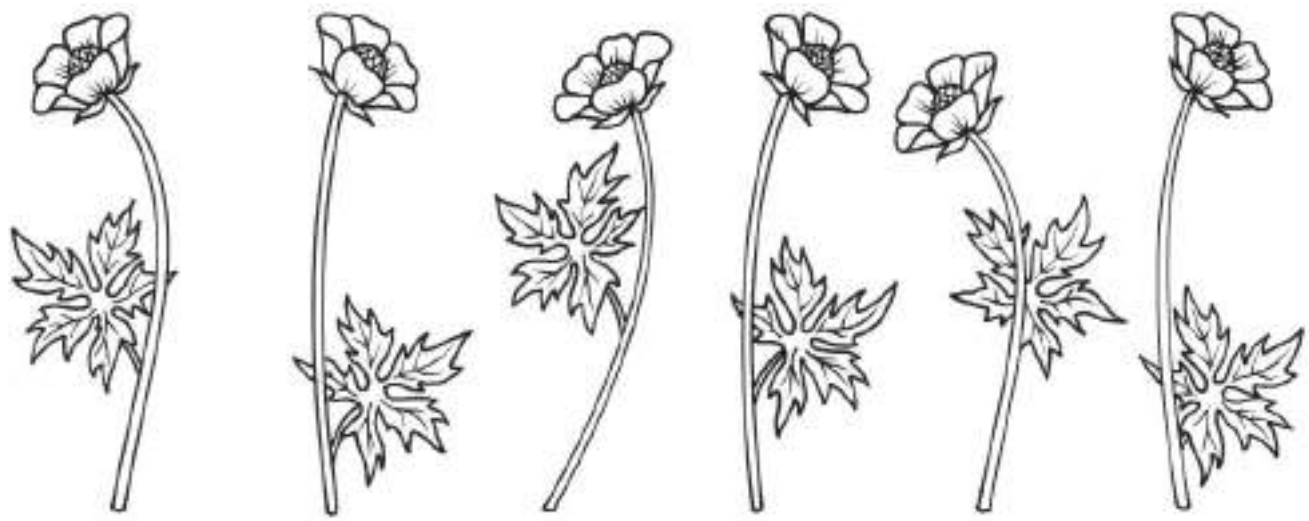
Manual dexterity:
Pupils cut out and paste flies into drawn web.

Write 'buttercup'.

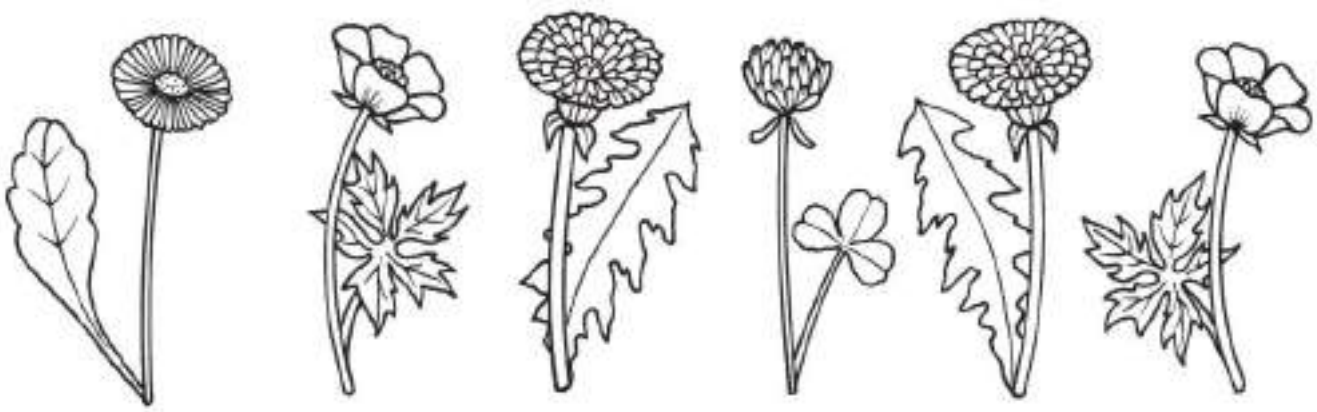
buttercup

How many 'u's? **How many 't's?** **How many 'b's?**

Colour 4 of the buttercups.



Circle the buttercups.



Fill in the missing letters.

b u t t e r c u p

b _ t _ e r _ u p

Bring in a buttercup.

How many petals?

Stick on the buttercup.

Finish the buttercup drawing.

Write 'white clover'.

white clover

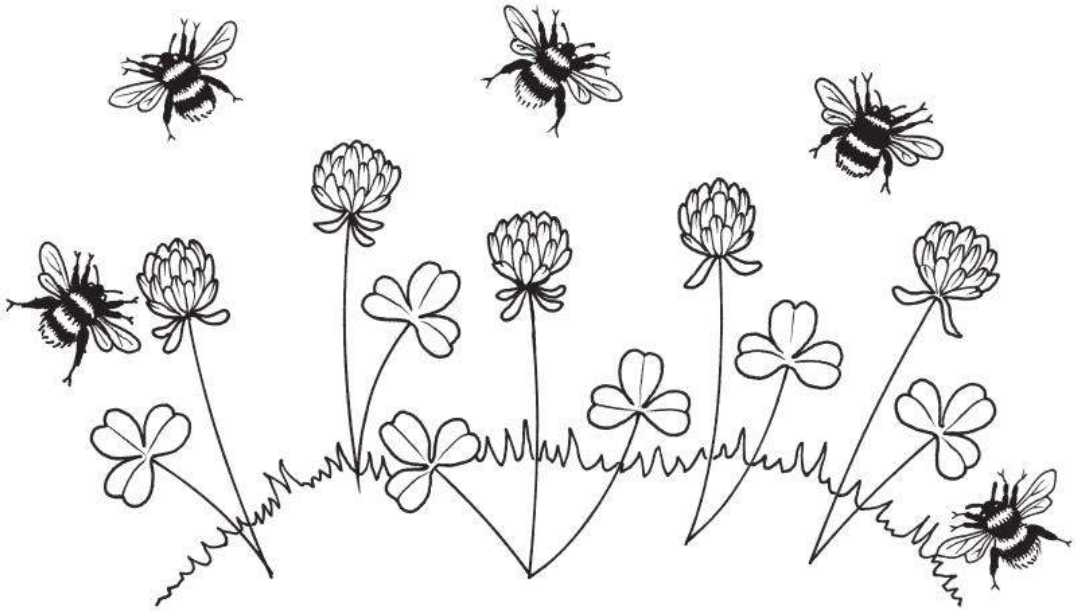
1. How many letters in 'white'?

2. How many letters in 'clover'?

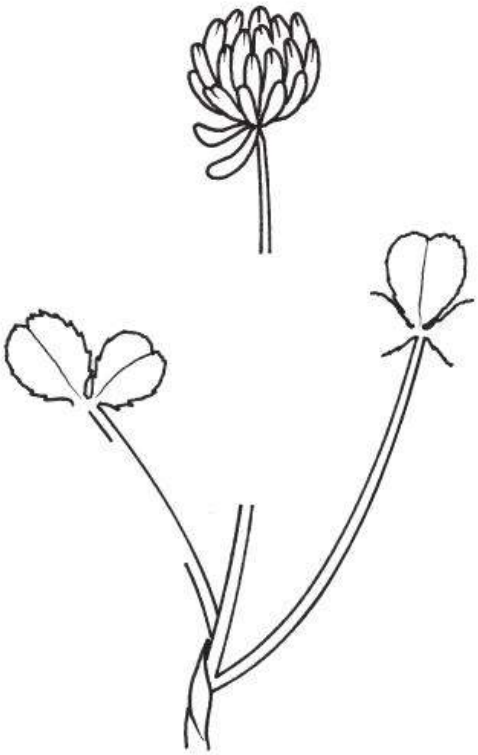
3. How many letters altogether?

1. 2. 3.

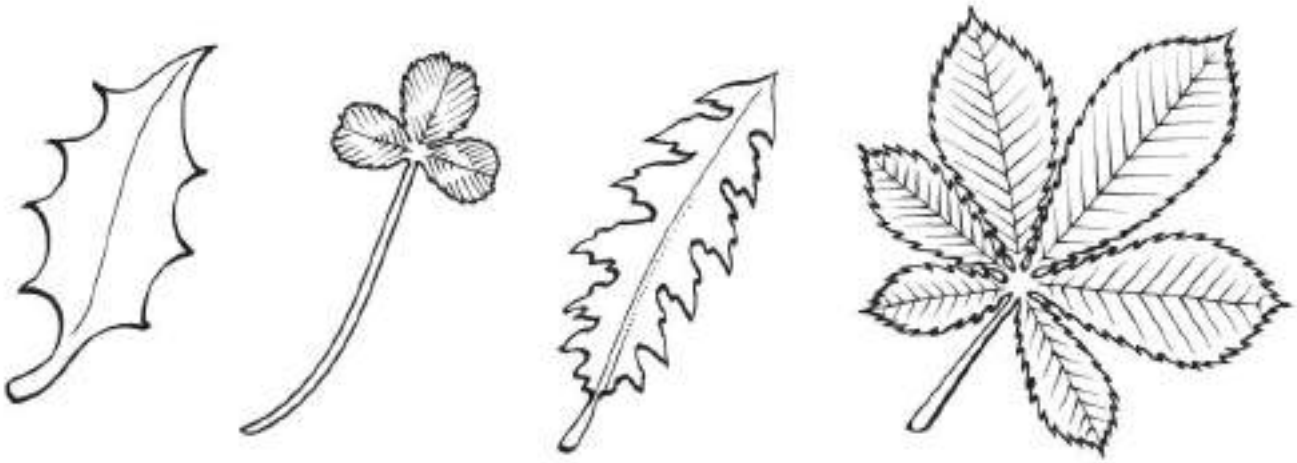
Lead the bees to the clover.



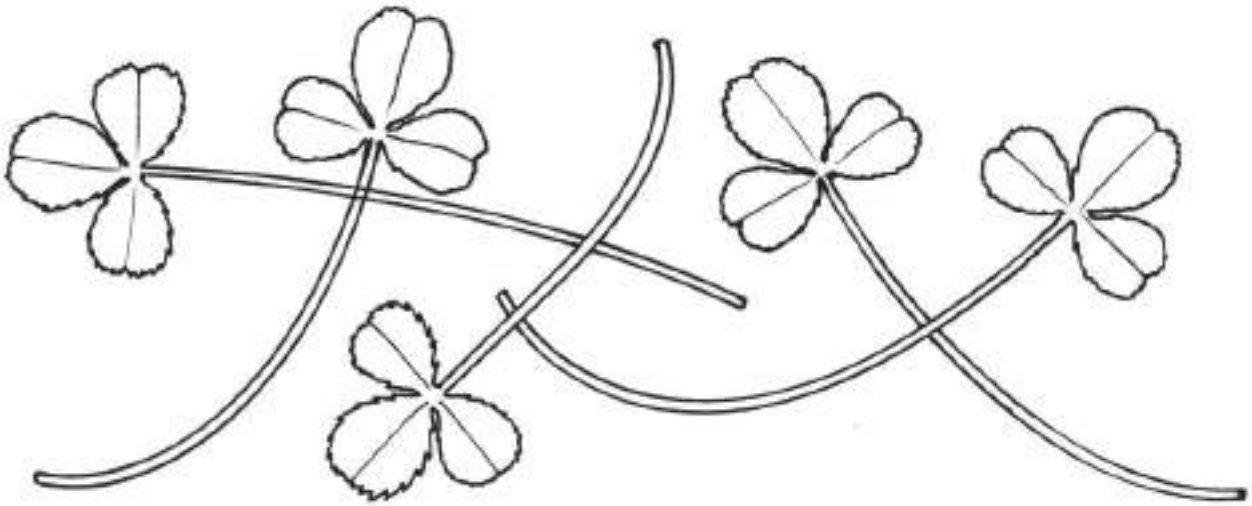
Finish the clover drawing.



Circle the clover leaf.



Count the clover leaflets.



Find a clover flower with a leaf and stick it to the page.

Write 'holly'.

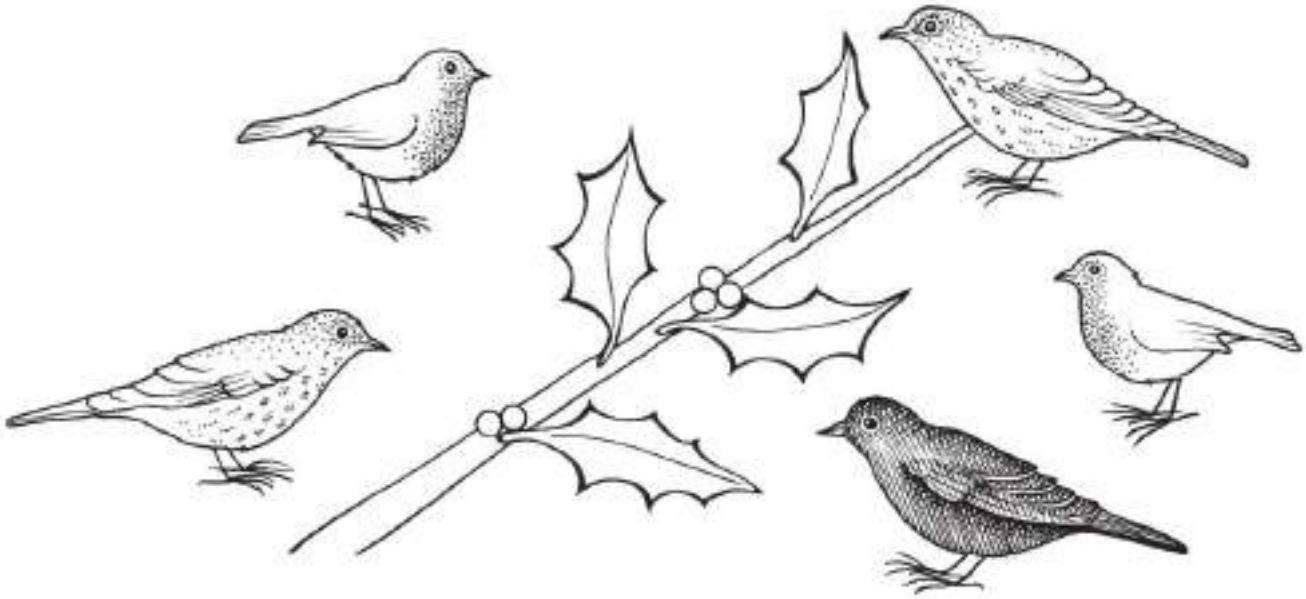
holly holly

How many holly berries?

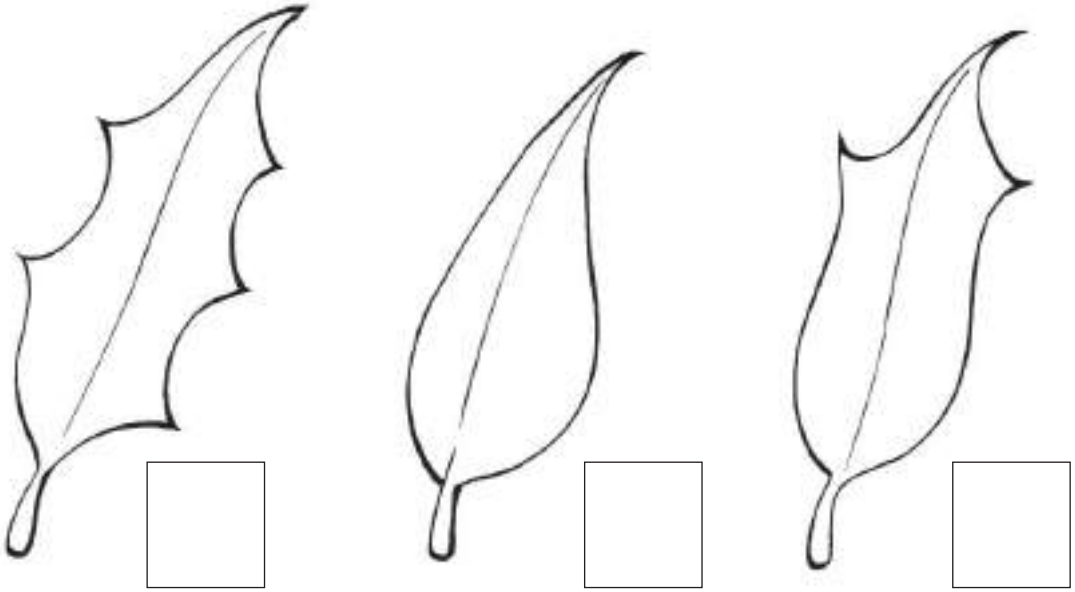
How many holly berries?

Colour the holly twig and berries.

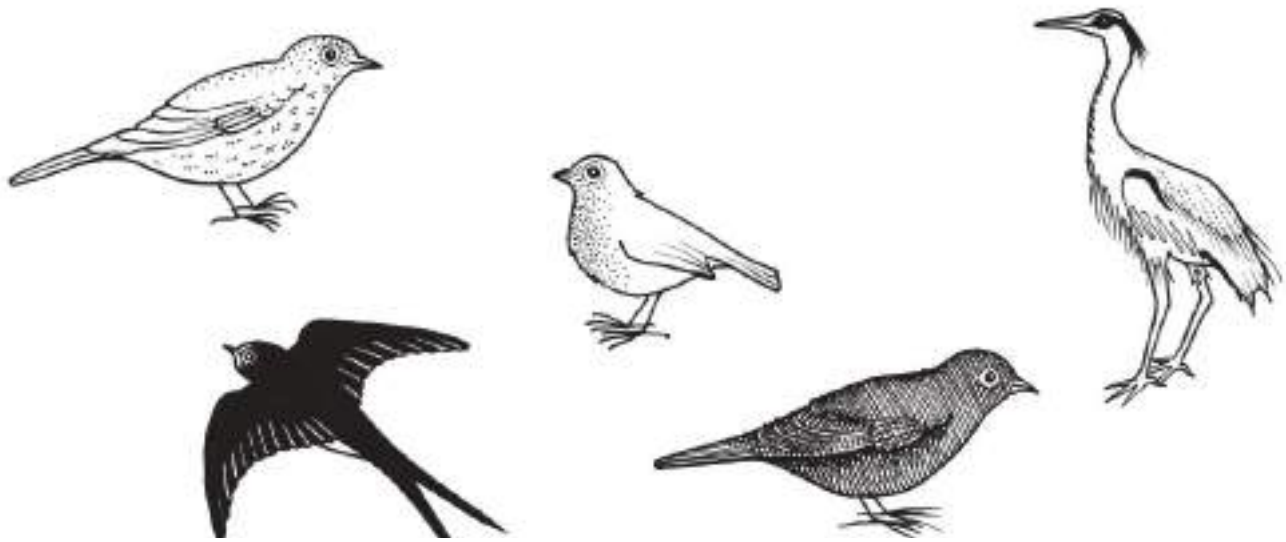
Lead the birds to the berries.



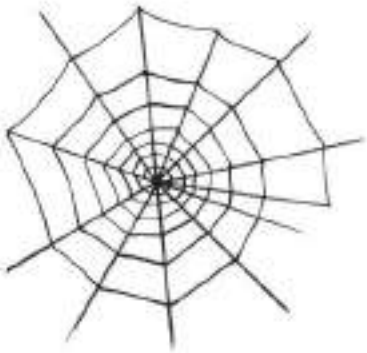
Count the prickles on the holly leaves.



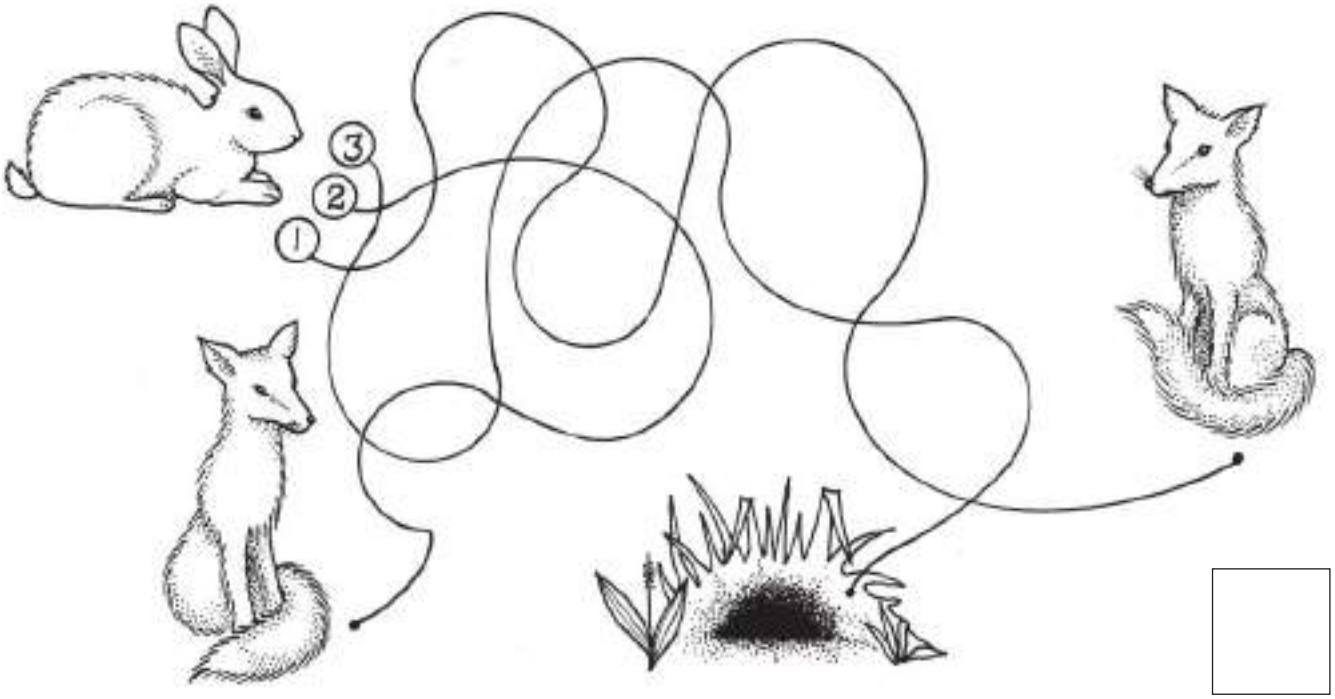
Circle the birds that don't eat berries.



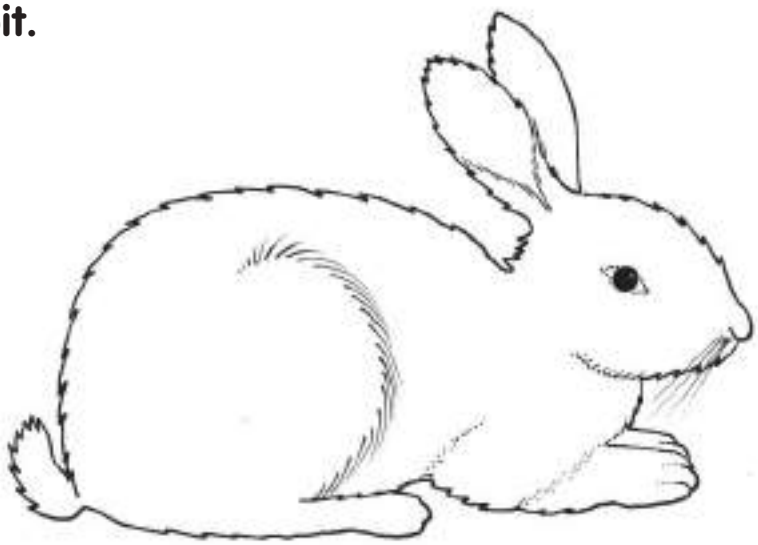
Lead the rabbit to its home by drawing a line.



Which string will lead the rabbit home?
Put the number in the box.



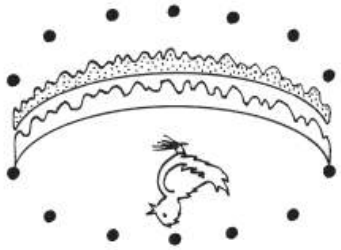
Colour the rabbit.

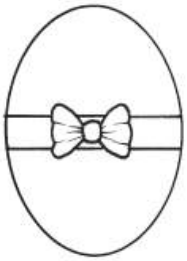


Make an Easter card. Write 'Happy Easter' on the front. Join the dots to finish drawing the Easter cake. Colour the card and fold it.

From _____

To _____

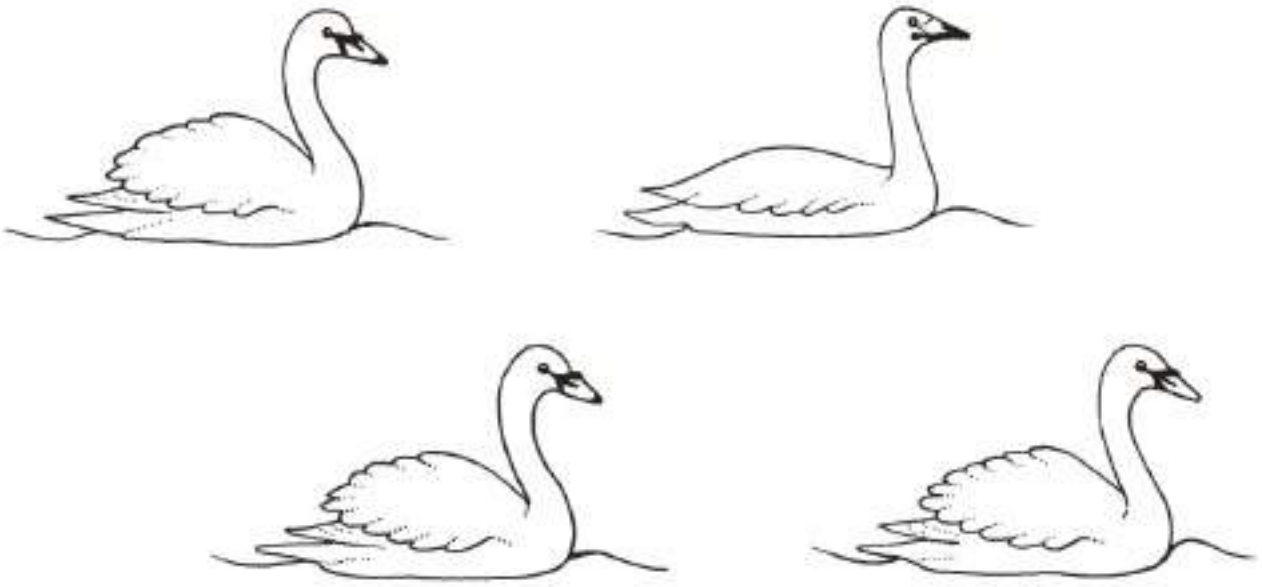




Write 'swan'.

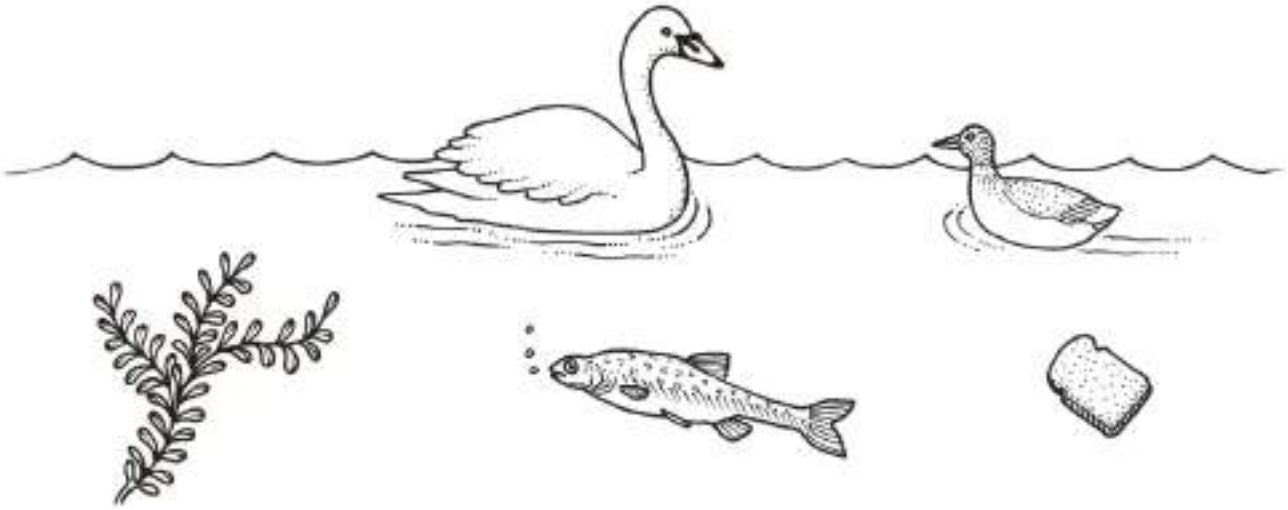
swan swan

Circle the odd one out.

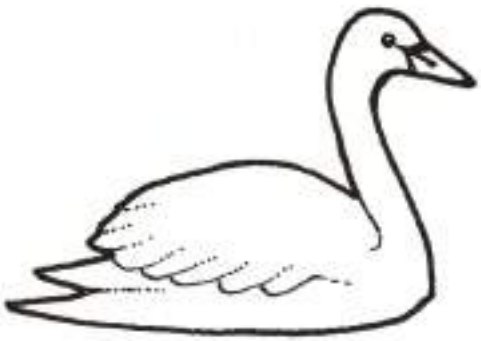


Finish drawing the swan and then colour it in.

Draw a line from the swan to its food.



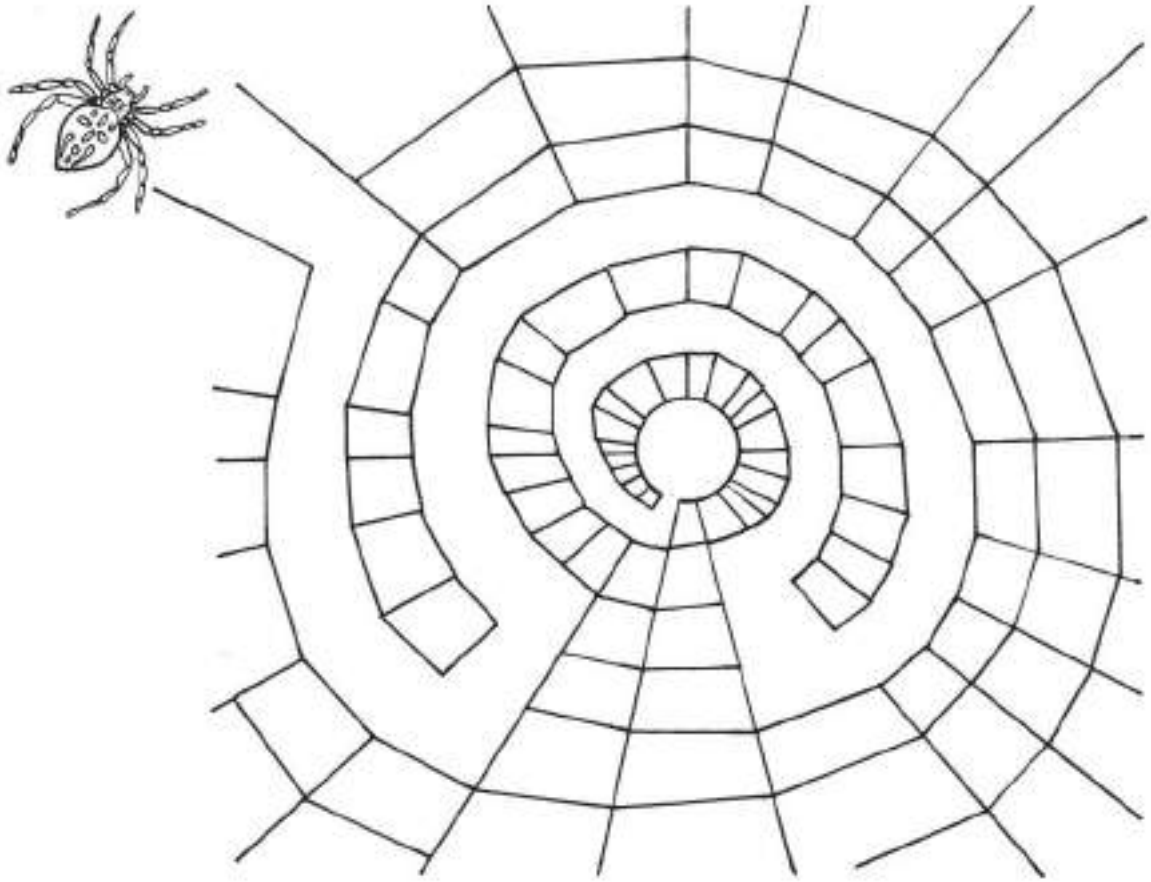
Cut out these swans and stick them on to the picture above.



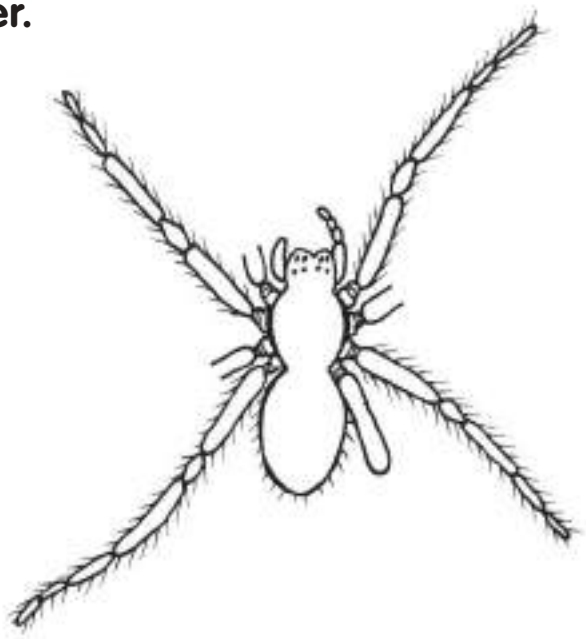
Write 'spider'.

spider

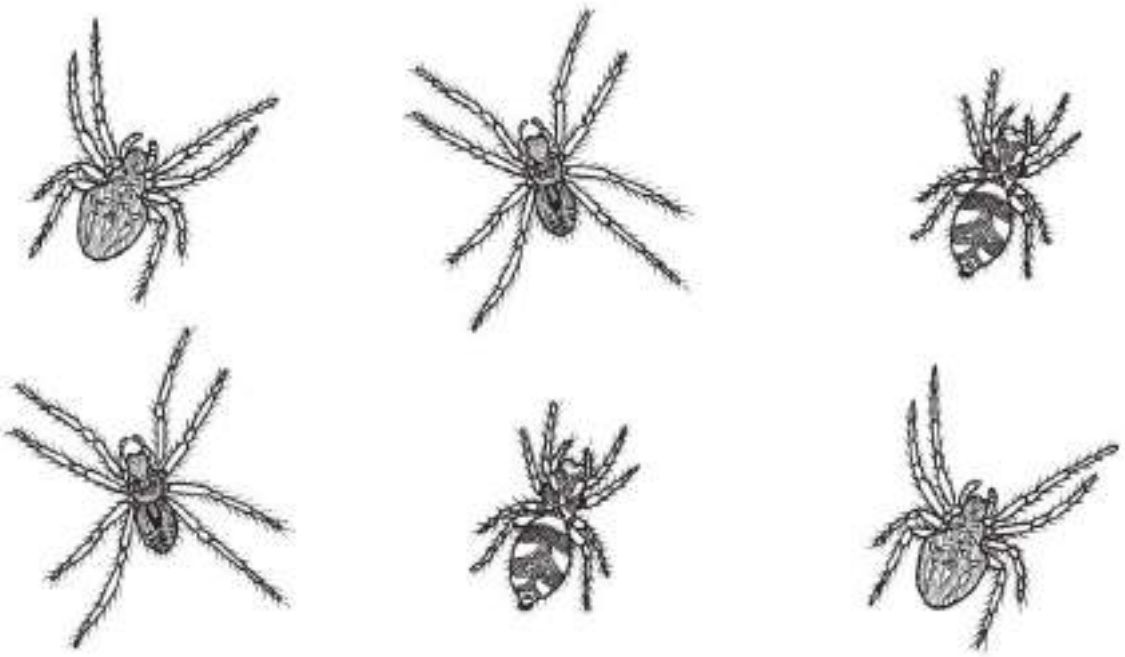
Help the spider find its way home.



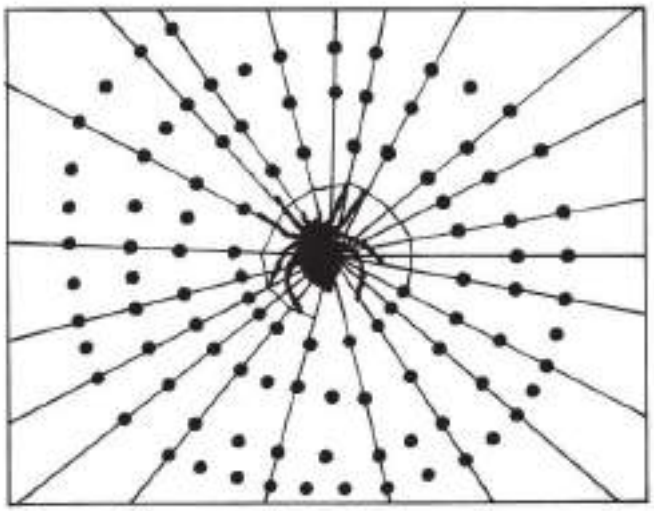
Finish drawing the spider.



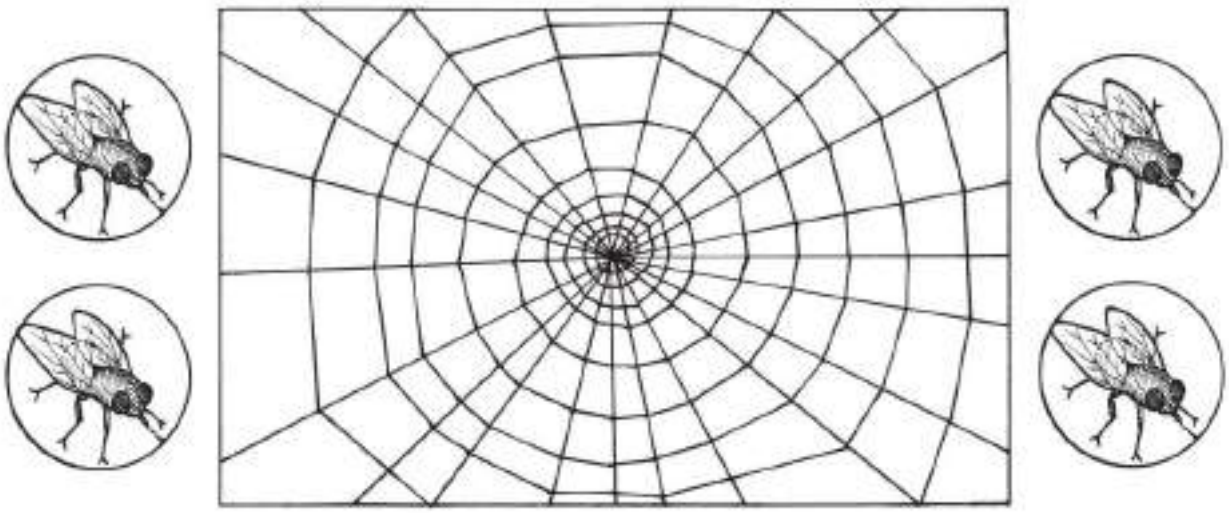
Match these spiders by drawing a line between similar ones.



Help the spider finish its web by joining the dots.



Cut out the flies and stick them to the web.



Introduction to 1st Class Worksheets

Primrose

Bluebell

Oak

Fox

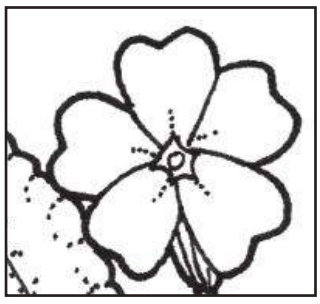
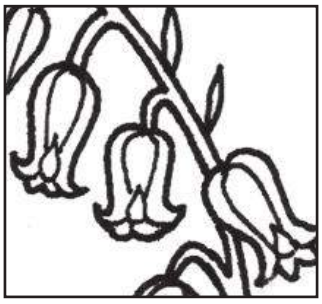
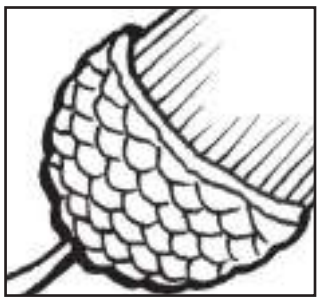
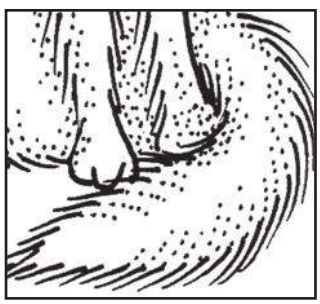
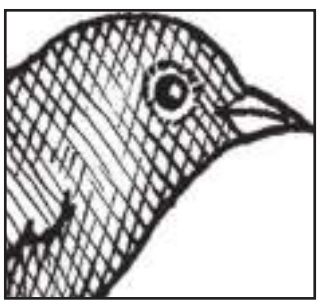
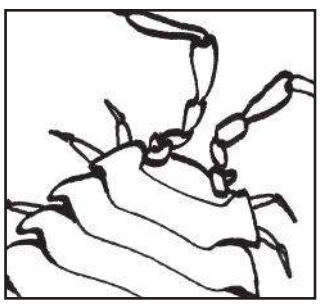
Blackbird

Woodlouse

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher. The pupils should be taught the lessons on each topic first and then shown the pictures provided for each species.

There is much emphasis in these worksheets on field work. It is important to bring pupils out to the school grounds on a regular basis to do tasks so that they become familiar with wildlife outdoors. Make sure the item to be seen or collected is around at the time, so pick the time of year accordingly. Return any animals collected to the wild. It is not necessary for the worksheets to be done in the order in which they are given.

There is also an emphasis on food chains and how animals live in the wild so that completing the worksheets adds to the children's knowledge. Plants and animals they have learned in the infant classes may appear again so that the knowledge they had is revised and built upon. The worksheets are designed to be photocopied and handed out to the pupils.

1st Class Teacher Notes

Primrose 1

Worksheet in three sections

Writing practice:
Pupils practise writing the word **primrose**

Classification:
Pupils identify the primroses from a group of flowers. They should be able to name the rest as they have learned them while in Infants.

Making words:
How many words can they make from the letters **primrose**?

Primrose 2

Worksheet in two sections
(Do this when primroses are in flower)

Fieldwork outdoors and manual dexterity:
Pupils find primroses growing outside in a hedge. Each child collects one flower and one leaf and sticks it into the space provided. (Sellotape can be used here).

Accurate drawing:
Pupils should be encouraged to do an accurate drawing of a primrose and a leaf with the correct number of petals.

Bluebell 1

Worksheet in four sections

Writing practice:
Pupils practise writing the word **bluebell**

Fieldwork outdoors and manual dexterity:
Pupils find bluebells growing outside in the hedge. Each child collects one flower and one leaf and sticks it into the space provided. (Sellotape can be used here).

Accurate drawing:
Pupils should be encouraged to do an accurate drawing of a bluebell and a leaf. The drawing has been started for them – they can colour it in with the correct colours.

Test of observational skills:
Where do bluebells grow? They can pick more than one answer from the word bank

Bluebell 2

Worksheet in two sections

Classification and revision:
Matching the flower to the leaf – primrose and bluebell from this year and clover from last year.

Art and manual dexterity:
Pupils make a picture that can be stuck on to a Spring greeting card. The bluebells are coloured and cut out. Then they are stuck into the slot on the plant pot and all are coloured in to form part of a greeting card.

Oak 1

Worksheet in two sections

Classification and recognition:
Pupils fill in the names of the parts of the tree in the boxes provided. They choose from a selection of words in the word bank.

Classification and revision:
Pupils match the seeds to the leaves – they can name them too.

Oak 2

Worksheet in two sections

Learning about food chains:
With a pencil line, the pupils join the acorn to whatever eats it – (squirrel, rook and mouse)

Word recognition:
Word search – pupils find all the words that are listed in the word bank. They are either horizontal or vertical in the word search.

Fox 1

Worksheet in three sections

Drawing and colouring skills:
Pupils join up the dots to complete the fox and then colour it in carefully

Logic skills:
Pupils find the way through the maze for the fox to reach his den.

Writing and learning:
A fox lives in a _____ Don't tell them the word – it was written for them in the maze exercise.

Fox 2

Worksheet in two sections

Ecological knowledge:
A fox food chain – pupils have to join the dots in each picture to find out that a fox eats apples, chickens, rabbits and mice.

Applying knowledge:
Pupils then apply this knowledge to filling in the food chains. There are three levels in each, with the fox in the highest level in each case. The words they need are in the word bank provided.

Blackbird 1

Worksheet in two sections

Writing practice:
Pupils practise writing the word **blackbird**

Observational skills:
Pupils have to look closely at the picture to detect the hidden blackbirds. They can colour them in as they find them.

Blackbird 2

Worksheet in two sections

Demonstration of knowledge of a blackbird's life cycle:
Pupils do this by putting the pictures in the right order – blackbird singing to attract a mate, building a nest, eggs in nest, eggs hatching, big birds in nest and, finally all three blackbirds in flight. They should number the pictures in the right order.

Word search:
The word search is all based on things blackbirds eat. The words are either horizontal or vertical and are all given in the word bank.

Woodlouse 1

Worksheet in three sections

Writing practice:
Pupils practise writing the word woodlouse

Observation and counting:
Pupils observe the picture provided and write the numbers of legs (14), antennae (2) and tails (4) in the boxes provided.

Writing and knowledge of a how a woodlouse lives:
The words needed for the answers are given in the word bank.

Woodlouse 2

Worksheet in three sections

Field work:
Pupils go outside and find woodlice. These live in the woodpile, in dead leaf litter, under flower pots, under big stones, etc. Use a "bug" viewer with a magnifying lid to see the creatures better.

Drawing:
On return to class, pupils can complete the drawing and colour in the woodlouse correctly.

Food chain:
The animals that eat woodlice are drawn and their names are in the word bank.

Write 'primrose'.

primrose _____

Find the primroses.

Name the others.

primrose	dandelion	daisy
clover	buttercup	

How many words can you make from primrose?

_____ _____ _____

_____ _____ _____

_____ _____ _____

Find a primrose flower and a primrose leaf and stick them to the page.

flower

leaf

Draw and colour in a primrose flower and a leaf.

flower

leaf

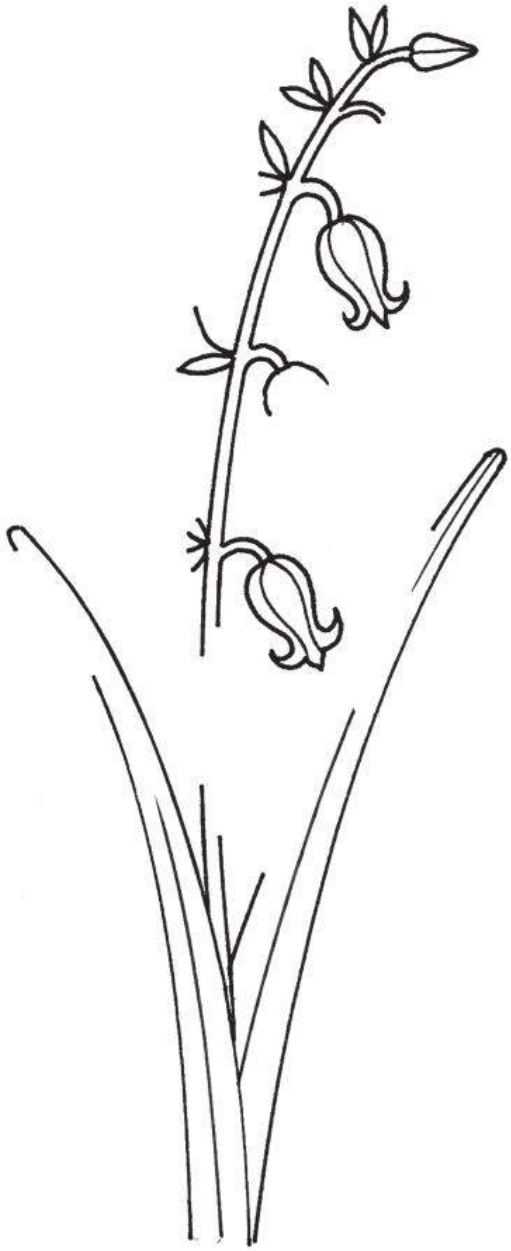
Write 'bluebell'.

bluebell _____

Go out and find a bluebell flower and a bluebell leaf and stick them to the page.

flower

leaf

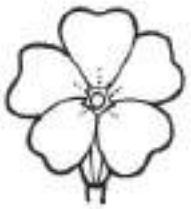


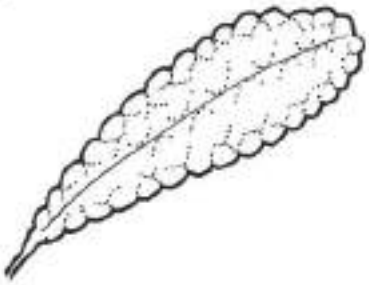
Finish the drawing and colour it in.

My bluebell came from a _____.

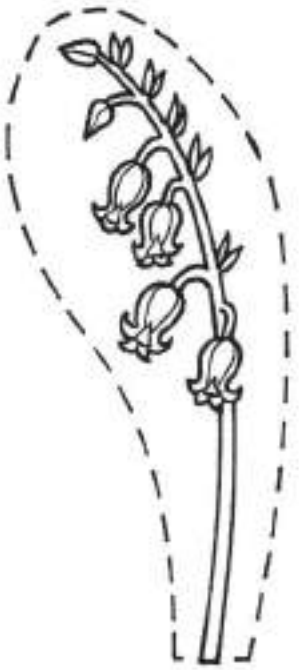
lake	**park**	**garden**	**wood**

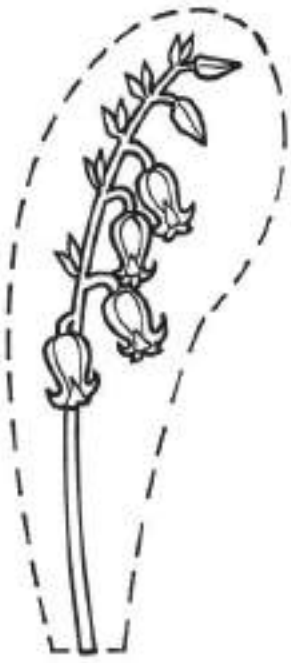
Match the flower to the leaf.

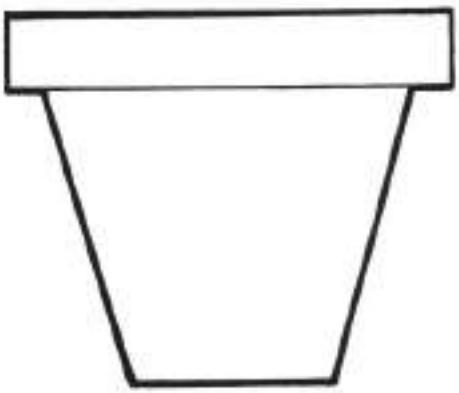




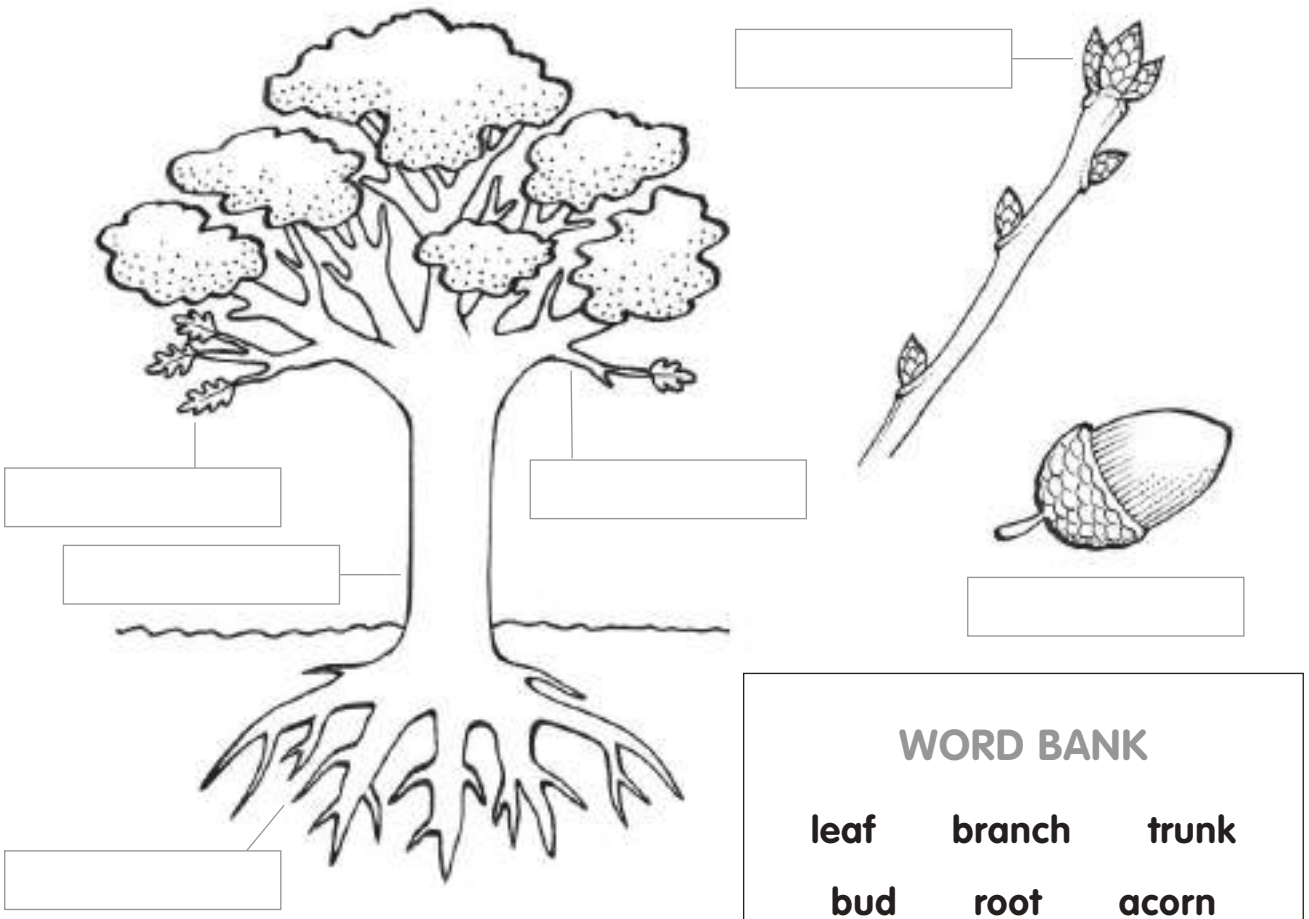
Colour in and cut out the flowers and flower pot.
Use these to make your own card for spring.







Name the parts of the tree.

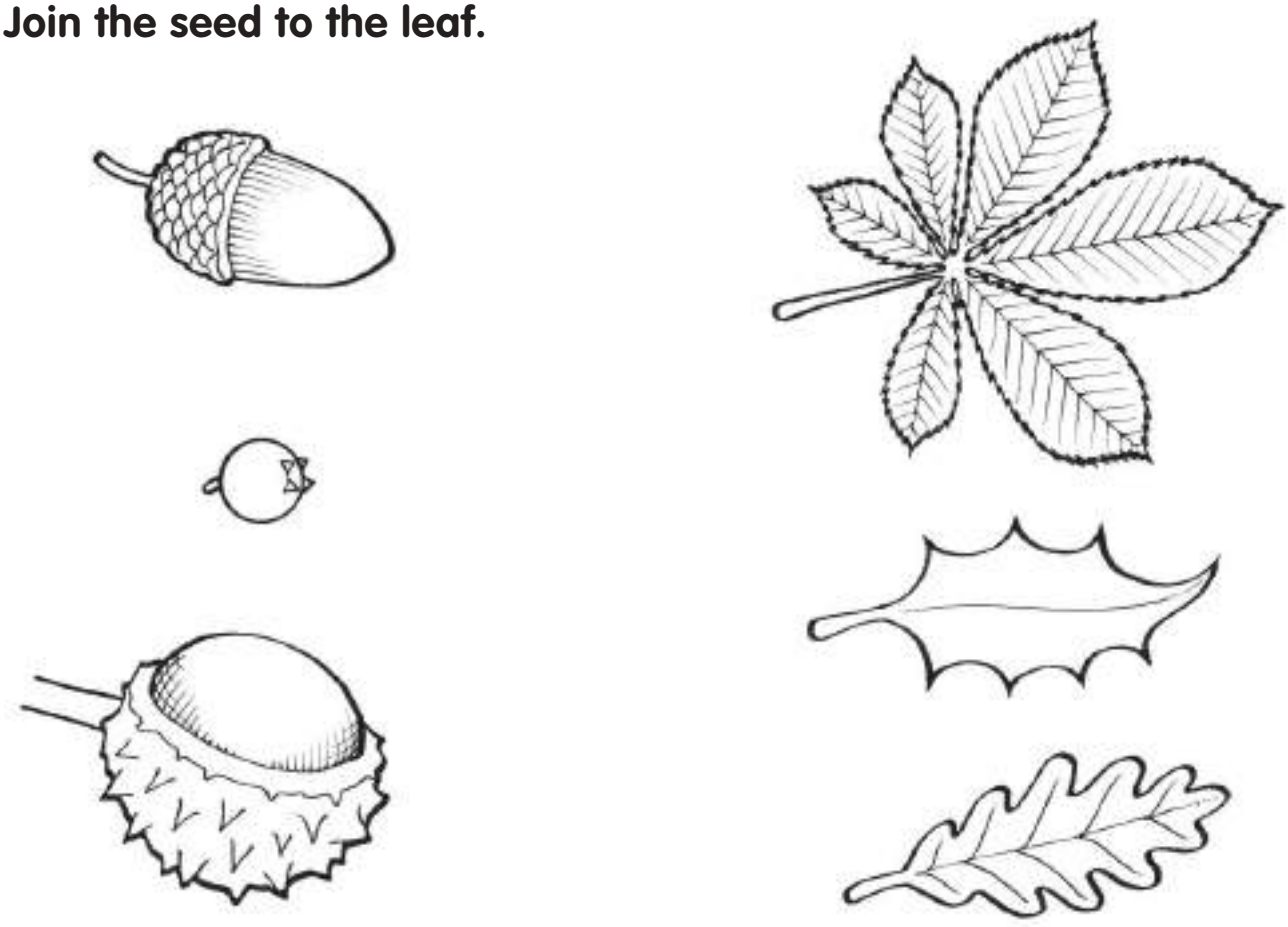


WORD BANK

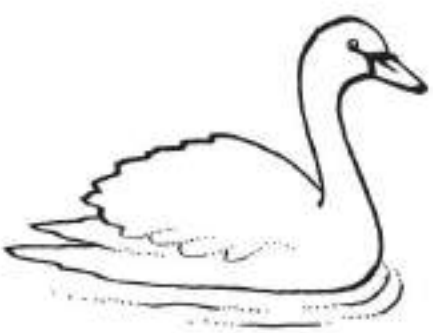
leaf branch trunk

bud root acorn

Join the seed to the leaf.



What eats acorns?



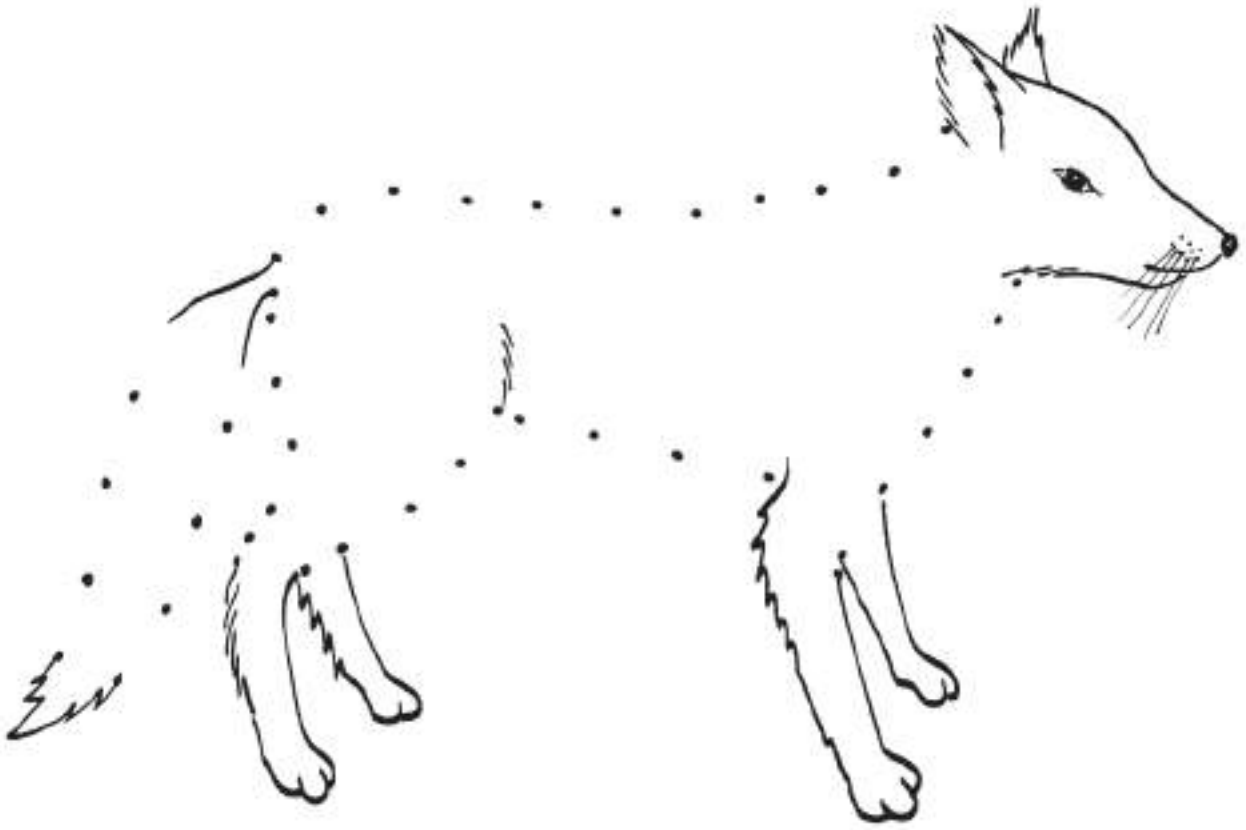
Wordsearch.

l	e	a	f	r	o	o	t	o
b	u	d	a	a	o	r	t	a
r	e	a	c	o	r	n	r	k
t	r	u	n	k	c	e	e	n
l	b	r	a	n	c	h	e	b

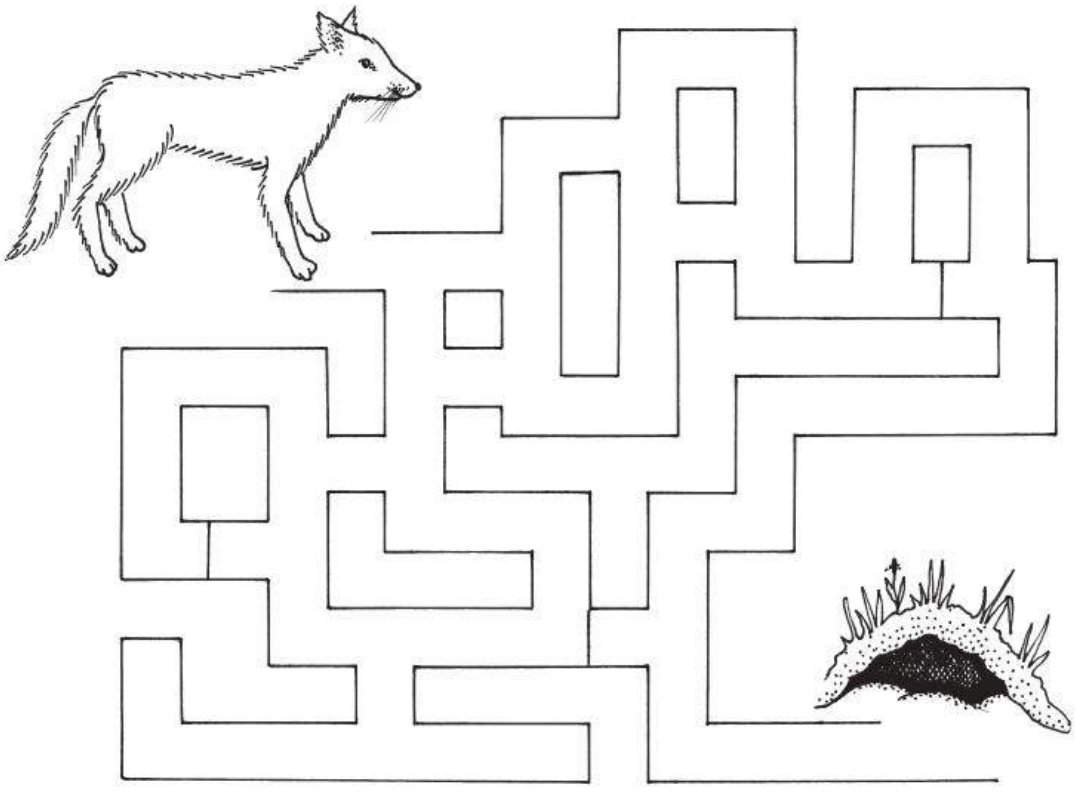
WORD BANK

oak	branch
tree	root
acorn	bud
leaf	trunk

Join the dots to finish this picture of a fox.



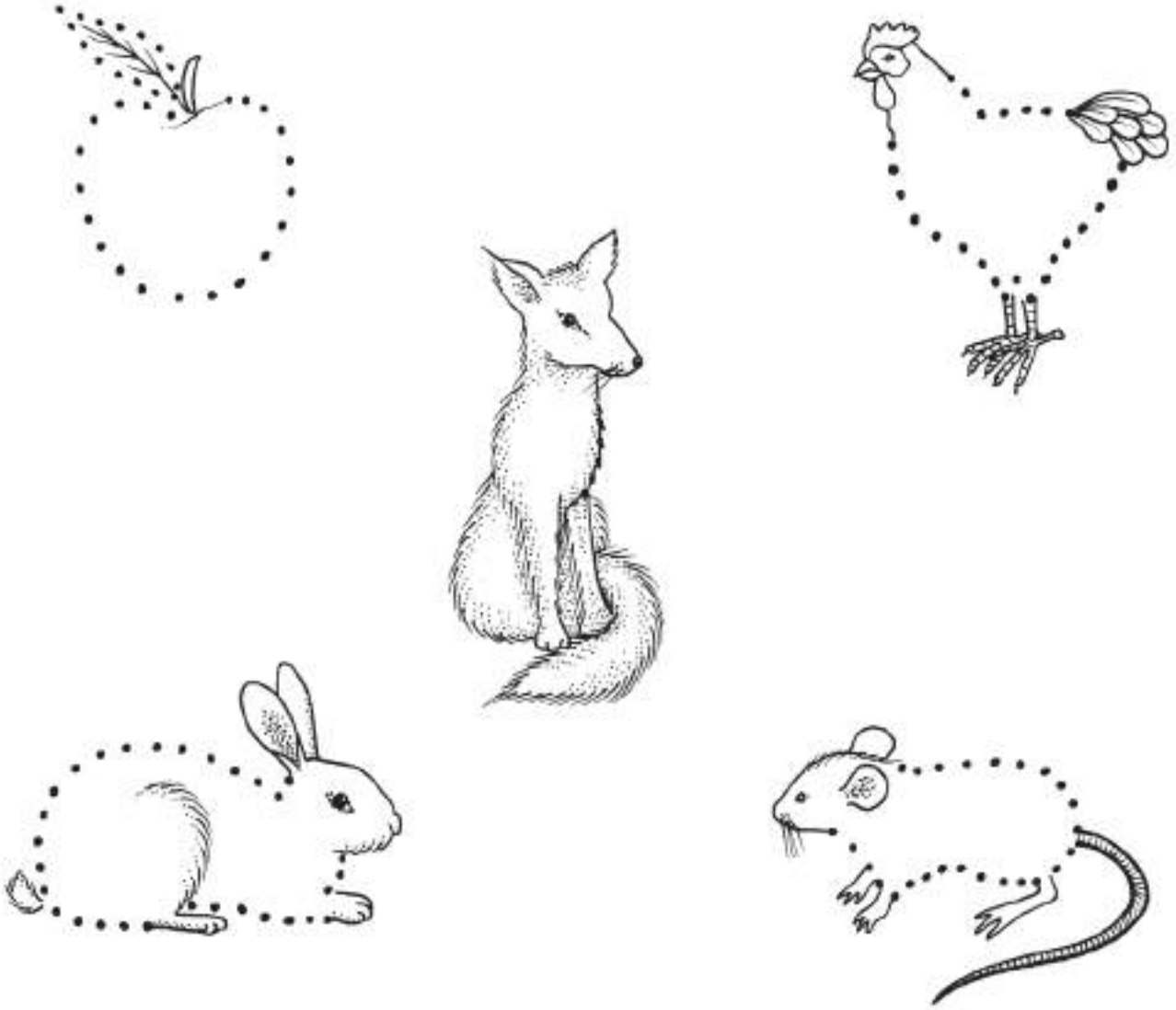
Guide the fox to his den.



Fill in the blank.

A fox lives in a _____.

What a fox eats.



Fill in the food chains.

grass	rabbit	
	mouse	fox
	chicken	

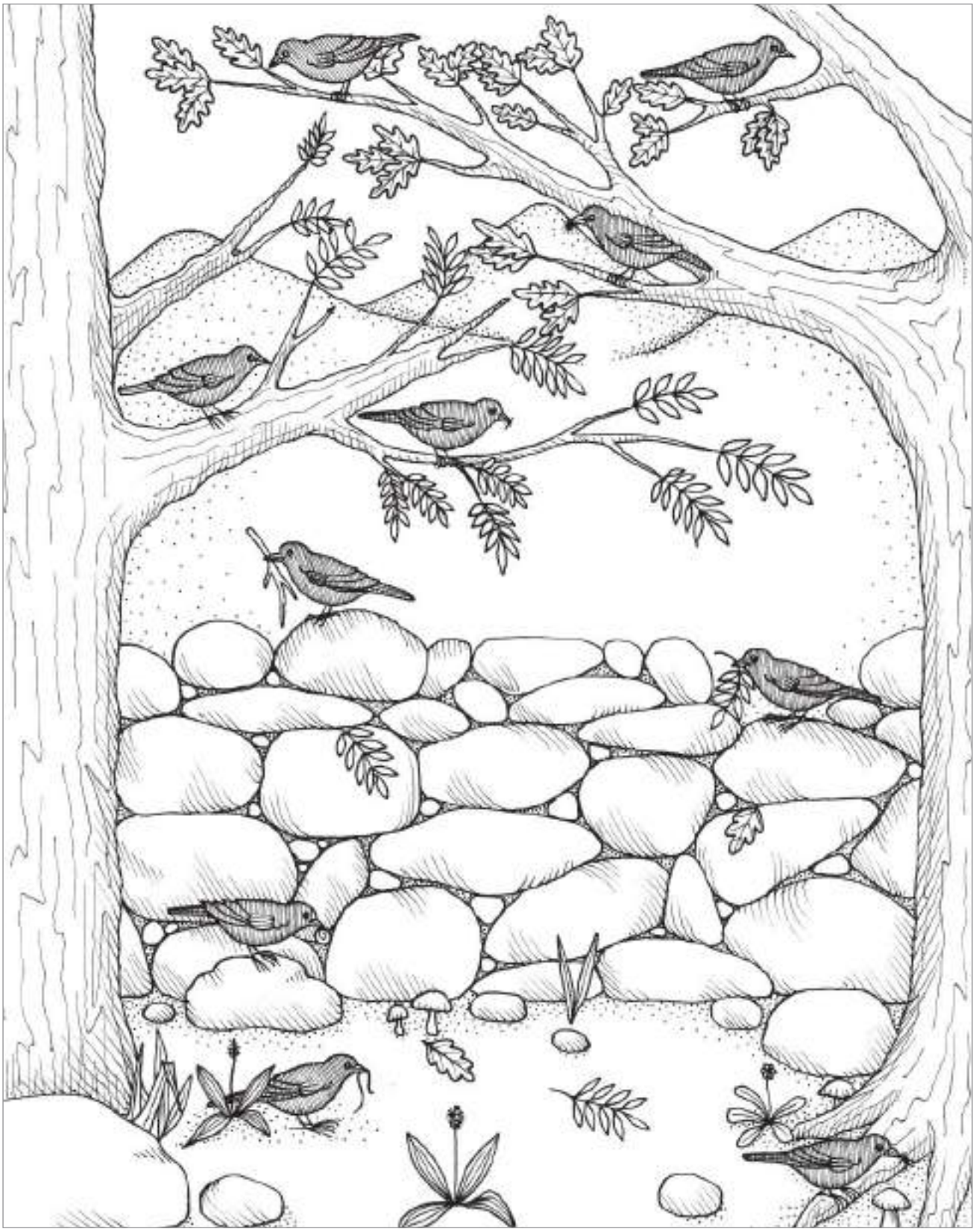
WORD BANK

mouse chicken rabbit fox acorn grain

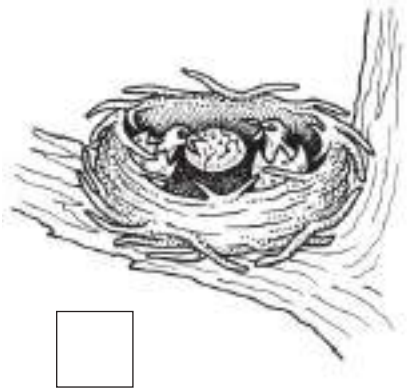
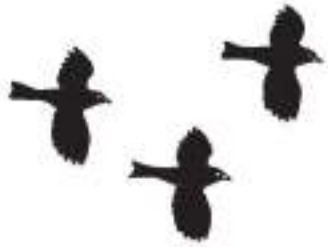
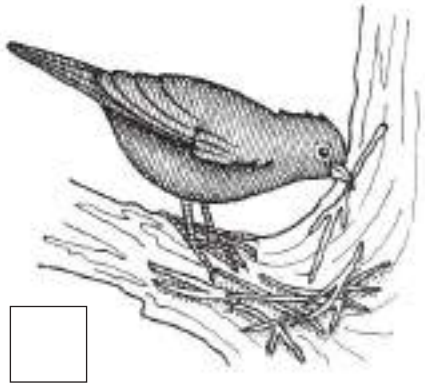
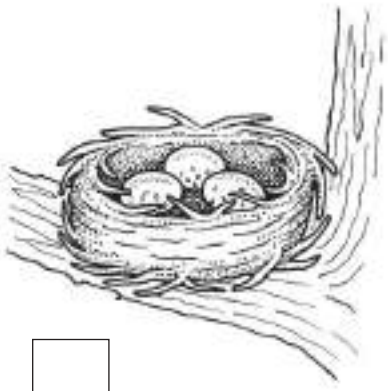
Write 'blackbird'.

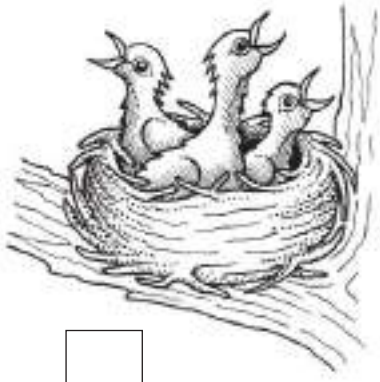
blackbird _____

How many blackbirds can you find in the picture?



Put the pictures in the right order by numbering the boxes 1-6.



Wordsearch. What do blackbirds eat?

s	n	a	i	l	h	b
e	x	p	e	d	r	e
e	s	p	i	d	e	r
d	l	l	a	c	z	r
y	u	e	b	x	n	y
r	g	n	w	o	r	m

WORD BANK

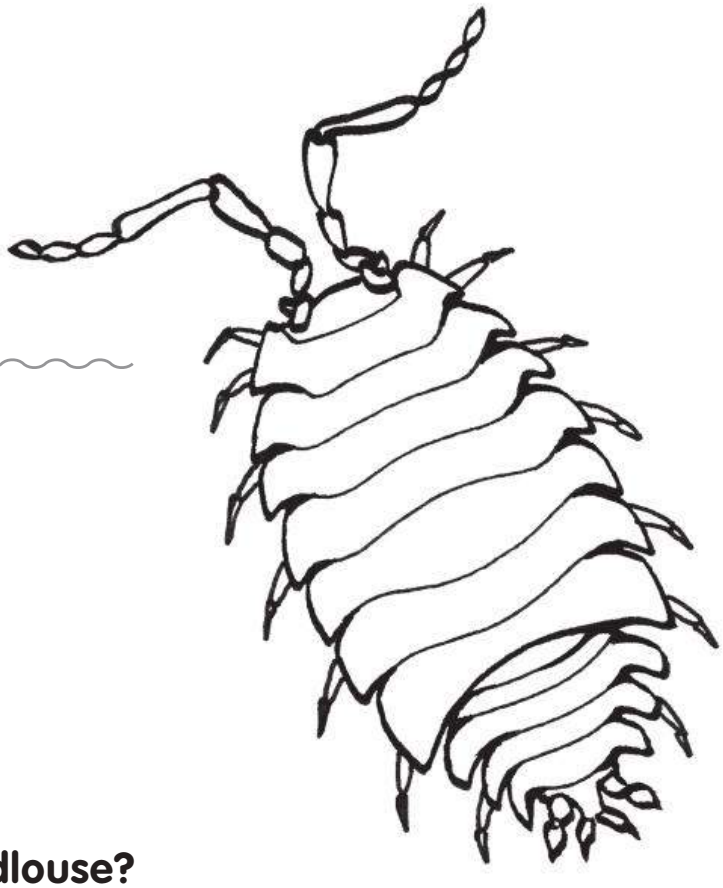
seed berry

spider slug

snail worm

apple

woodlouse



How many legs ☐

tails ☐

antennae ☐

has a woodlouse?

Fill in the blanks.

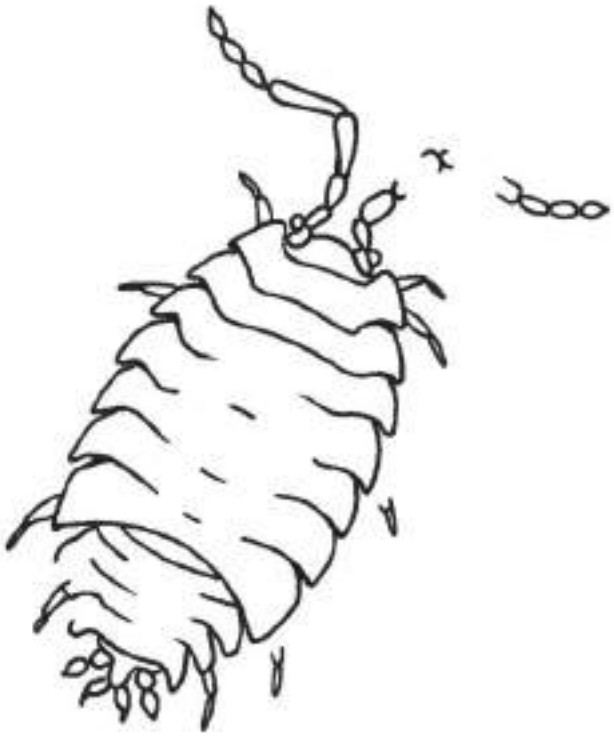
A woodlouse lives under _____ and _____.

A woodlouse eats dead _____ and _____.

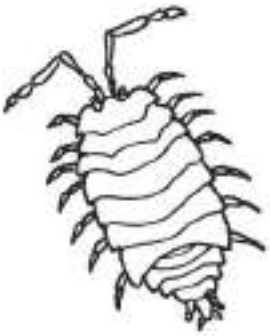
WORD BANK			
plants	stones	flowerpots	wood

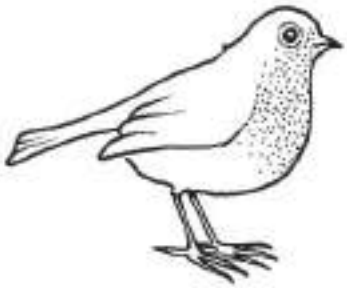
Go outside and find a woodlouse.

Finish the picture.



Name the animals that eat woodlice.





WORD BANK

blackbird **spider** **hedgehog** **robin**

Introduction to 2nd Class Worksheets

Self-heal

Ribwort

Ash

Squirrel

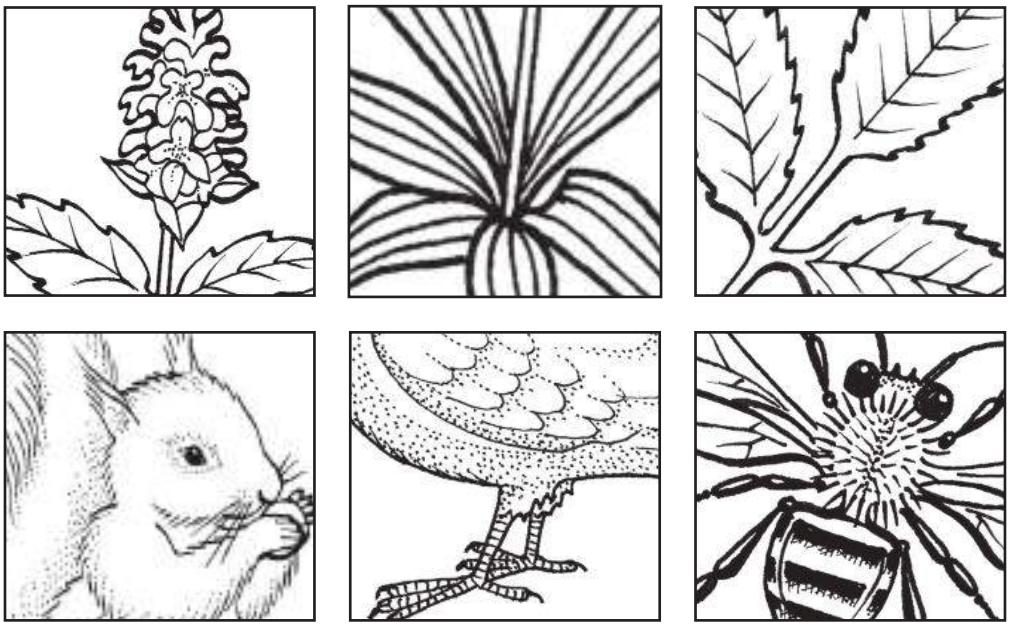
Pigeon

Bee

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher. The pupils should be taught the lessons on each topic first and then shown the pictures provided for each species.

There is much emphasis in these worksheets on field work. It is important to bring pupils out to the school grounds on a regular basis to do tasks so that they become familiar with wildlife outdoors. Make sure the item to be seen or collected is around at the time, so pick the time of year accordingly. Return any animals collected to the wild. The worksheets need not necessarily be done in the order in which they are given.

There is also emphasis on food chains and how animals live in the wild, so that completing the worksheets adds to the children's knowledge. By second class, the pupils will have already learned about a considerable number of plants and animals so these work sheets refer to species learned about earlier and act as a form of revision. The worksheets are designed to be photocopied and handed out to the pupils.



2nd Class Teacher Notes

Self-heal 1

Worksheet in two sections

Introduction to plant:
Pupils colour in the self-heal plant and leaves. Show the pictures of the plant to the pupils first so that they know what colour it is.

Making words:
How many words can the pupils make from the letters self heal?

Self-heal 2

Fieldtrip (Do this when self-heal is in flower)

Fieldwork outdoors and manual dexterity:
This is an official fieldtrip to carry out an experiment. Pupils read all the instructions indoors first. They then collect the equipment needed, go outdoors and follow the instructions. They count the different species in the study area and enter the results in the table. Then they decide which species is the most common.

The quadrant should be in an area of the school grounds – i.e. lawn or playing field – where self-heal grows. Teacher should check this out first.

Research:
Why is it called self-heal? Teacher should discuss this with class and get suggestions from them.

Ribwort 1

Worksheet in three sections

Absorbing information provided:
Pupils note what a ribwort looks like and where it grows.

Classification, identification and revision:
Pupils name the flowers in the drawing , colour each one in and write in the table where each one grows in the wild.

Ribwort 2

Fieldtrip

Recognising and finding ribwort:
Ribwort grows in lawns and school fields. Pupils collect a leaf and a flower of ribwort and stick the leaf on to the worksheet in class with sellotape.

Accurate description:
Pupils should give an accurate description – size, shape, parallel longitudinal veins.

Accurate drawing:
Pupils do an accurate drawing of the ribwort flower they have collected

Find out:
Why do they have no petals? They are wind-pollinated so they don't need to attract pollinators.

Ash Tree 1

Worksheet in two sections

Revision:
Pupils name the parts of the tree drawn – the answers are all in the word bank.

Tree life cycle:
Pupils match the months to the descriptions of what is happening to the tree.

Ash Tree 2

Fieldtrip

Fieldtrip:
Go on this fieldtrip in June or September when the leaves on the local ash tree are fully opened.

Counting leaflets:
Not all ash leaves have the same number of leaflets so see what variation there is in the leaves collected.

Accurate drawing and observation skills:
Pupils should be encouraged to do an accurate drawing of the leaf they have collected. On an ash bark, there could be moss, lichen and ivy.

Looking for creepy-crawlies:
Pupils shake the ash leaves into an upturned umbrella and see what falls in. Pooters to suck up delicate creatures can be used to transfer any insects into bug boxes for viewing.

Squirrel 1

Worksheet in two sections

Writing practice:
Pupils practise writing the words **red squirrel grey squirrel**

Observational skills:
Pupils should be able to detect 3 differences between red and grey squirrels from the black and white drawings. Colour is an extra difference.

Revision of knowledge about squirrels:
The answers to the questions are in the word bank

Squirrel 2

Worksheet in two sections

Ecological information:
Pupils fill out food chains – simple ones first, just the squirrel and his food and then, after seeing the drawing of the pine marten, the whole food chain.

Find out:
Where is the nearest place to the school that squirrels live.

Pigeon 1

Worksheet in two sections

Observation and comparison:
Pupils describe the differences in the drawing between the named parts of the wood pigeon and the feral pigeon. They then have to find out about their colour and their call.

Word search:
Two of the words are diagonal. The rest are vertical or horizontal. Answers are in the word bank.

Pigeon 2

Fieldtrip to see pigeons

Pigeons are very common birds – feral pigeons in towns and wood pigeons in rural areas. Show the pupils the photographs before going out.

Identification and observational skills:
What pigeons did they see and what were they like? What were they doing? How many were seen?

Food Chain:
Pupils identify and name the drawings in the food chains illustrated.

Bee 1

Worksheet in three sections

Writing practice:
Pupils practise writing the words bumble bee honey bee

Observational skills:
Pupils spot the differences between the drawn honey bee and bumble bee.

Information about bees:
Pupils fill in the sentences using the words in the word bank.

Bee 2

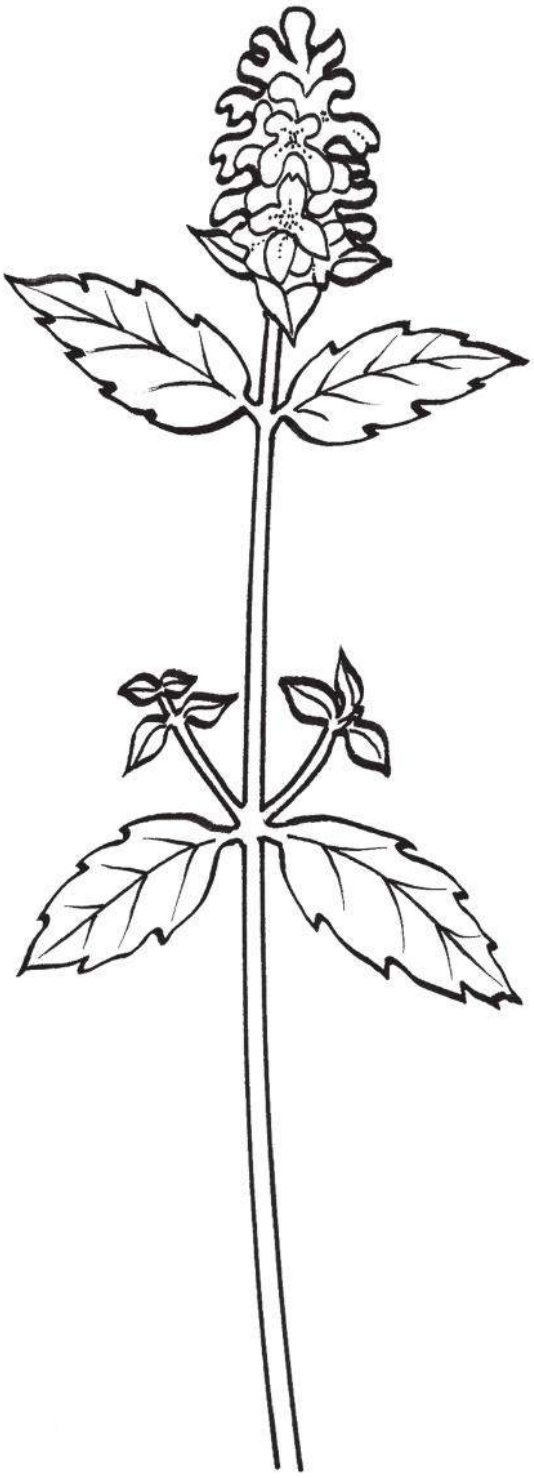
Fieldtrip to see bees

Observational skills:
Bees visit flowers on dry sunny days so make sure there are flowers to visit and that it is a dry day. Both honey bees and bumble bees may come. Encourage the children to stay quiet and observe the bees who will be busy visiting the flowers.

Bees collecting pollen will have yellow pollen baskets on their back legs. Bees collecting nectar stick their heads well into the flower as the nectar is hidden deep in the flower. Encourage the children to stay quiet, be patient and observe.

Improving the environment for bees:
Planting more nectar-bearing flowers. Bees love herbs such as sage and rosemary as well as flowering shrubs such as pyrocantha and hawthorn.

Colour the picture correctly. It has purple flowers and leaves.

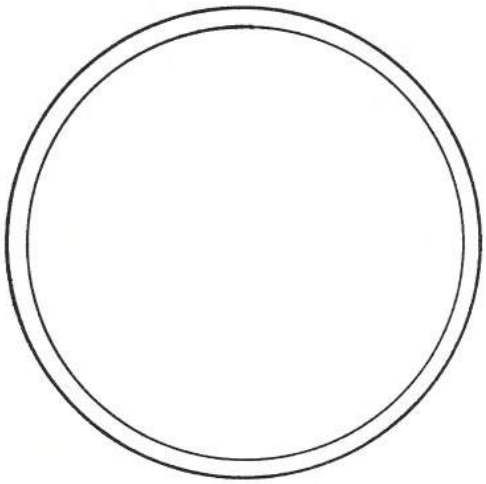


Why is it called 'self-heal'?

How many words can you make from 'self-heal'?

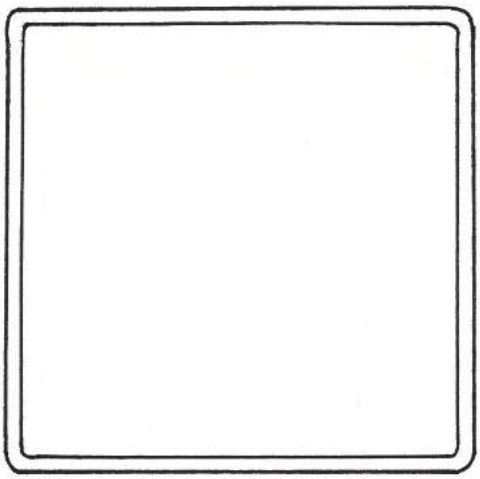
_____	_____	_____
_____	_____	_____
_____	_____	_____

Self-heal field trip. You will need:



hoop

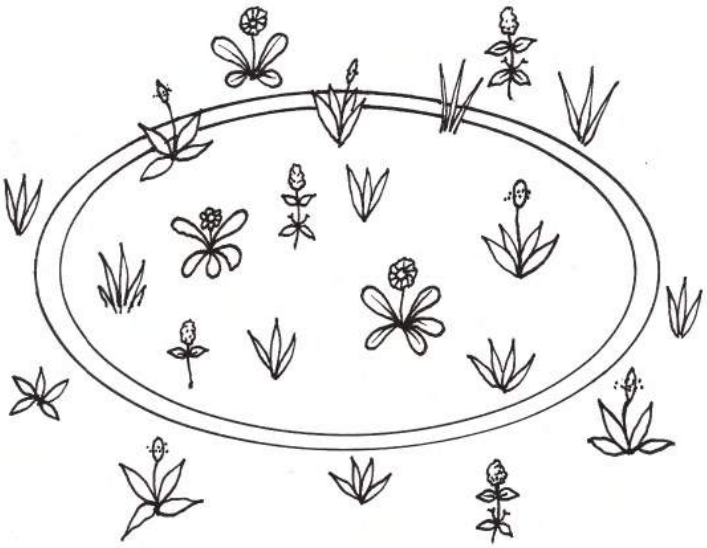
or



quadrat

Go outside and put the hoop or quadrat on a grassy area.
List the plants in the hoop that you know.

Plants	Number



Which plant is the most common? _____

Which plant is the least common? _____

Ribwort grows in grassy places.

Name the following flowers. Colour in the pictures.

Where do they grow?

Field	Hedge

Ribwort field trip. Go out and find ribwort.

We found ribwort in _____.

Collect a ribwort leaf and stick it here.

Describe the leaf.

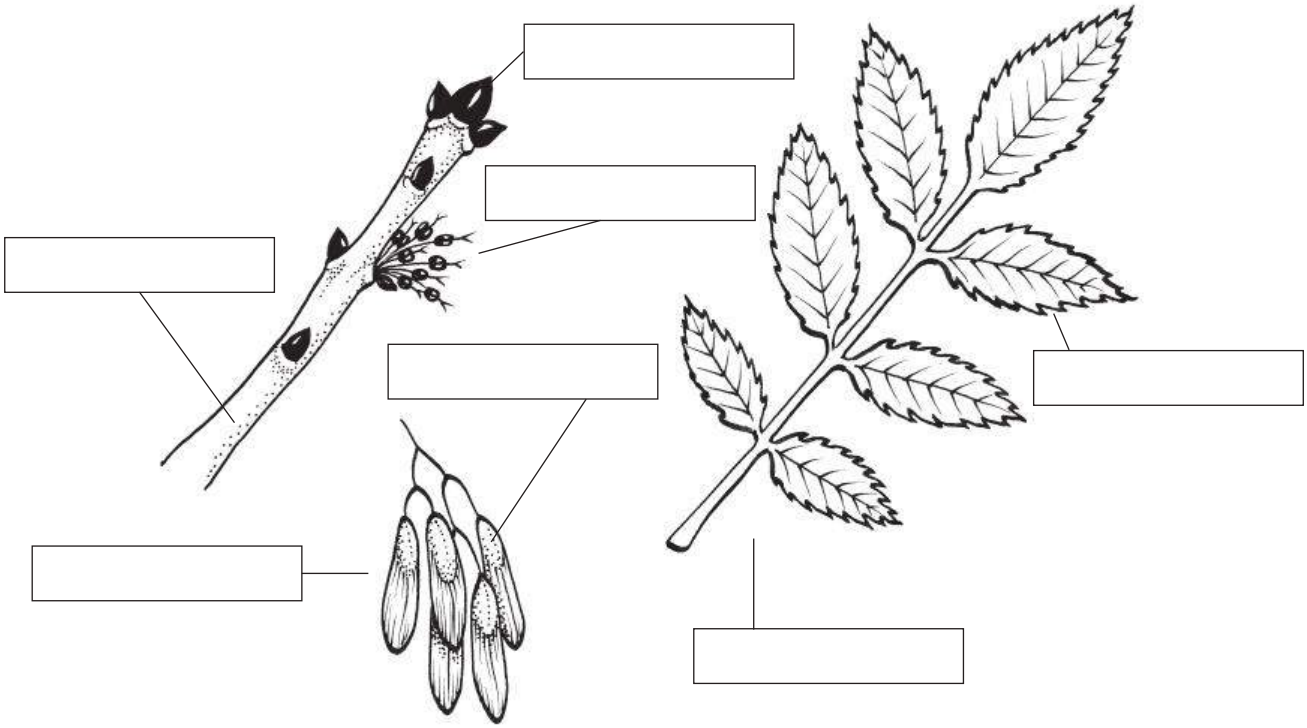
The ribwort leaf is _____

_____

Draw the ribwort flower.

Why has it no petals?_____

Name the parts of the ash tree.



WORD BANK						
leaf	leaflet	bud	twig	seed	flowers	keys

Join the month to the event.

January	full leaf cover
April	flowers on twigs
May	leaf fall
June	buds burst into leaf
August	seeds form
September	leaves turn golden
October	bare buds

Go on a field trip to see an ash tree.

Our ash tree grows in _____ .

My ash leaf has _____ leaflets.

Draw your ash leaf here.

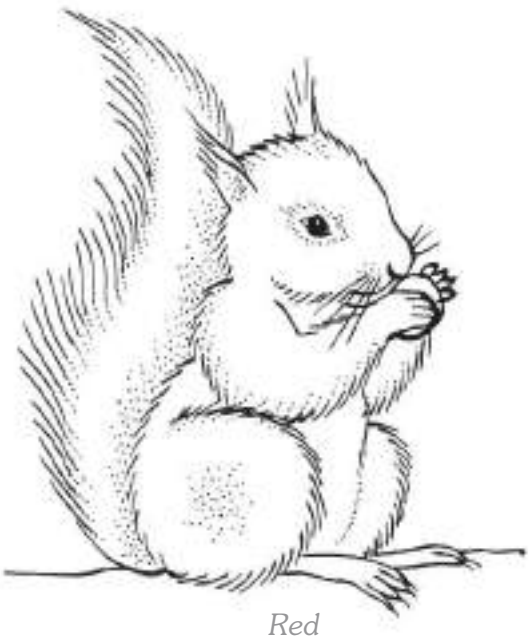
_____ was growing on the bark of our ash tree.

We found _____ on the leaves.

Write:

Red squirrel _____

Grey squirrel _____



Red

Grey

Write three differences between red and grey squirrels.

1. _____

2. _____

3. _____

Finish the sentences.

A squirrel lives in a _____.

All squirrels eat _____.

Squirrels do not _____.

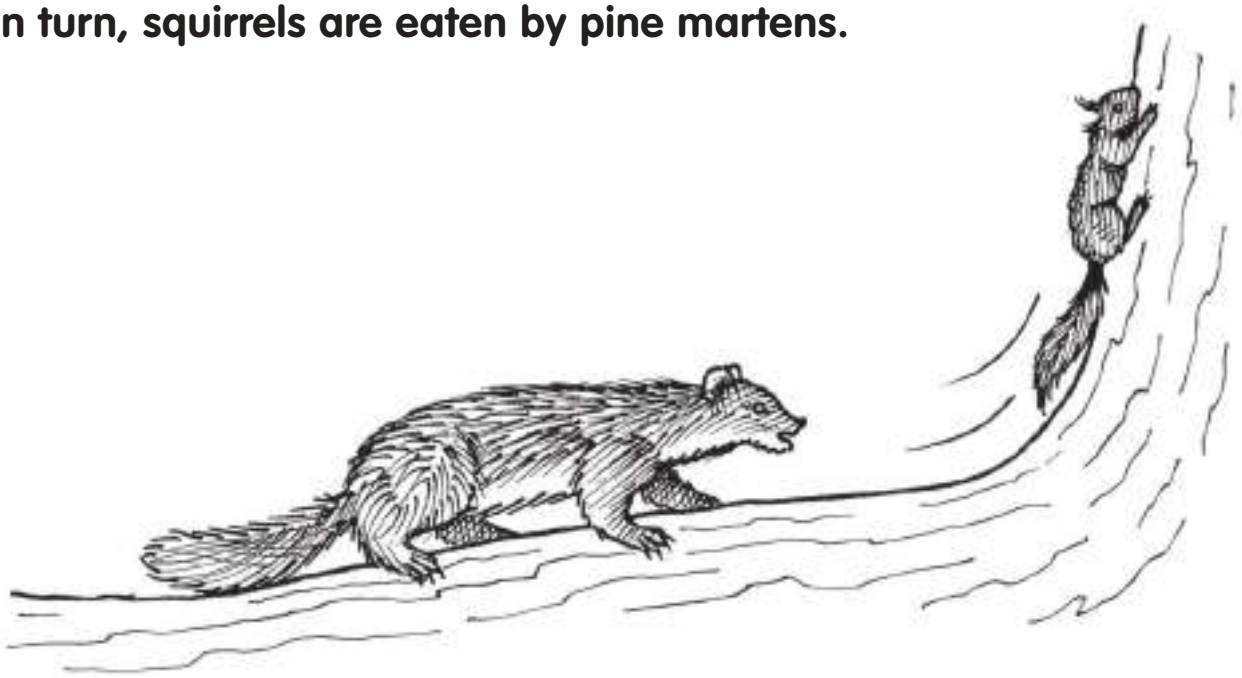
WORD BANK

acorns **drey** **hibernate**

All squirrels are herbivores. Fill in the food chains.

	→	squirrel
pinecones	→	
tree buds	→	

In turn, squirrels are eaten by pine martens.



Fill in a full food chain.

	→		→	

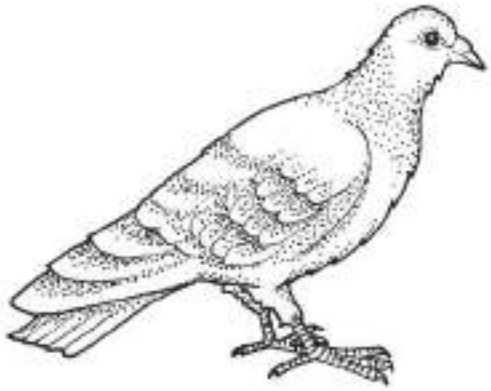
The nearest squirrels to our school live _____.

Write:

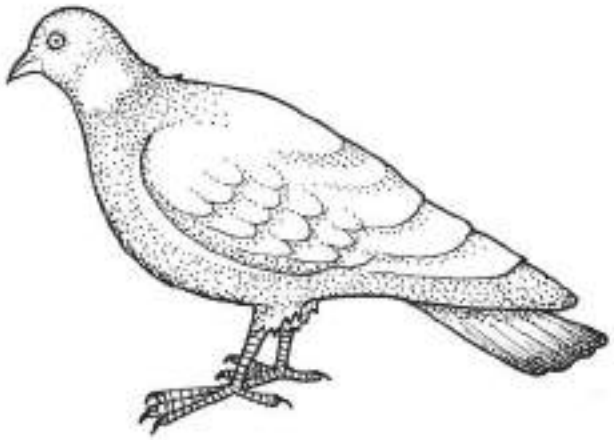
Pigeon _____

Wood pigeon _____

Write the differences between a wood pigeon and a feral pigeon.



Feral Pigeon



Wood Pigeon

Size	**smaller**	**bigger**
Beak		
Colour		
Call		

Wordsearch

T	J	N	D	H	A	L	F	O	X
P	I	G	E	O	N	G	L	O	C
C	P	M	G	S	V	B	O	L	A
O	R	Z	G	M	T	E	C	Q	B
O	Q	B	E	R	U	A	K	W	B
C	A	R	R	E	S	K	J	S	A
O	Z	E	P	Z	B	V	E	X	G
O	X	A	O	U	R	F	D	F	E
E	L	D	E	R	B	E	R	R	Y

WORD BANK

FOX
CABBAGE
PIGEON
DOVE
NEST
BEAK
FLOCK
COOCOO
BREAD
ELDERBERRY
EGG

Fieldtrip. Go out with your teacher to look for pigeons.

What type of pigeon did you see? _____

What do pigeons eat? _____

How many pigeons did you see? _____

What were they doing? _____

_____

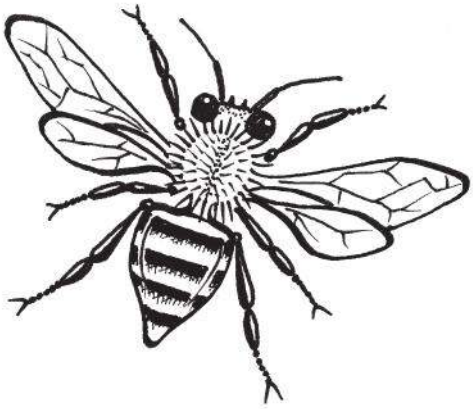
Write the names of the items in the pigeon's food chain.

WORD BANK				
cabbage	peregrine falcon	pigeon	seeds	fox

Write:

Bumble bee _____

Honey bee _____



Write the differences between bumble bee and honey bee.

Which is bigger		**smaller**	
Hairy all over		**not hairy all over**	
Small stripes on body		**stripes all over**	
Narrow waist		**wide all over**	

Finish the sentences.

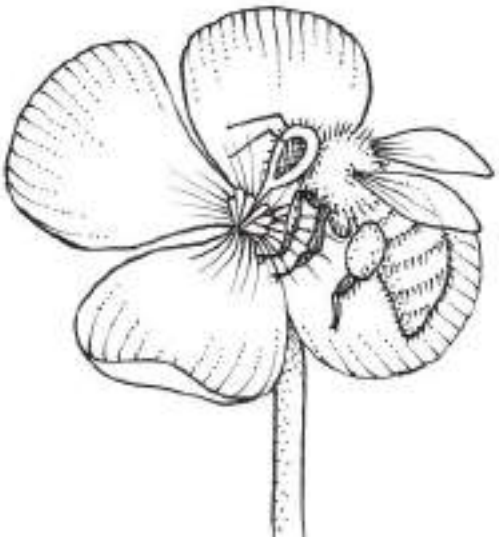
All bees gather _____ **and** _____.

All bees make _____.

WORD BANK

nectar **honey** **pollen**

Field trip. Go outside to look for bees.



Where did you see bees? _____

What was the weather like? _____

How long were you looking? _____

What types of bees did you see? _____

What were the bees collecting? _____

How do you know? _____

How can you make the school grounds better for bees? _____

_____

Your bee drawings.

Introduction to 3rd Class Worksheets

Robin-run-the-hedge

Nettle

Hawthorn

Frog

Swallow

Snail

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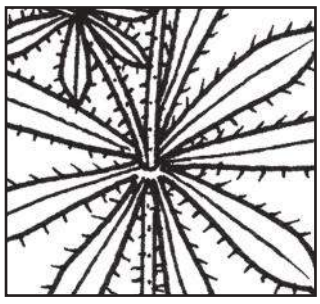
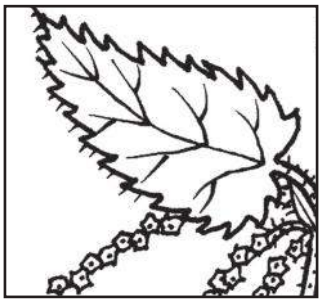
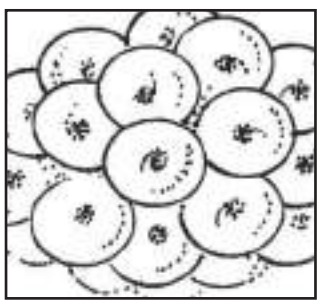
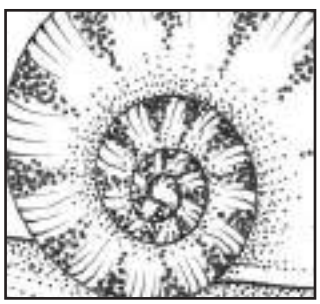







3rd Class Teacher Notes

Robin-run-the-hedge 1

Worksheet in two sections

Introduction to plant: Pupils colour in the robin-run-the-hedge plant and leaves. Show the pictures of the plant to the pupils first so that they know what colour it is. The flowers are tiny so they must look at the drawing very carefully to ascertain that it has 4 petals

Word Search: The English, Irish and Latin words for robin-run-the-hedge are hidden in the word search. As well as horizontal and vertical, words are also presented backwards in diagonal, horizontal and vertical fashions. All the words in the word search are given in the word bank.

Robin-run-the-hedge 2

Fieldtrip (Do this in late May or June)

This plant grows in hedges so you must bring the pupils there to look for it. They must collect a specimen each and examine it for flowers or seeds. Back in class, they should examine the plant with a magnifying glass or the lid of a bug box so that they can see the hooks on the leaves. Seeds can be planted in pots of compost to see when germination occurs. Is this a continuously growing plant or does it just germinate and grow once a year with the seeds set waiting until the next year to grow again?

Nettles 1

Worksheet in two sections

Introduction to the plant: Show the class the picture and do a lesson from the book. The flowers are wind pollinated and so have no petals, as they do not need to be seen by insects.

Cooking Skills: Consider making nettle soup in class, in early May when the nettles are young. You can make a full green nettle soup using nettles, onions and a stock cube or add potatoes to thicken it up and make it less green.

Nettles 2

Fieldtrip to see nettles

Nettles grow in ditches and neglected places so finding them should be easy. If you grasp a nettle firmly, it won't sting – it really does work but only the teacher should try this!

Hunting for insects: Teacher – wearing gloves – should run a sweep net through the nettles and then empty the contents into a bucket or dish. They can be gathered up by the pupils using pooters and put into bug jars with magnification lids. Caterpillars, greenflies and spiders all frequent nettles.

Hawthorn 1

Worksheet in three sections

Introduction to the tree: Show the class the picture and tell them about it, following the account in the book. Pupils then name the parts of the tree and colour in the leaves and haws. There is no word bank at this stage for third class but they should know leaf, flower, thorn, haws or berries.

Finding out the meaning of the names: Discuss this with the class so that they can work it out. Hawthorn – it has thorns and the berries are haws. Whitethorn is called that because the flowers are white. The May Bush gets its name because it blooms in May and sceach geal is, of course, bright bush, referring again to the white flowers.

Making words: Lots of words can be made from this – check in a dictionary if there are disputes.

Hawthorn 2

Fieldtrip

Time of Fieldtrip: In September, there will be haws on the tree and lots of creepy-crawlies on the leaves. In May, there will be leaves and flowers. There may also be ivy, moss or lichen on the bark.

Finding wildlife: Quiet observation may yield bird and flying insect sightings. They must watch for at least 5 minutes counted on a watch. Shake the branches into an open umbrella and observe the greenflies, ladybirds, spiders, caterpillars and shield bugs which drop in. Green things will be herbivores; ladybirds and spiders are carnivores; and birds such as robins, thrushes and blackbirds are omnivores.

Frog 1

Worksheet in two sections

Learning: Frogs are amphibians, which means that they can breathe on land through their lungs and in the water through their skin. Frogs do not have gills. They hibernate for the winter.

Food Chains: Frogs are carnivores and eat flies and in turn are eaten by herons.

Frog 2

Practical Work

It is well worth collecting frog spawn and observing the life cycle in class. It will take several weeks to fill out this sheet – a large version of it could be posted on the classroom wall and filled in as the results become apparent. It is not illegal for teachers to collect frog spawn for educational purposes in class. The National Parks and Wildlife Service automatically issues a licence each year to schools for this purpose so there is no need to apply.

An empty fish tank is good for keeping the frog spawn in and they should be fed with the daphnia-type of fish food, not the flakes. The tank must be cleaned weekly once the tadpoles are swimming around. Put some of the tank water into a bucket. Scoop up the tadpoles with a net and put into the bucket, then empty and clean the tank. If you use detergent be sure and rinse it very well as any soap residue will kill the tadpoles. Use rain water, ideally, to replenish the tank then scoop the tadpoles back in from the bucket. If you only have tap water, you should leave it stand for two days in a bucket or bowl so that the chlorine which is added to tap water can evaporate off. When the frogs have all their four legs, let them off in the school field, or if the holidays come before this stage, they must go back to the pond as they are yet not independent of water.

Swallow 1

Worksheet in two sections

Crossword skills: Following a lesson on the swallow, pupils should be able to fill in this crossword. Note that swallows always nest inside a building – it is house martins that nest outside under the eaves.

Observation skills: Recording the first swallow seen is a sign that Spring is here. This usually happens after St Patrick's Day. The nearest swallow's nest will be inside a barn – pupils may report that swallows nest in their barn every year.

Swallow 2

Worksheet in two sections

Learning about food chains: Swallows are aerial carnivores. They never come to land and eat worms. They only feed on flying insects, so have to return to Africa in winter as they cannot eat berries or ground-dwelling creepy-crawlies.

Dangers to Swallows: A class discussion here about a swallow's life and the problems faced, such as bad weather and not enough insects; no access to sheds as farmers repair old buildings; dangers on the journey to Africa e.g. adverse winds, running out of fat reserves, being hunted by hobbies (birds of prey in warmer countries that chase swallows).

Snail 1

Worksheet in three sections

Parts of the snail: Pupils can fill these in following class lesson

Fieldtrip: School grounds after Easter will be a good habitat for snails. They like to hide during the day so look behind and below sheltered places.

Creating snail traps: Putting out shelter for snails will make them easier to find. Give each class group of four pupils a piece of carpet, an old mat, a piece of lino etc., to place it where it might provide shelter.

Snail 2

Snail experiment

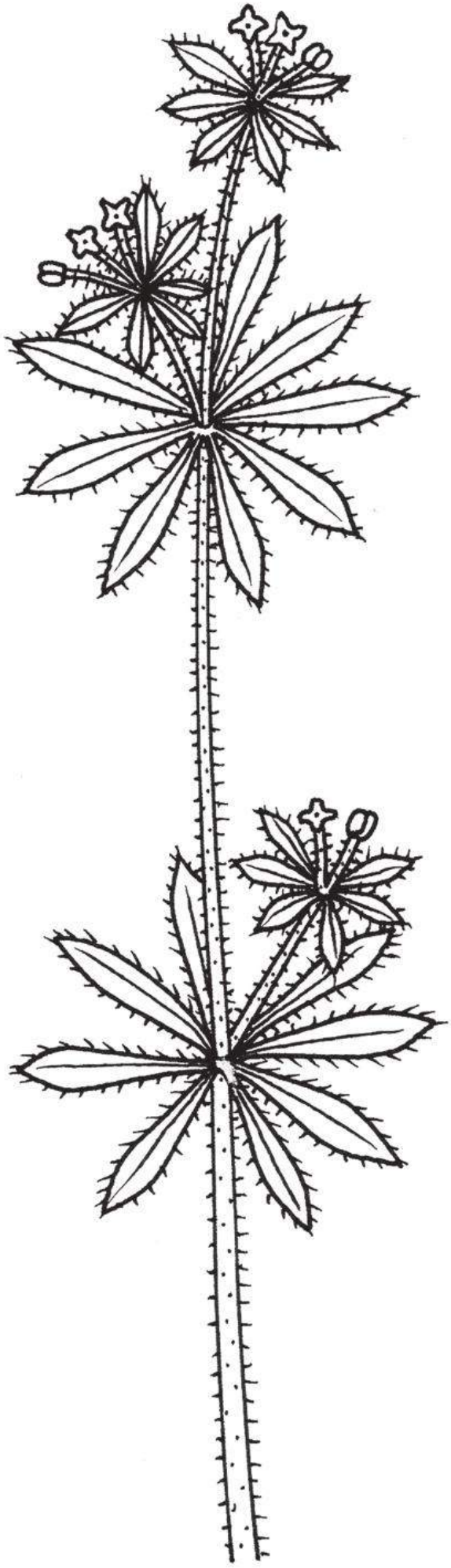
This is to see how many snails are in the school grounds. The lower the percentage of marked snails found the second time, the more snails are in the area. Let's suppose you mark 40 snails the first time and then the second time you find 40 snails and only four of them are marked. Four is 10% of 40. So the first group you marked was only 10% of the whole population which is this case is 400 snails. But you needn't trouble 3rd class with such higher maths!

Colour in the drawing and name:

1. the leaves

2. the flowers **(look carefully)**

The flowers have _____ petals.



Wordsearch

The words in the word search are all different words for this plant in English, Irish and Latin. Look for them across, down, diagonally, and backwards.

R	O	B	I	N	R	U	N	P
C	L	E	A	V	E	R	S	H
Y	R	E	P	C	H	S	F	M
K	A	D	S	E	K	S	C	U
C	Q	U	D	O	L	A	D	I
I	W	C	A	S	O	R	V	L
T	H	E	H	E	D	G	E	A
S	U	L	H	B	R	A	G	G

WORD BANK

ROBIN RUN THE HEDGE
STICKY BACK
GARBHLUS
CLEAVERS
GOOSE GRASS
GALIUM

Fieldtrip

Go with your teacher to look for robin-run-the-hedge.

We found robin-run-the-hedge _____

_____

The leaves of this plant are all covered in sticky hooks.

Why? _____

Does your plant have flowers? _____

Does your plant have seeds? _____

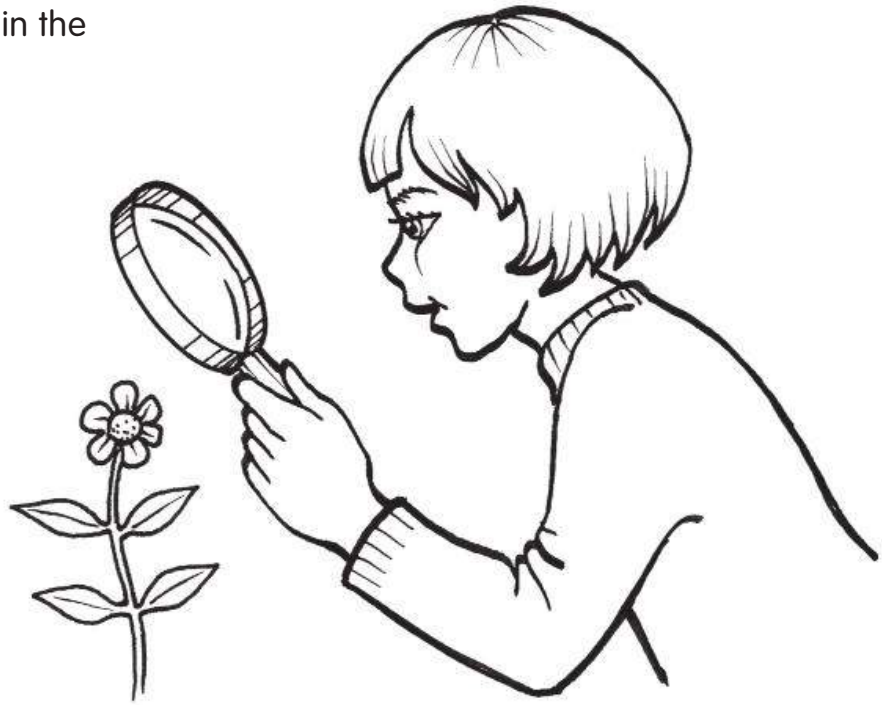
Bring a plant and seeds back to class.

Examine your plants and seeds with a magnifying glass

We saw _____
through the magnifying glass.

Collect the seeds and plant them in a yoghurt pot of soil. Place in the window and keep moist.

How long does it take for the seeds to grow?



Nettles are plants that grow in neglected places.

Name:

1. the leaves

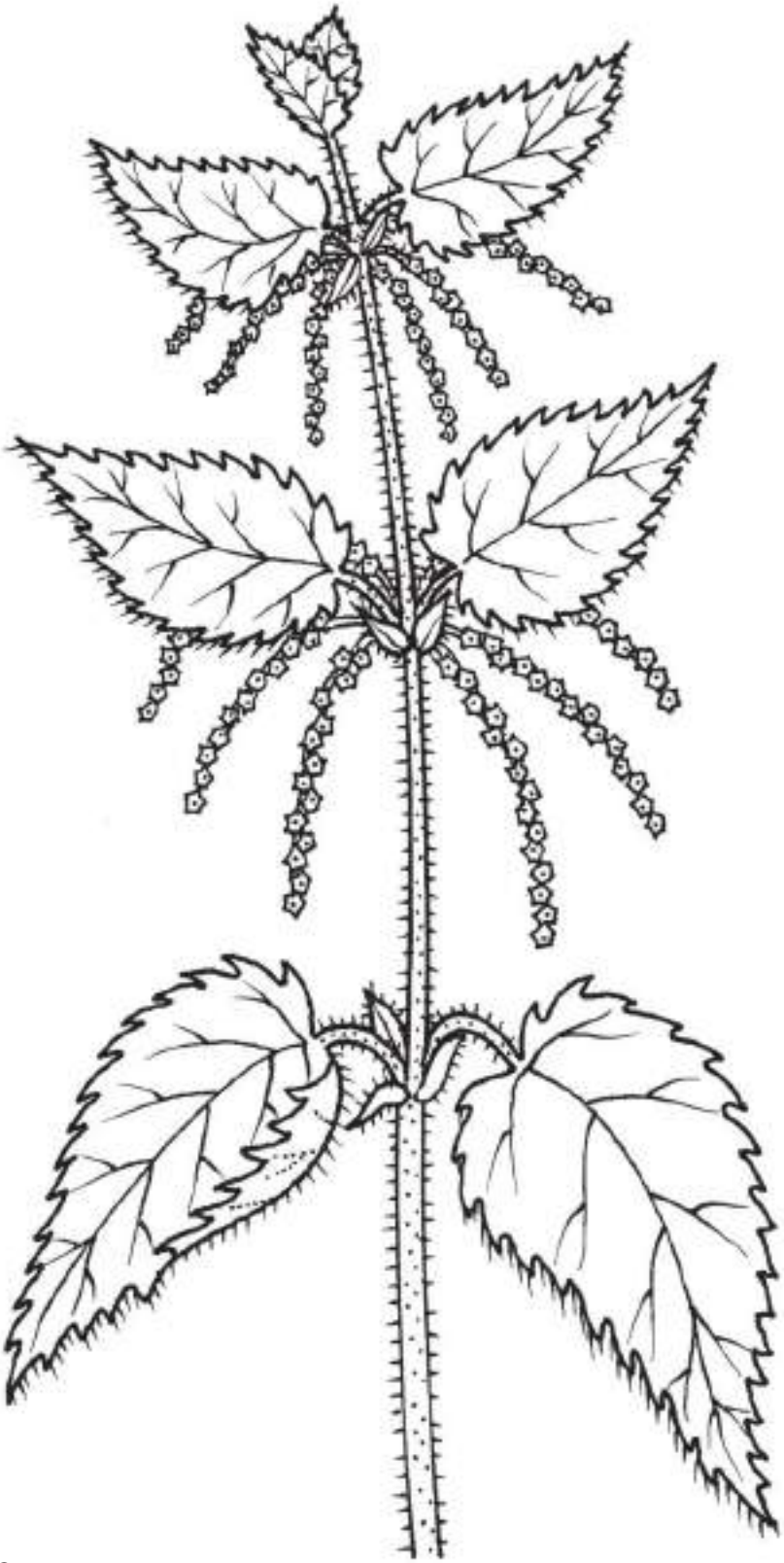
2. the stem

3. the flowers

Why do nettle flowers have no petals?

_____

_____



Nettles were used for food by people long ago.

FIND OUT:

How were they used for food?

_____was made from nettles.

Lots of wildlife eat nettles:

_____eat nettles.

_____eat nettles.

Fieldtrip

Nettles grow in groups and clumps.

They have stings on the leaves so **BE CAREFUL.**

We found nettles _____

Did you see any creatures on the nettles when you just looked at them? _____

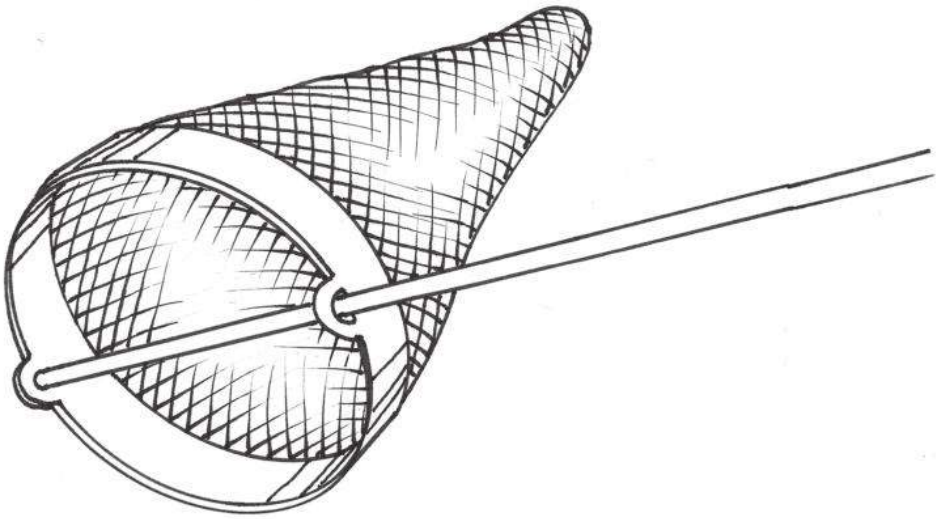
Teacher will sweep the nettles with a sweep net to catch creatures on the leaves.

Empty the net into a bucket or tray.

We found _____

_____

on our nettles.



What is supposed to be good for curing the sting of a nettle?

_____

Why is this? _____

Does it work? _____

Name the parts of the hawthorn drawn here and colour them in.

The following are all names for this tree. Can you explain why?

It is called a hawthorn tree because _____

It is called a whitethorn tree because _____

It is called a May bush because _____

It is called a sceach geal in Irish because _____

How many words can you make from the letters HAWTHORN?

(You should get at least four two-letter words, ten three-letter words, ten four-letter words and four five-letter words).

_____

_____

_____

_____

_____

Fieldtrip

This is a fieldtrip to find a hawthorn tree.

The teacher will need: an umbrella and Pooter jars with lids.

Date of fieldtrip _____

Is this a summer fieldtrip or an autumn fieldtrip? _____

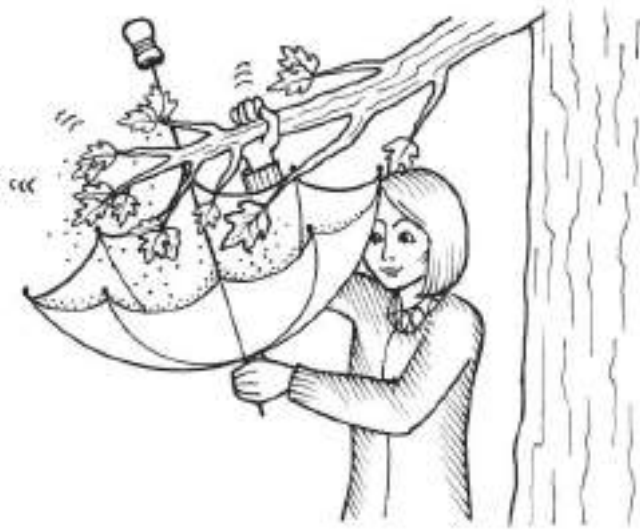
Look carefully at the hawthorn tree.

My hawthorn tree has _____. The bark of the tree has _____ growing on it.

WORD BANK: **leaves, flowers, thorns, buds, haws**

Wildlife visiting my tree

We watched quietly for five minutes and we saw _____ visiting our hawthorn tree.



They came to our tree to look for _____

Our teacher shook the leaves into the umbrella.

We found _____ in the umbrella.

Which of these creatures in the umbrella are

Herbivores? _____

Carnivores? _____

Omnivores? _____

Frogs are:

☐ **Birds** ☐ **Fish** ☐ **Amphibians**

Frogs can breathe in air and in water ☐ True ☐ False

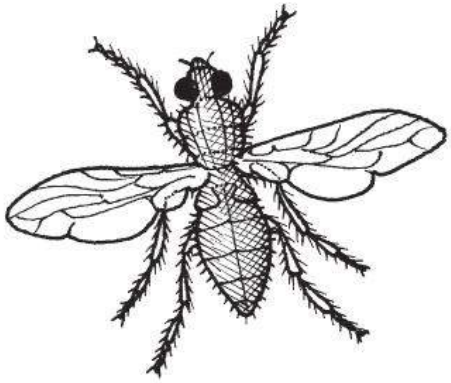
Frogs hibernate in the winter ☐ True ☐ False

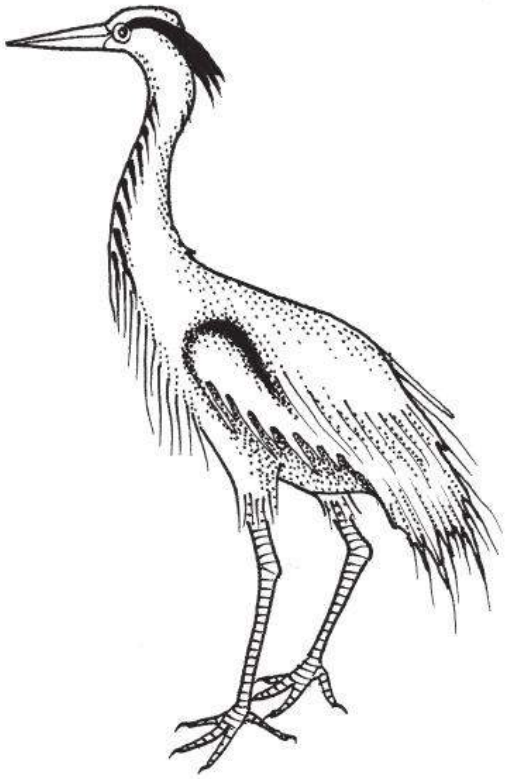
Frogs breathe in air through their _____.

Frogs breathe in water through their _____.

Choose the correct words from the word bank. WORD BANK: **gills, skin, lungs**

Name the items in the frog's food chain.





☐ — **Frog** — ☐

Lifecycle of a frog

In February, frogs wake from hibernation.
They go to the nearest pond to lay frog spawn.

TO DO:

1. Go out and find some frog spawn. Where did you see the frog spawn?

_____

Date on which you found the frog spawn _____

2. Bring back frog spawn to the school pond or to a fish tank in class.

Watch the tadpoles hatch out.

Our tadpoles hatched on _____

3. Feed the tadpoles with fish food and clean out the water every week.

DO NOT USE TAP WATER.

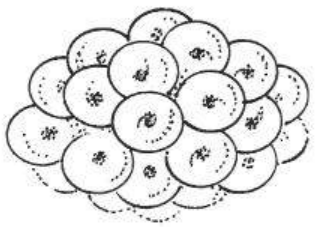
4. Tadpoles grow one pair of legs at a time.

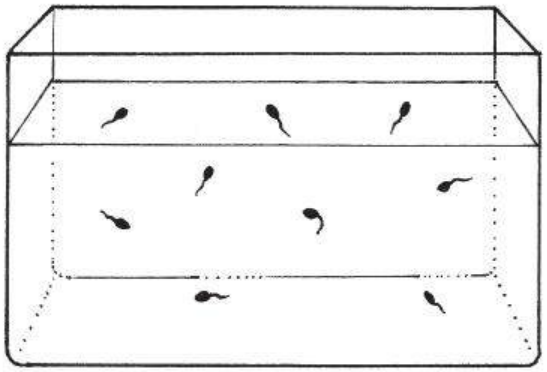
Our tadpoles grew their _____ legs first on_____

5. Our tadpoles grew their second pair of legs on _____

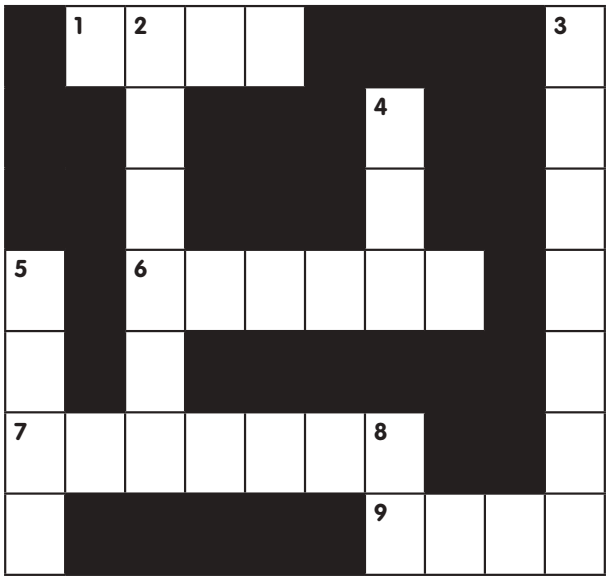
6. We released our tadpoles/frogs before the summer holidays on

_____





Crossword

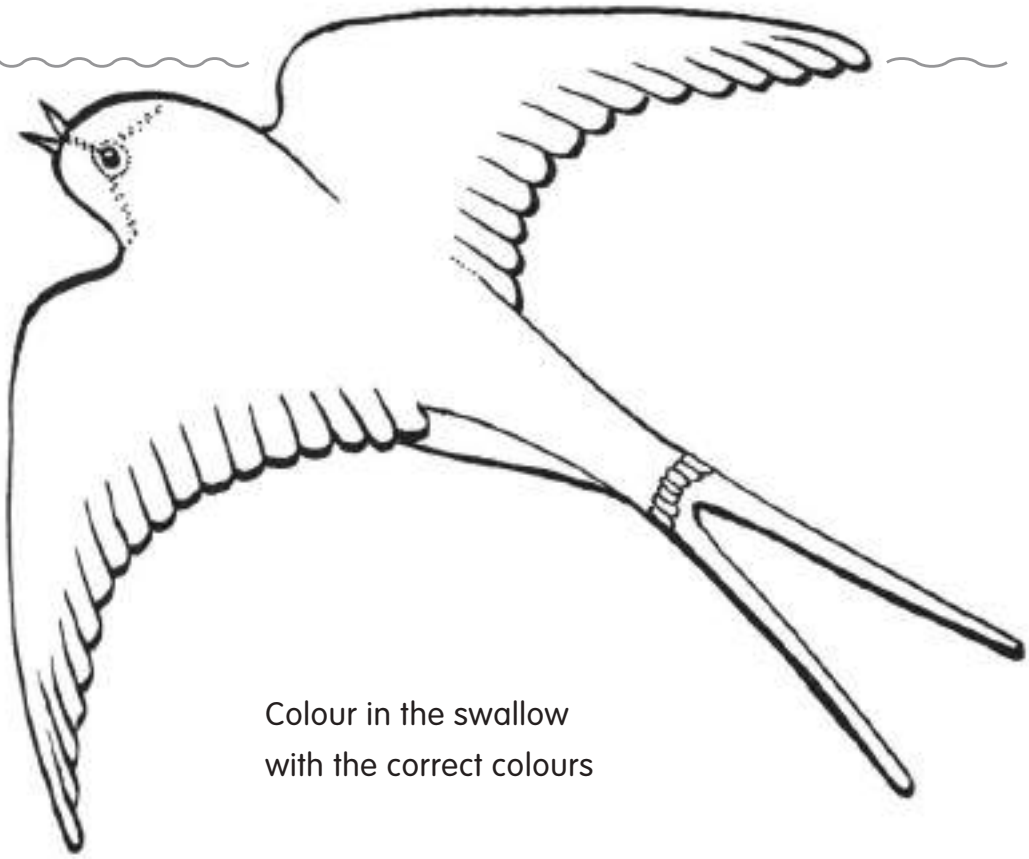


Across

1. A swallow often builds its nest inside one of these.
6. Swallows ALWAYS build their nests _____ a building.
7. They arrive back from Africa in March.
9. Swallows lay five of these.

Down

2. Swallows go here to spend the winter.
3. They feed only on these.
4. They gather this in their beaks to build a nest.
5. A swallow's home, made from mud.
8. Me and You.



Colour in the swallow with the correct colours

When did you see the first swallow this year? _____

Where is the nearest swallow's nest? _____

What colour is a swallow's face? _____

FIND OUT:

What is the Irish word for a swallow? _____

Name the creatures

Swallows are carnivores and only feed on flying insects. Name all the following creatures and draw a line between the swallow and those it feeds on.

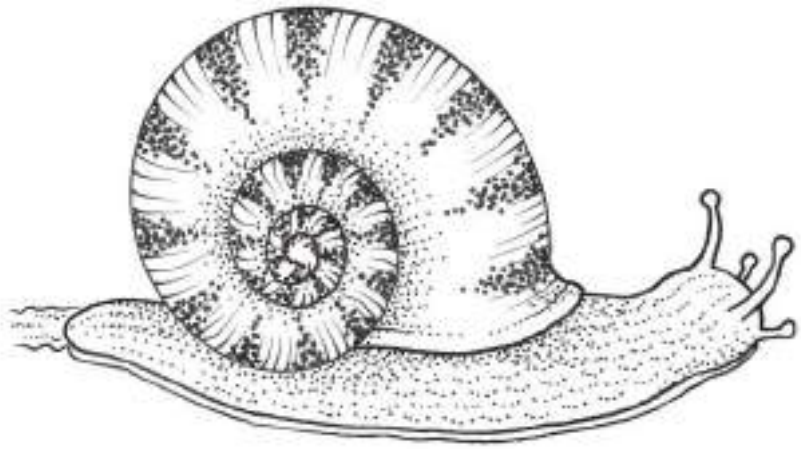
WORD BANK	BUTTERFLY	EARTHWORM	SWALLOW	MOSQUITO
	SPIDER	WOODLOUSE	DRAGONFLY	INDOOR LONG-LEGGED SPIDER

Fill in the two food chains below.

		Swallow
		Swallow

What are the dangers faced by swallows during their lives?

Name the parts of the snail



WORD BANK	EYES	FOOT	MUCUS	SHELL	ORGANS OF SMELL

Fieldtrip to see where snails live

Weather on day of fieldtrip_____

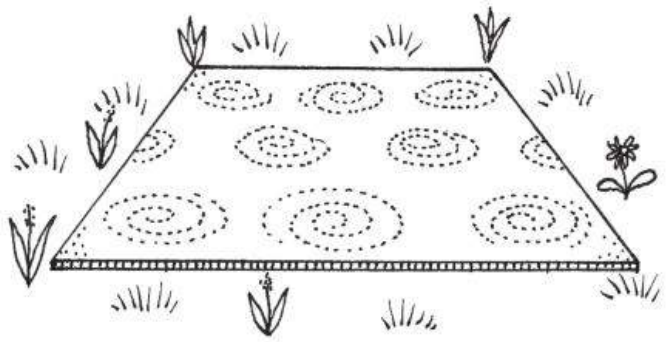
Where did you find the most snails?_____

Were they all garden snails?_____

Describe any others you found_____

Making shelters for snails

You will need lots of snails for the experiment on worksheet 2 so you need to make places for snails to hide in.



You will need – an old mat, or a piece of carpet, or a piece of linoleum, or a large plastic sack – one for each group of 4 children in class, if possible.

TO DO:

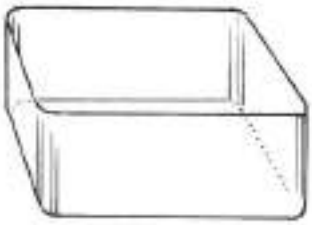
Place them on the ground near the hedge or wall where they will not be disturbed, walked on or taken away. Leave them there for at least a week. Then you can move on to worksheet 2 for snails.

Experiment

Ecological experiment to study how many snails are in the school grounds

Week 1: The class works in groups of 4 children

For each group you will need:



A large plastic box

A bottle of coloured nail varnish

TO DO:

Each group gathers as many snails as possible remembering where they got them. There should be lots under the carpet traps.

Count the snails. Number collected _____

Mark each snail with a small dab of nail varnish on top of the shell.

Release all the snails back where you found them and put the carpet traps back on the ground.

Week 2: Go out again in your groups and collect all the snails you can find. Put them into the plastic box and count them.

Total number of snails found: _____

Number of snails with nail varnish marks: _____

Number of snails with no nail varnish marks: _____
This is the number of new snails in the school grounds this week

Did you find all the snails you marked with nail varnish last week? _____

Why do you think some are missing?_____

Introduction to 4th Class Worksheets

Lords and Ladies

Vetch

Elder

Badger

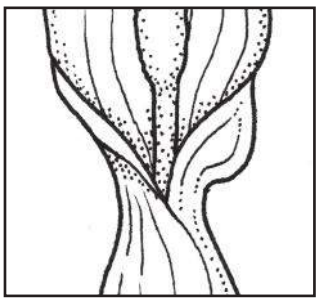
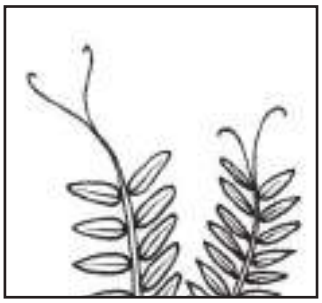
Heron

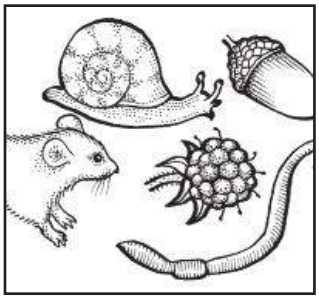
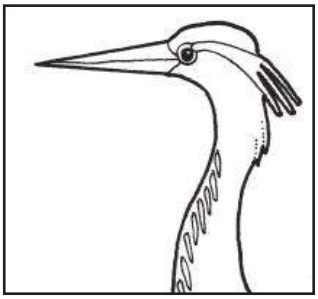
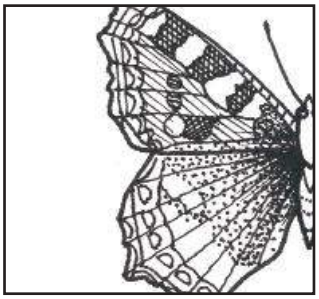
Butterfly

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves, after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher. The pupils should be taught the lessons on each topic first and then shown the pictures provided for each species.

There is much emphasis in these worksheets on field work. It is important to bring pupils out to the school grounds on a regular basis to do tasks so that they become familiar with wildlife outdoors. Make sure the item to be seen or collected is around at the time, so pick the time of year accordingly and return any animals collected to the wild. The worksheets need not necessarily be done in the order in which they are given.

There is also emphasis on food chains and how animals live in the wild so that completing the worksheets adds to the children's knowledge. By fourth class, the pupils will have already learned about a considerable number of plants and animals so these worksheets refer to species learned earlier and act as a form of revision. This is particularly evident in the worksheets on plants and trees. The worksheets are designed to be photocopied and handed out to the pupils.

4th Class Teacher Notes

Lords and Ladies 1

Worksheet in three sections

Introduction to plant: Pupils colour in the Lords and Ladies plant in both summer and autumn form. Show the pictures of the plant to the pupils first so that they know what colour it is.

Revision: Four flowers that live in hedges and have already been learned by the pupils are shown here – primrose, bluebell, robin-run-the-hedge and nettle. They should recognise each one.

Working things out: Why should these plants flower in spring? What do plants need to grow? – light. When the leaves come on the trees in the hedge, these small plants do not get enough light to flower. So they have adapted to where they live by flowering early.

Lords and Ladies 2

Fieldtrip (Do this in April or early May – after Easter)

Ability to find plants: The plant has been described to them in class. Now they should be able to find it in a hedge or wooded part of park but do not let them pull them all up.

Genetic ability to smell the particular smell of the stalk of Lords and Ladies: Teacher pulls a plant and crushes the stalk. Choose a plant that is ripe and has insects at the bottom of the flower. Ask each pupil in turn to describe the smell. Note who can and who can't detect the smell. Do the majority smell it or not?

Vetch 1

Worksheet in two sections

Noticing features of the plant: Knowing how the plant grows towards the light, pupils identify the relevant parts of the plant.

Word search: Pupils find all the words that have to do with vetch. Horizontal, diagonal, vertical and backwards are all used to find the words in the word bank.

Vetch 2

Fieldtrip

Revision: The visit to the hedge to look for flowers is not just for vetches, but for all the other hedge plants they have learned. They prove their knowledge by collecting a leaf from each one and sticking it to a page in class with the correct name. They can use several pages to stick down the leaves if necessary. (Sellotape is good for this).

Elder 1

Worksheet

Revision: The five trees they should know by now, together with the new one – elder – are revised here. They should be able to recognise the leaf of each one and associate the seed/berry/nut with each one.

Elder 2

Fieldtrip

Revision: This fieldtrip is to revise the trees they know. They should be able to recognise all the main trees in a normal Irish hedgerow by now. Collecting a leaf specimen adds to their record in class.

Finding creepy-crawlies: Shaking a branch of each tree in turn gives a haul of creepy-crawlies in the upturned umbrella. Best results are found on warm sunny days in June and September. Holly trees will have fewer creepy-crawlies than oak, hawthorn or elder as the hard spiny leaves are more difficult to eat.

Badger 1

Worksheet in two sections

Names: Badgers live in setts, foxes in dens or in an earth, otters in holts, rats in holes and rabbits in burrows. Tunnels are not homes for any animal.

Accurate Drawing: Show the picture of the badger to the pupils and ask them to make a scientifically accurate one of it.

Badger 2

Worksheet in two sections

Food: This worksheet focuses on what badgers eat and scientific deduction. Frog spawn is only around in Spring so Latrine 2 therefore must have been investigated in Spring. Similarly, blackberries and acorns are autumn fruits. Wheat grows in cultivated fields and leather jacket grubs are pests of wheat roots and are dug up by badgers. Hamburgers and dog food are provided by humans so Latrine 4 must be near town.

Food Chains: Badgers are omnivores and consume a wide variety of food, as can be seen from the first part of the exercise, so there is great scope in drawing up food chains. Badgers are not eaten by anything.

Heron 1

Worksheet in three sections

Introduction to the bird: Show the picture of the bird to the pupils so they can colour in the drawing accurately.

Unscamble the words: An English exercise that improves their wildlife knowledge – the words are FROG, EEL, RAT, MOUSE, FISH and BEETLE.

Foodchain: Pupils now have lots of scope for a foodchain with the heron on the top but make sure they put in what the prey eats too, i.e., HERON – FROG – FLY – PLANT SAP

Heron 2

Worksheet

Revision: Pupils are asked to recognise the six birds they now know from the outline drawings. The answers to all the questions are in the teachers' handbook so it is revision for the teacher too.

Butterfly 1

Worksheet in two sections

Introduction to an insect: Insects have three parts to their bodies – a head, a thorax or middle bit to which the legs and wings are attached and an abdomen. They have 2 eyes, 2 antennae and a long tongue. Pupils should learn these component parts from the first exercise.

Revision: Some of the other creepy-crawlies the pupils have learned are not insects. So, spiders have only 2 parts to their bodies and carry all eight legs on their heads; woodlice have 14 legs; and bumble bees (which are insects) have 4 wings.

Butterfly 2

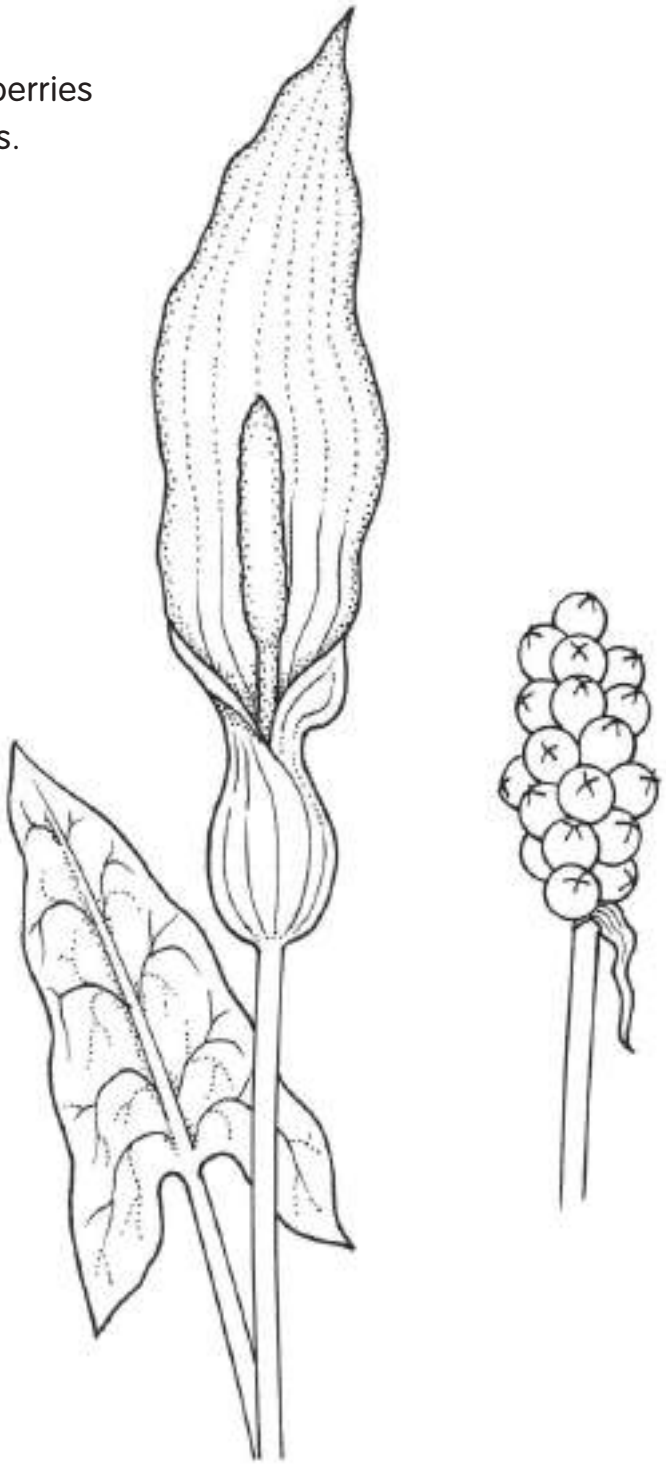
Fieldtrip

Looking for butterflies: If the school has very few butterfly nets, much can still be learned by observation. Encourage this very important scientific skill.

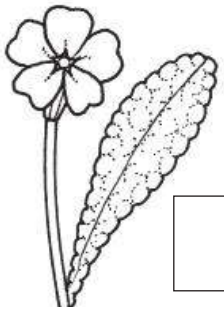
Caterpillar Game: This game is to illustrate how difficult it is to see green things on green grass. Pupils will easily find the red and white pasta – just as birds would easily find red or white caterpillars. It is much harder to find the green pasta and it takes longer so the pupils at the end of the lines will have fewer pasta pieces because only green ones are left. So being green is good for survival.

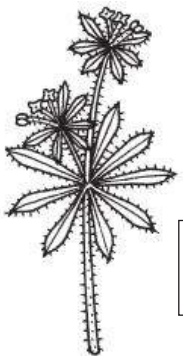
Colour

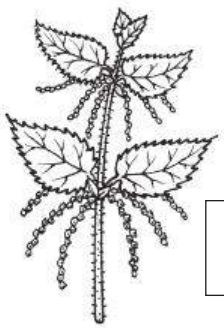
This plant flowers in spring and has red berries in autumn. Colour in both of the drawings.



In Spring, Lords and Ladies grow in hedges and woodlands. They usually flower in April or early May. The following flowers also grow in hedges and flower at the same time. Can you say what each one is?

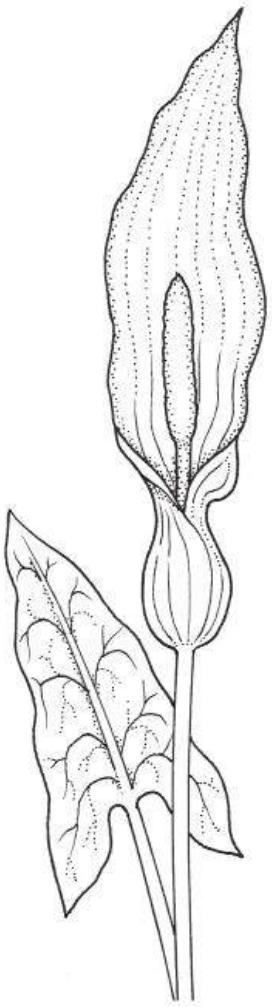






Why do all these flowers appear in Spring before the leaves come on the trees?

Fieldtrip



In April, the fieldtrip will be to find the flowering plant.

This plant attracts flies because the stalk sticking up smells like rotten meat to flies. However, only some people can detect this smell.

Crush the flower stalk between your fingers and smell it.

Can you smell rotten meat from the stalk? ☐ Yes ☐ No

How many pupils in your class?_____

Of that number, how many can smell the rotten meat smell?

_____

Flies can smell it and they go down into the flower looking for food that they think is there. Open the flower and look for flies.

Date when you opened the flower:_____

Flies present ☐ absent ☐

In September, these plants have a stalk topped with red berries.

Birds eat the berries and new plants grow from the seeds of the berries which are in their droppings.

THESE BERRIES ARE POISONOUS TO HUMANS.

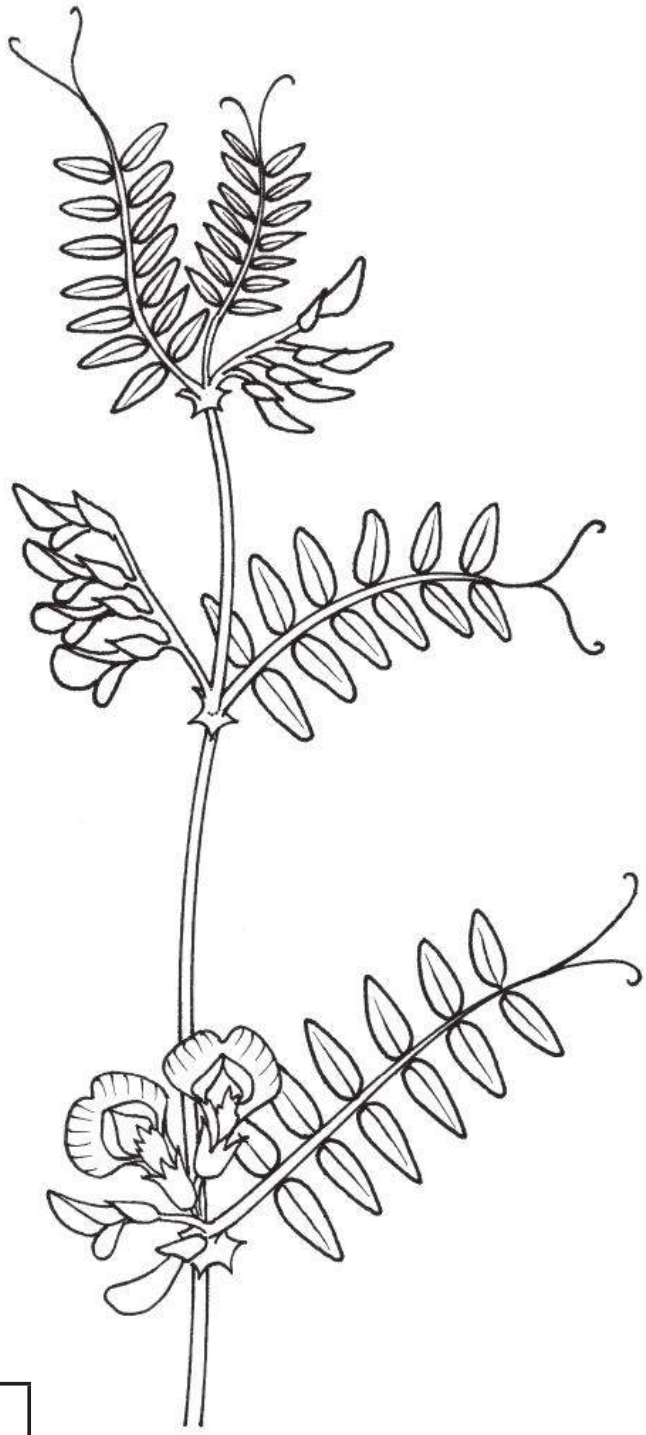
We saw berries of Lords and Ladies on our fieldtrip on:

_____ (date)

Colour and mark the parts

Vetches grow in hedges. There is not enough light at the bottom of the hedge for them to grow properly so they climb up towards the light using their tendrils at the end of the leaves to cling on to other plants.

Examine the drawing. Mark in the flowers, the leaves and the tendrils. Colour in the plant using the correct colours.



Vetches are members of the pea family. Find all the following words in the word search below. They may be horizontal, vertical, diagonal or backwards in any of these directions.

W	E	G	D	E	H	L
P	E	A	L	R	I	B
O	U	Q	V	R	O	X
D	R	R	D	B	P	T
T	N	N	P	A	L	F
L	E	A	F	L	E	T
T	O	H	C	T	E	V

WORD BANK

VETCH
PEA
TENDRIL
LEAFLET
POD
PURPLE
HEDGE

Fieldtrip

Fieldtrip in May/June to look for hedge flowers.

In your hedge, you should find flowers that you already know. Collect a leaf and flower from each one and stick it in the space beside the name:

VETCH

BLUEBELL

LORDS AND LADIES

ROBIN-RUN-THE-HEDGE

PRIMROSE

NETTLE

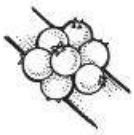
Identify

The elder tree is very common in hedges. It can be identified by its leaf which has only 5 leaflets. Look at the following leaves. You have learned them all already. Name each one.

New trees from seeds – these can also be nuts or inside berries. Name the following and say what tree grows from them.

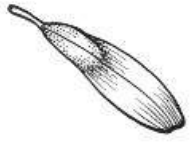
name _____

tree _____



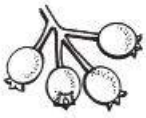
name _____

tree _____



name _____

tree _____

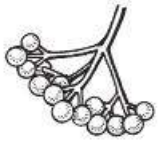


name _____

tree _____

name _____

tree _____



name _____

tree _____

_____ _____ _____ are berries.

_____ _____ are nuts.

_____ are wind-blown seeds.

DID YOU KNOW?

Birds eat berries and the hard seeds in the middle come out in their droppings and grow into new trees.

Fieldtrip to a hedge

This fieldtrip is to the nearest hedge to study the trees in the hedge.

Each group will need an umbrella, a pooter and a few jars.

At your hedge, find the trees you know and collect a leaf from each one. Bring them back to class and stick on to this page and name each one.

We found _____had the most creepy-crawlies.

Were the same creepy-crawlies on every tree?

_____were on every tree.

_____ was only on _____tree.

Wordsearch

Badgers make their homes under the ground in a hole which has a special name. The word bank has lots of words for holes under the ground. Find them all and highlight the word that means a badger's home.

B	A	S	Y	R	W
H	O	L	E	O	E
O	E	A	R	T	H
L	I	R	K	N	T
T	U	N	N	E	L
B	A	D	G	D	P

WORD BANK

HOLE
DEN
BURROW
HOLT
EARTH
SETT
TUNNEL

Look at the picture of a badger. Draw an accurate badger picture here.

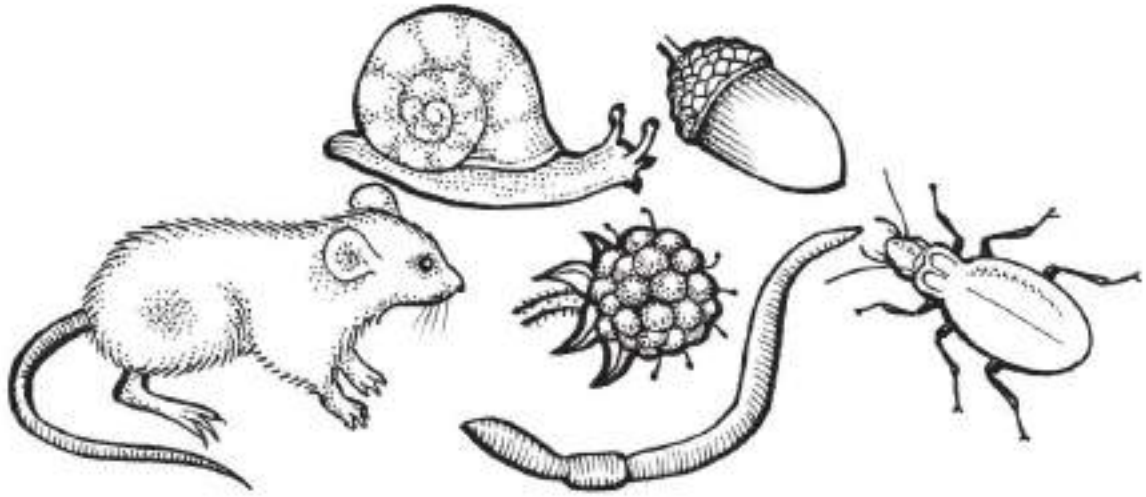
How do we know what badgers eat?

DID YOU KNOW?

Scientists examine badger droppings to see what food the badger was eating. This is easy to do because badgers in a sett all use a special place near the sett as a toilet. This place is called a badger's latrine.

Animal scientists called Zoologists examined droppings from 4 different latrines at different times of the year and this is what they found:

Latrine 1	Latrine 2	Latrine 3	Latrine 4
Earthworm hairs	Hedgehog spines	Blackberry seeds	Rabbit fur
Wheat grains	Rat bones	Snail shells	Earthworm hairs
Skins of leatherjackets	Jelly from frog spawn	Acorn shells	Mouse bones
Fungi	Slug remains	Beetle backs	Tinned dog food & hamburger



Examine these results carefully and answer the following questions:

Which latrine was examined in Autumn?_____

Which latrine was near a town? _____

Which latrine was examined in Spring? _____

Which one was near a ploughed field with a growing crop? _____

Which food was found more than once? _____

In your copies, draw up three different food chains for badgers.

Colour

A heron is a large wading bird that spends lots of time beside rivers, ponds and lakes. Colour in the picture with the correct colours. Look at pictures of herons to be sure.

Herons are carnivores. Here is a list of food they eat – the letters have been mixed up. Can you write the correct word in each case?

GRFO _____ SHIF _____

SUMOE _____ ART _____

ELE _____ BTLEEE _____

Make a heron food chain

Bird Revision

These are the birds you have learned about so far.
Name each bird.

Which two live on or near water?

_____ _____

Only two are omnivores. Which two?

_____ _____

Two are herbivores (only eat plant food) – which two?

_____ _____

Only two of them never build a nest in a tree – which two?

_____ _____

Which one has a male and female with different colours? _____

Which one migrates for the winter? _____

Which one is called Máire Fhada in Irish? _____

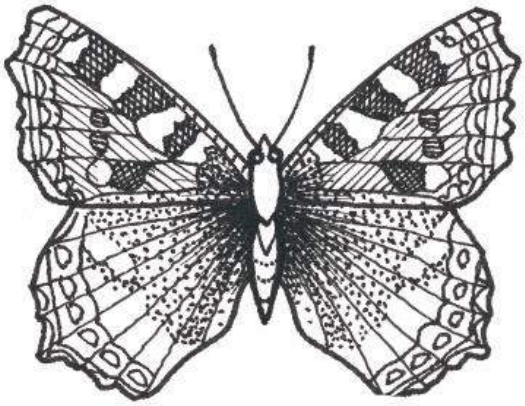
Why do you think this is so?_____

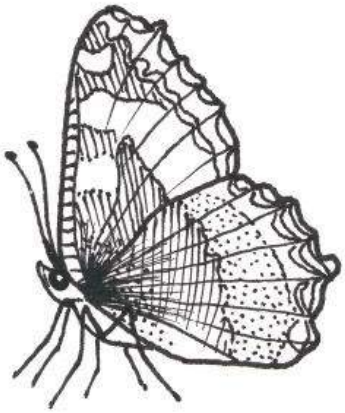
Which is your favourite? _____

Why? _____

Fill in the blanks

A butterfly is an insect and has a typical insect's body. Look at the two drawings of the butterfly below and answer the following questions. The words for the answers are in the word bank.





Name 3 things on a butterfly's head

_____ _____ _____

How many legs does a butterfly have? _____

How many wings has it?_____

The butterfly's body is in _____ parts.

Name each part of the body _____

_____

WORD BANK				
HEAD	THREE	SIX	FOUR	THORAX
ABDOMEN	ANTENNAE	EYES	TONGUE	

REVISION

How many legs has a spider?

_____

How many legs has a woodlouse?

_____

How many parts in a spider's body?

_____

How many wings has a bumble bee?

_____

All a spider's legs are on its

_____

Fieldtrip

Butterflies fly best on calm, dry days with sunshine and no wind. Pick a day like this in May, June or September to look for butterflies. You will need nets and a jar.

Butterflies visit flowers.

We saw _____ butterflies visiting flowers.

What flowers were they visiting? _____

Butterflies fly in the air.

We saw _____ butterflies in the air.

We caught _____.

WHY ARE CATERPILLARS GREEN? GAME to play outdoors.

You will need 3 bags of pasta shapes – 1 red, 1 green and 1 white.

Divide the class into 2 teams.

Scatter all the 3 bags of pasta over a grassy place. The class are the birds and the pasta pieces are the caterpillars.

It is easy to see and catch white and red pasta on the green grass.

At 'go', one pupil from each team rushes to collect as many pieces of pasta while the rest of the class counts to 10. They keep what they have collected. The next two do the same for a count of 10 and so on each until all have had a turn. Each pupil counts how many of each colour they collected.

player	WHITE PASTA		GREEN PASTA		RED PASTA	
	Team 1	Team 2	Team 1	Team 2	Team 1	Team 2
1st						
2nd						
3rd						
4th, etc						
TOTAL						

Who collected the most and the least? Why? Were all the green pieces found? What can we conclude about caterpillars and camouflage after this?

Introduction to 5th Class Worksheets

Poppy

Speedwell

Hazel

Bat

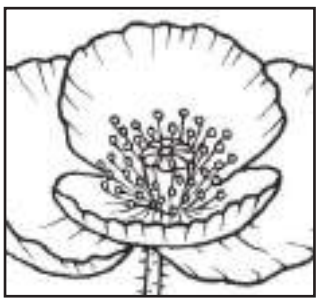
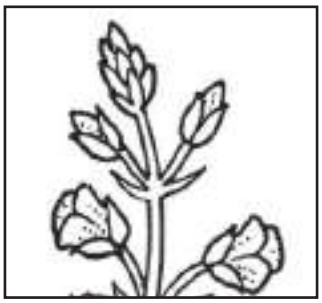
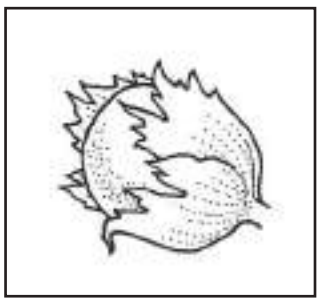
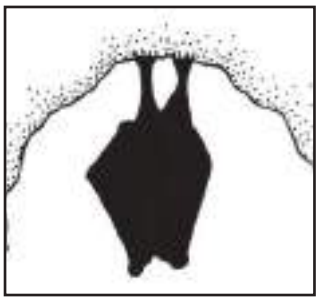
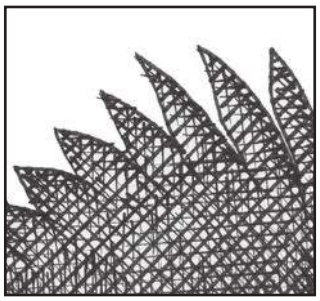
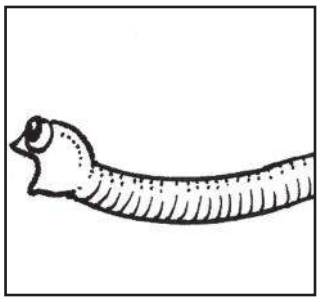
Kestrel

Earthworm

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves, after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher. The pupils should be taught the lessons on each topic first and then shown the pictures provided for each species. The worksheets, which need not necessarily be done in the order in which they are given, are designed to be photocopied and handed out to the pupils.

There is much emphasis in these worksheets on field work. It is important to bring pupils out to the school grounds on a regular basis to do tasks so that they become familiar with wildlife outdoors. Make sure the item to be seen or collected is around at the time, so pick the time of year accordingly and return any animals collected to the wild.

There is also an emphasis on pupils finding information out for themselves by use of books and by using the internet. By fifth class, pupils should be encouraged to do some researching for themselves and using the information found to answer the questions posed.

5th Class Teacher Notes

Poppy 1
Worksheet in two sections

Introduction to plant:
Pupils colour in the poppy drawn, having seen the picture provided with this pack.

Research:
Red flowers such as roses and tulips are deliberately bred in this colour by gardeners – they are not naturally occurring red flowers. The scarlet pimpernel is probably the only other truly red wild Irish flower. Ladybirds, soldier beetles and cinnabar, burnet and garden tiger moths are all red insects. The poem 'In Flanders Fields' by John McCrae is another research opportunity for the pupils.

Poppy 2
Fieldtrip (Do this in May or early June)

Ability to find plants:
The poppy plant grows on disturbed soil. This is because it doesn't compete well with grass and will only grow on bare soil before other plants become established.

Establishing an area for poppies:
This involves making an area of bare soil and indeed impoverishing the soil by adding sand or gravel. A fifth class which cannot find poppies can start the process of making bare soil but the poppies may not appear until the following year. So planting a wild flower mix containing poppies is also worthy of consideration.

Medicinal use:
Extraction of narcotics from poppies. More opportunity for theoretical (but not practical) research by pupils.

Speedwell 1
Worksheet in three sections

Introduction to flower:
Via drawing and the supplied picture

Observational skills:
Careful observation of the plant makes it easier to find them later, when on the fieldtrip.

Revision:
This is a revision of six other grassland plants pupils have learned in school.

Speedwell 2
Fieldtrip

Qualitative study:
Here the pupils are carrying out a comparative qualitative study of the effects of two particular types of grassland management on flowers. Choose an un-mown piece of lawn or field and a mown piece. The un-mown piece should have more speedwell and buttercup, whereas the rosette plants such as daisy, dandelion and ribwort will survive being mown as their growing point is buried in the rosette of leaves. Grass, of course, grows well in both.

Accurate drawing:
The drawing they make from the speedwell they collect should be scientifically correct – right number of petals, shape and position of leaves on flower stem.

Hazel Tree 1
Worksheet

Life cycle study:
This sheet can be given to pupils in September. Catkins in February, leaves in April and nuts in September are food for squirrels, mice, jays and rooks, NONE of which hibernate but eat their stores all winter long. New trees germinate from uneaten nuts; the leaves fall off in October and only buds are to be seen in December and January.

Hazel Tree 2
Fieldtrip

First fieldtrip in September should establish if hazel trees grow in the vicinity of the school. If not, a hazel tree should be planted on tree day in October. The Parks Department of the Local Authority may be in a position to provide a tree but they are not expensive to buy either. If a growing tree is found near to the school, all the stages of the lifecycle shown on the last worksheet can be checked out. In subsequent years, this will be possible with the newly planted tree. It is important to bring the pupils to see catkins in February – these are wind-pollinated flowers.

Hedge layers:
This is an opportunity to examine the structure of a hedge. This needs to be done in September and again in April. Even if the names of the plants present are not known, it will be possible to demonstrate the layers and show the difference in Spring. The Teacher should keep the September worksheets for comparison with the Spring ones. Hand out the same worksheet again in April.

Bat 1

Worksheet in two sections

Research:
Another opportunity for the pupils to go on the website given and find out about the bat species.

Identification:
The five bats outlined are described in the questions below so it is an exercise in observation and deduction; similarly with filling in the details of the long-eared bat.

Bat 2

Worksheet in two sections

Bat food:
If they only eat flying insects, then choosing those on the list which can fly at night gives the answer, *i.e.,* mayflies, midges, moths, mosquitoes and daddy longlegs. Bats don't eat bees.

Interpretation of scientific Information:
A bat lifecycle is succinctly given in the table. This is an exercise in accurate scientific writing, not a short story!

Kestrel 1

Worksheet in two sections

Mammal research:
Pupils find out about each small mammal on the list. The National Parks and Wildlife Service www.NPWS.ie is a good site to start with. Mice, rats and pygmy shrews are common and widespread, bank voles and white-toothed shrews are confined to particular counties. There are no other species of small mammals in Ireland – no dormice or moles or water voles. Mice and rats are pests.

Other birds of prey:
Sparrow Hawk, Peregrine Falcon, Merlin, Hen Harrier, Marsh Harrier, Buzzard. The Golden Eagle, the white-tailed Sea Eagle and the Kite have all been recently re-introduced.

Kestrel 2

Worksheet

Binocular vision:
This worksheets gets the pupils to experiment with using their eyes separately and together. Lining up an outstretched finger with a line on the board can only be done with one eye at a time. Using both eyes together means focusing on the finger or the line but not both together. Swans and other birds who use both eyes independently have a much wider field of vision to look out for predators.

Earthworm 1

Worksheet in two sections

Setting up a wormery:
A large clear container is essential to see what the worms are doing. Darkness is essential or the worms move to the centre and can't be seen, so do not leave the wormery uncovered for long.

Finding worms:
If all fruit fails, the worms can be cajoled to the surface by pouring soapy water over the area, although this is disliked by worms and leaves their habitat unusable for some time. The method described on the worksheet mimics the effect of heavy rain – altogether a more natural way of collecting worms.

Earthworm 2

Worksheet

Identifying common worms:
This worksheet encourages pupils to look for Tiger Worms and Angler Worms. Compost bins are a good place to look for Tiger Worms while Angler Worms may be found under dead plant material.

Colour

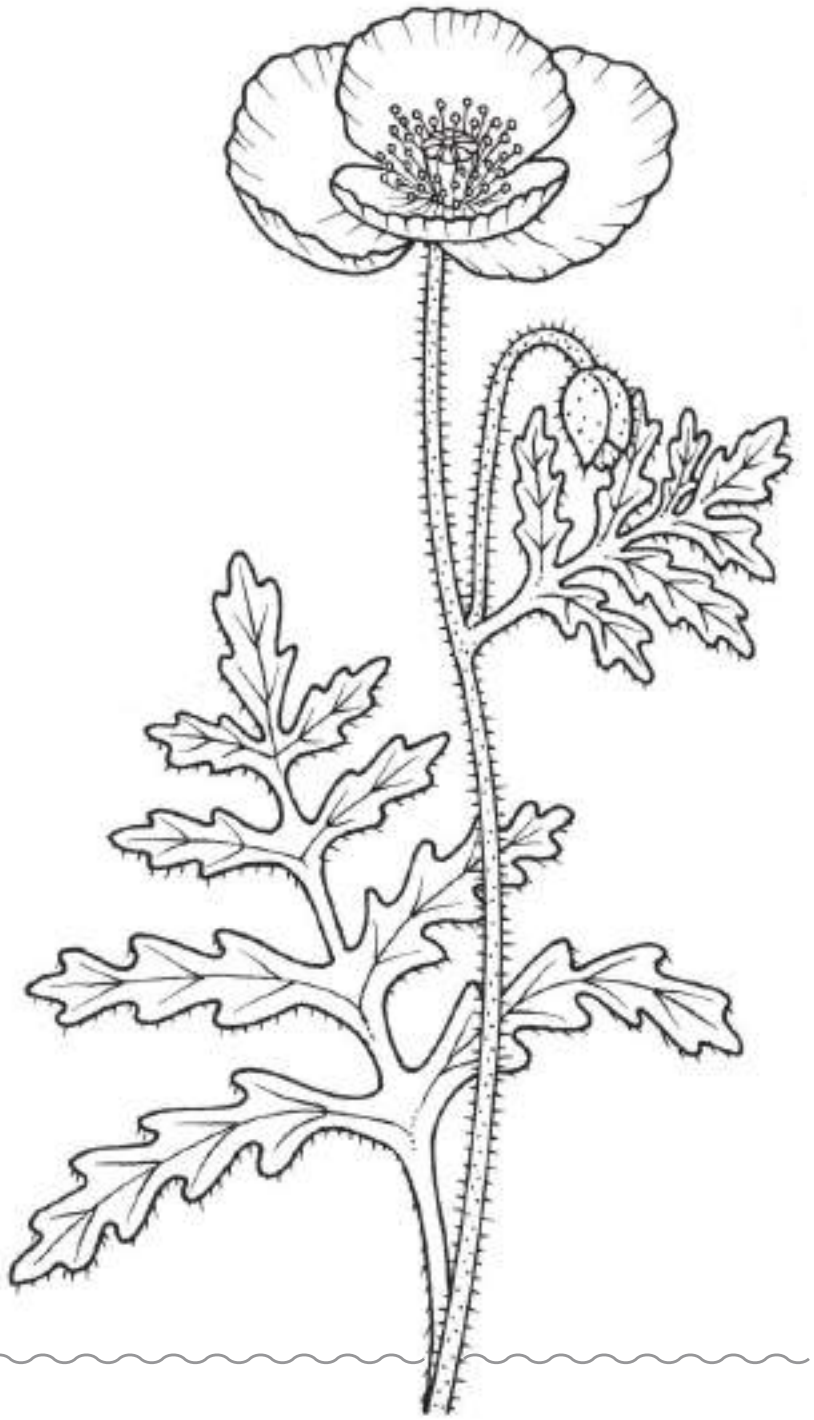
Poppies grow on ground that has been disturbed or dug up. They flower from late May until August. Look around the area where your school is and see where the poppies grow.

Poppies grow

_____

Colour in the poppy.

Poppies are red in colour to warn predators that they are not good to eat.



Other wild flowers and insects are red in colour for the same reason.

Name another red wild flower:

_____

Name a red insect:

_____

FIND OUT:

Look up the poem which begins:

"In Flanders fields the poppies grow / Between the crosses row on row"

What happened in Flanders fields?_____

Why are there crosses there? _____

Why did the poppies grow there? _____

Nowadays poppies are worn to remember what? _____

Fieldtrip

Areas with disturbed soil will have poppies.

Are there poppies in the school garden growing as weeds? _____

Are there poppies in an area of disturbed soil along the roadside? _____

Are there no poppies near your school? _____

TO DO:

Make a site on the school grounds where poppies can grow.

Devise a plan for this *(Hint: poppy seeds can last for 40 years in undisturbed soil).*

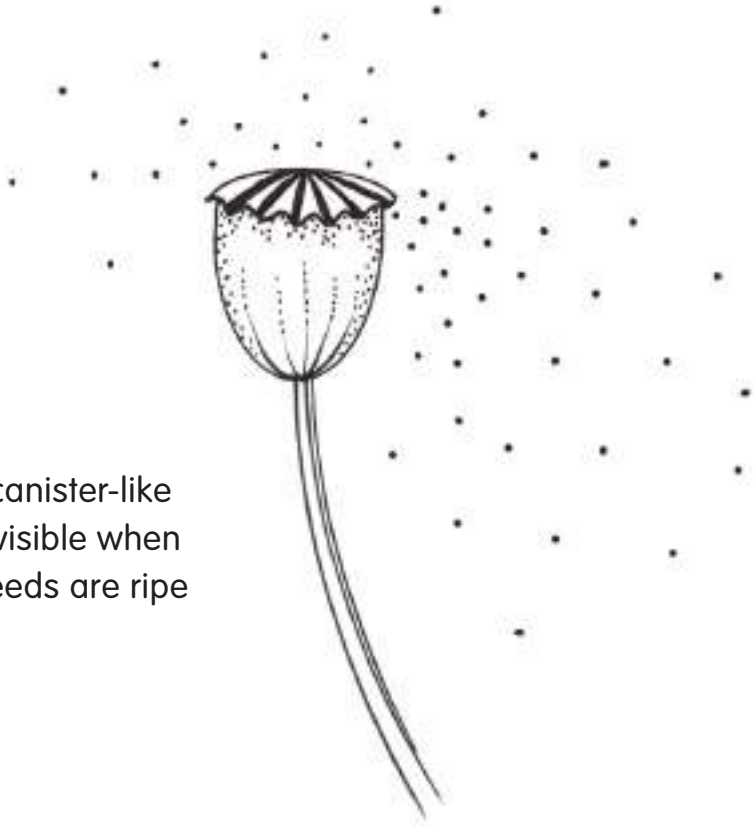
_____

_____

_____

_____

_____



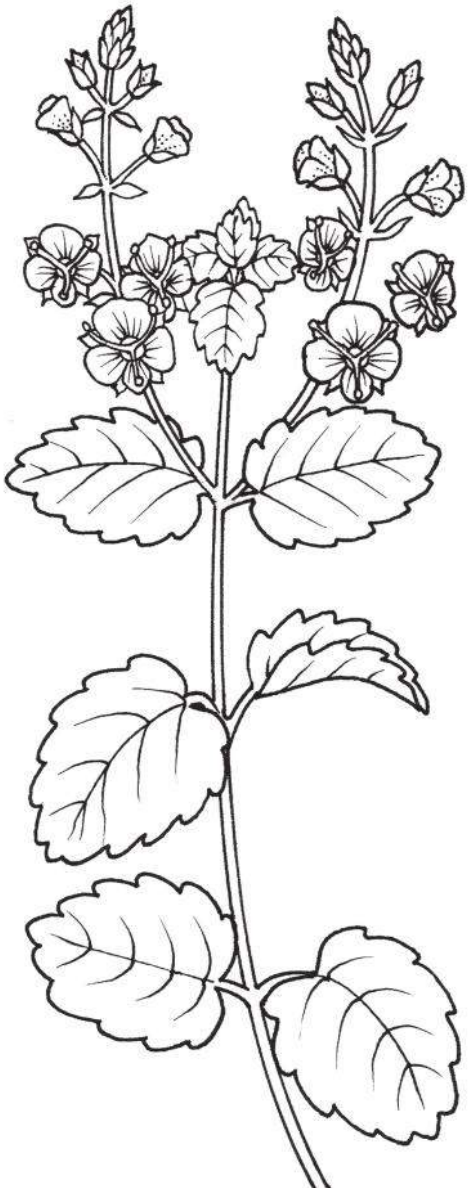
Poppy seeds are borne in a canister-like capsule on the plant. This is visible when the petals have fallen. The seeds are ripe when they are black.

FIND OUT:

Poppies had medicinal uses long ago. Look up what they were used for.

Colour and fill in the blanks

Speedwell grows in uncut areas of grassland. Look at the picture shown to you by your teacher and colour in the flower.



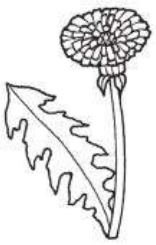
How many petals has one speedwell flower? _____

Are they all of equal size? _____

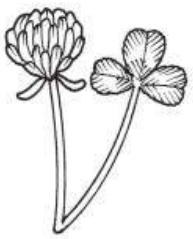
What is the position of the leaves on the stem?_____

Does the plant flower from the top down or the bottom up?_____

Speedwell is a grassland flower. So are all the others drawn below. Name each one.





REVISION

_____ and _____ have yellow petals.

_____ and _____ have white petals.

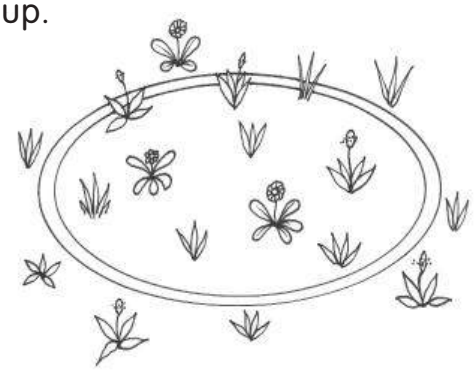
_____ has purple petals.

_____ has no petals; it is wind-pollinated.

Speedwell has _____ coloured petals.

Fieldtrip

Go to the school grounds to look for speedwell. It is in flower in May and June. You will need a hoop or a quadrant for each class group.



TO DO:
Find an area of grassland that has not been mowed. Put the hoop on the ground and list all the flowers inside the hoop that you know.

List of flowers in hoop in un-mown grass:

_____

_____

_____

_____

Now find an area of grassland that has been mowed regularly. Put the hoop on the ground here. Make a list of all the flowers you know inside the hoop.

List of flowers in hoop in mowed grass:

_____

_____

_____

_____

Which plants were found in both groups? _____

_____

Which plants were only in the mowed area?_____

_____

Which plants were only in the un-mown area? _____

_____

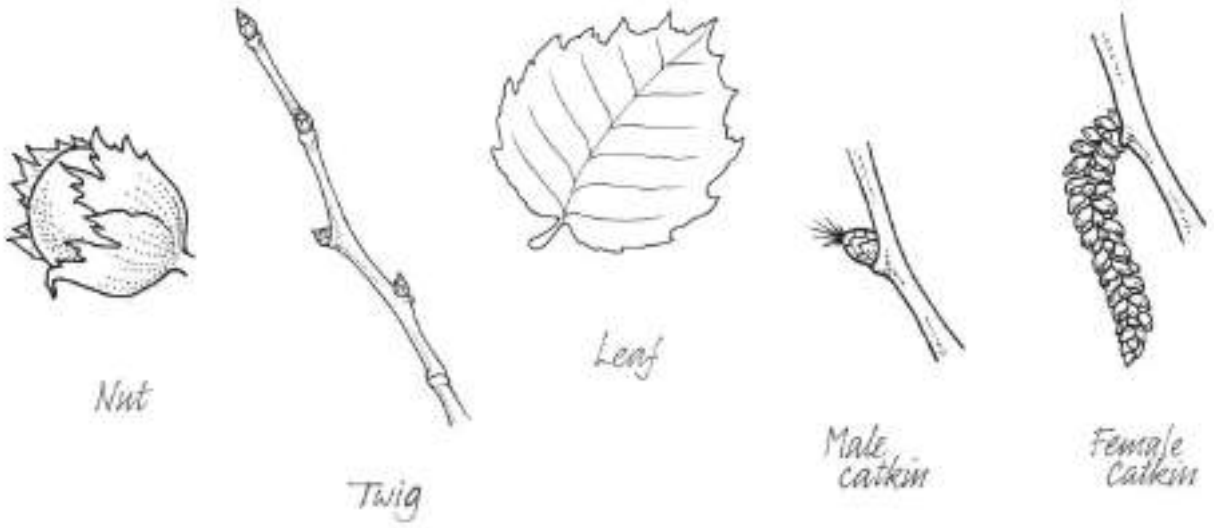
What conclusion can you draw from your work?_____

_____

Bring back a piece of speedwell and make an accurate drawing of it in class.

Fill in the blanks

Look at the picture of the hazel tree and the drawings here.



In February and March _____ open on the hazel tree.

These are pollinated by the wind.

In April, the _____ open on the hazel tree.

The _____ are fully ripe by early September.

These are food for _____ and _____.

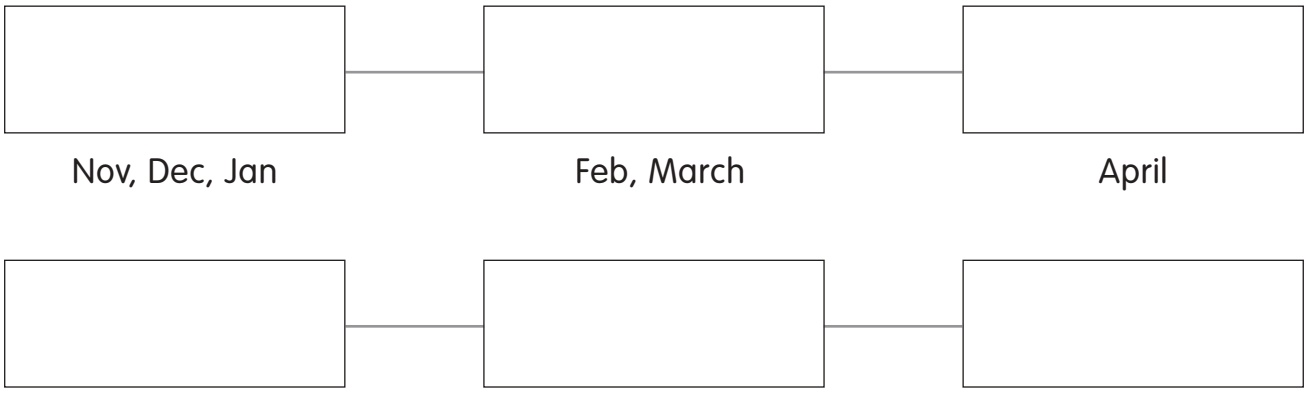
These bury them in order to store them for food to eat during _____ .

New trees will _____ from those that are not eaten.

In October, the _____ fall from the tree.

In December and January, only the _____ are to be seen at the end of the twigs.

LIFECYCLE



Fieldtrip

Hazel trees are one of the trees that grow in hedgerows.
Go to your nearest hedge to find out.

Are there hazel trees in your hedge – or in your school grounds?_____

If not – plant a hazel tree. You can collect a hazel nut and plant a young tree in the school grounds during TREE DAY in October.

Hedges are very good habitat for plants and animals.

There are four levels of plant and animal life in a hedge. Fill in the details of the four levels in your hedge.

CANOPY

The tallest trees get the most light on their leaves. The canopy trees in our hedge are

_____

SHRUB LAYER

This consists of smaller trees and shrubs and climbing plants that are lower than the main trees. There are _____

_____

_____

in the shrub layer in our hedge.

GROUND LAYER

This is where the flowers in the hedge grow. They have little light when all the leaves are on the canopy and shrub layer. In September, we saw _____

_____

_____

in the ground layer. In April/May, we saw _____

_____

_____

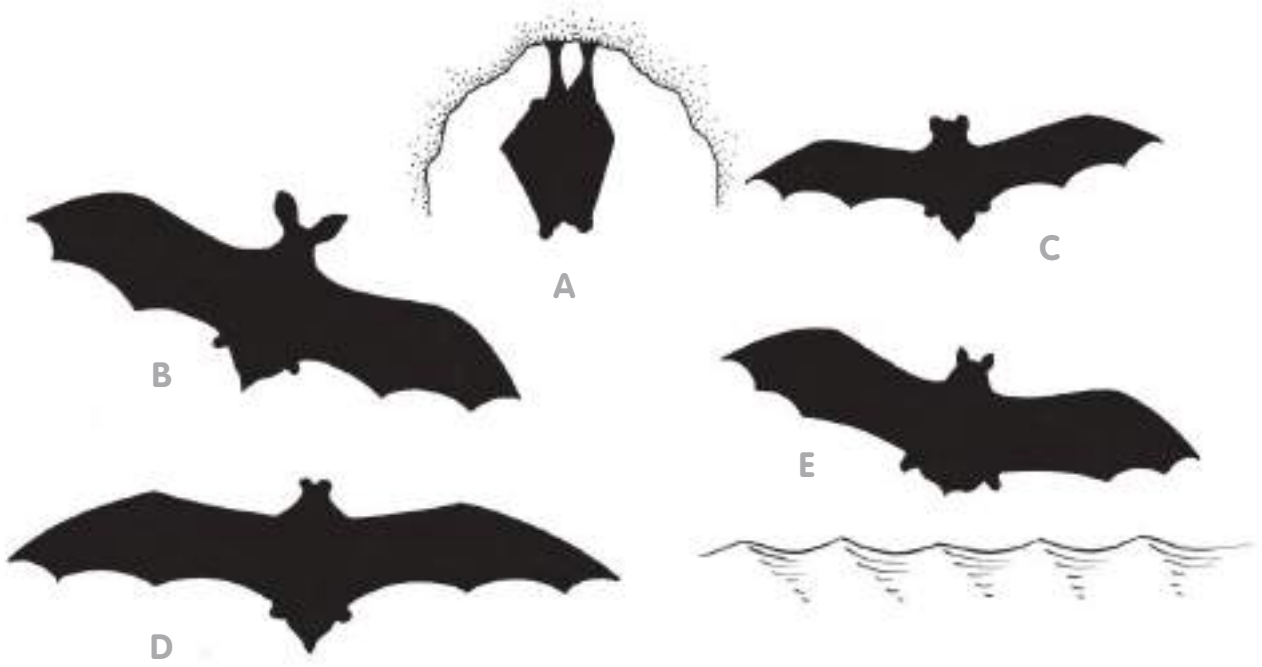
in the ground layer.

LEAF LITTER

This is where all the dead leaves are broken down into compost by creepy-crawlies.

Fill in the blanks

Bats are mammals that fly at night. There are ten different species in Ireland. Can you name them all? You can find out on the Bat Conservation Ireland website at www.batconservationireland.org



Outlines of some of our common bats are shown above. Examine them carefully and then answer these questions:

Which one is Daubenton's bat, also known as the water bat? _____

Which one is the long-eared bat? _____

Which one is the cave-dwelling species – the lesser horseshoe bat? _____

Our largest bat is Leisler's bat which is bat number _____

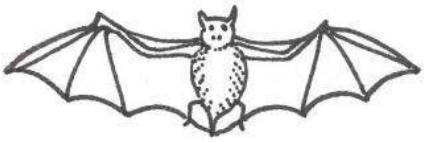
Our smallest bats are the pipistrele bats (of which we have 3) – which one drawn above is a pipistrele bat? _____

TO DO:

Using the dark outline as a template, re-draw the long-eared bat. Label the ears, tail, feet and the wings. Look at the picture in the teachers' book to see if you were accurate.

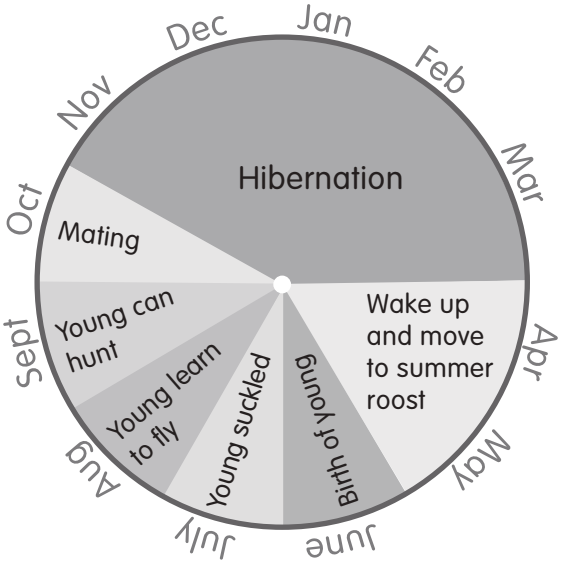
Food and Lifecycle

Bats are carnivores. They fly at night in summer feeding on aerial insects. Tick off which of the following are eaten by bats:



- ☐ Mosquitoes
- ☐ Woodlice
- ☐ Moths
- ☐ Worms
- ☐ Midges
- ☐ Slugs
- ☐ Bees
- ☐ Mayflies
- ☐ Mice
- ☐ Daddy-Longlegs

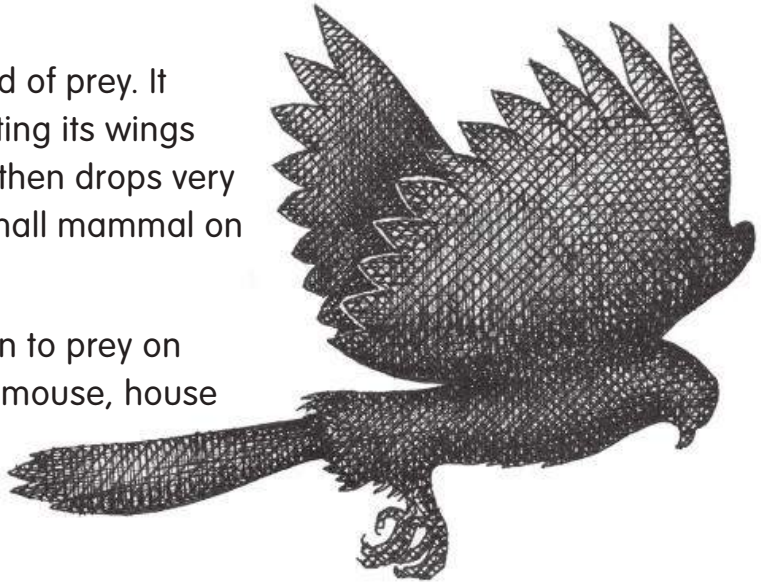
Here is a drawing of the life cycle of a bat.



TO DO:

Write a paragraph about a year in the life of a bat using this drawing to make sure that the points you make are accurate.

Look up



The Kestrel is our most common bird of prey. It hovers over fields and hedges, beating its wings very fast to stay in the one place. It then drops very suddenly on to its prey, usually a small mammal on the ground.

In Ireland, kestrels have been known to prey on the following small mammals: field mouse, house mouse, rat, pygmy shrew, white-toothed shrew and bank vole.

Look up each one of these and find out how common and widespread each one is.

Field Mouse _____

House Mouse _____

Rat _____

Pygmy Shrew _____

White-toothed Shrew _____

Bank Vole _____

Which of these are considered to be pests by humans? _____

_____

Are kestrels of benefit to humans? _____

Name 5 other birds of prey in Ireland.

_____ _____

_____ _____ _____

FIND OUT what 3 other species of birds of prey that once were native here, have been re –introduced in the last 10 years.

_____ _____ _____

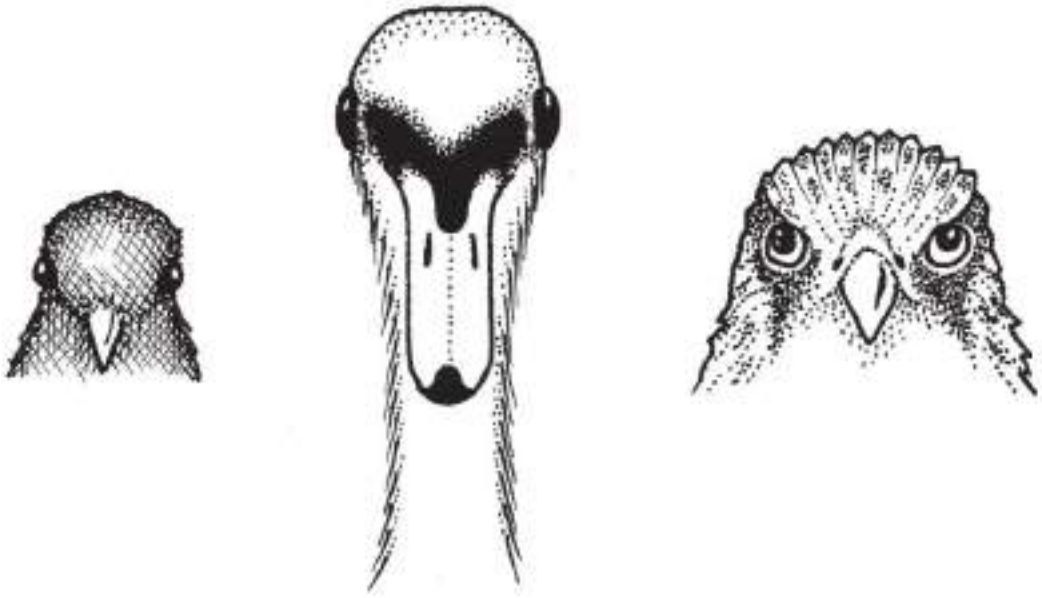
Why is this re-introduction such a good idea? _____

_____

_____

Experiment

How do kestrels see so well? Unlike swans and blackbirds, kestrels have **binocular vision.**



Birds like swans and blackbirds see out of each eye independently. You can try this by holding up a finger and looking at it with one eye at a time. This is fine for most things but when you have to pounce on something and catch it, you have to know exactly where it is. So you need to be able to focus on it with both eyes at the same time – which is what binocular vision means.

Line up your finger with a line drawn by your teacher on the board. You can only do this with one eye at a time. Using your two eyes together you can only focus either on your finger or on the line on the board – not both at the same time.

Kestrels, like all birds of prey and owls, use both eyes together and are very good at catching fast-moving prey.

Swans use each eye independently at the same time. This gives them an advantage which is very important to them. Can you work out what it is?

_____

_____

_____

_____

_____

_____

Experiment

Earthworms are decomposers. They feed on dead plant material and break it down to nutrients that can be used by other plants to grow. They are commonly found in soil.

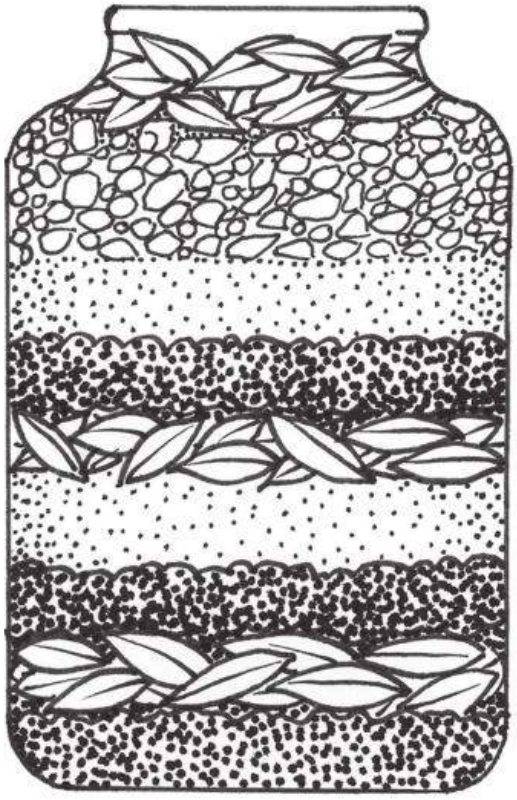
You can see how they break down leaves and make tunnels in soil by looking at a wormery.

How to make a wormery

You will need:

1. a large glass/plastic jar such as one for holding sweets;

2. layers of leaves, soil, sand and chalk.



If you put earthworms into the jar and cover the jar with a black plastic bag, the worms will work away in the darkness mixing up the layers and eating the leaves. Keep the soil slightly damp and open the black bags for just a few minutes every two days to see what is going on. If you leave the bag off, you won't see anything as worms keep away from the light.

How to capture worms to put in the jar

You have to convince the earthworms to come up to the surface of the soil.

Work in groups of 4. You will need a 5 litre bottle of water (or 2 smaller bottles) and an empty box to put the worms in.

Go outside and pick an area of grassland 1 metre square.

Water it with all the water. Then start stamping – carefully – on the ground you have watered. The worms down below will think that it is raining and will start coming up to the surface. This may take 5 minutes or so but keep at it.

Bring the worms back to the wormery and put them in.

Identify

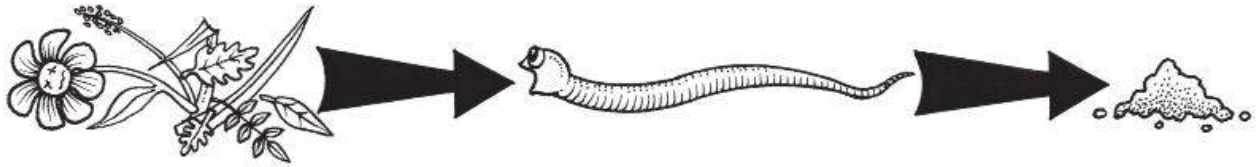
Worms eat dead plant material and turn it into soil nutrients. They work very well in compost bins.

What is a compost bin? _____

Is there one in your school? _____

Have you one at home? _____

What goes into the compost bin? _____



Go outside and look in the compost bin. Collect some of the worms you see there and bring them back to class.

Examine them carefully.

Are they all the same? _____

Are they the same as the earthworms in the soil? _____

Are they fatter/thinner than earthworms? _____

Are they red all over and wriggle violently on your hand? _____

If they do, then they are ANGLER WORMS which are red.

Are they striped – with red and pink circular stripes? _____

These are TIGER or BRANDLING WORMS which are very common in compost bins.

DID YOU KNOW?

Red light doesn't disturb worms at night, so if you put red cellophane paper over a torch you can find lots of worms in the garden at night.

Introduction to 6th Class Worksheets

Herb Robert

Cow Parsley

Birch

Deer

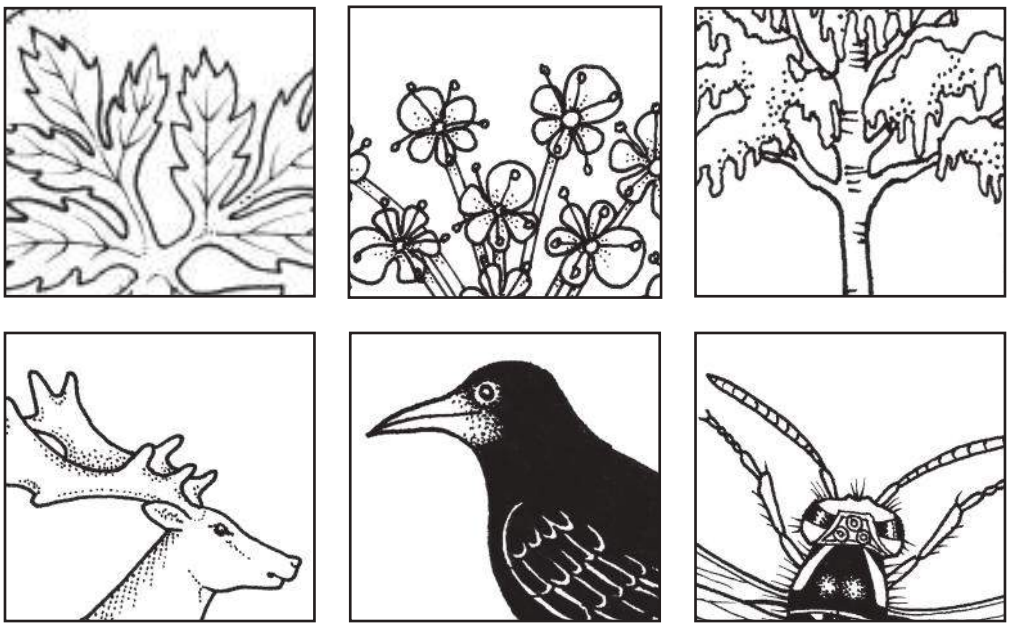
Crows

Wasp

In the Teachers' Book, the lessons on each topic contain suggestions for practical work to be carried out by the teacher with the pupils. The following worksheets are in addition to this and are designed to be used by the pupils themselves, after each of the eight species in the teachers' handbook has been taught. They should be given to the pupils to work on and instructions about what to do on each one should be given by the teacher. The pupils should be taught the lessons on each topic first and then shown the pictures provided for each species. The worksheets, which need not necessarily be done in the order in which they are given, are designed to be photocopied and handed out to the pupils.

There is much emphasis in these worksheets on field work. It is important to bring pupils out to the school grounds on a regular basis to do tasks so that they become familiar with wildlife outdoors. Make sure the item to be seen or collected is around at the time, so pick the time of year accordingly and return any animals collected to the wild.

There is also an emphasis on children finding information out for themselves by use of books and by using the internet. By sixth class, pupils should be encouraged to do research and to use the results to take points of view on environmental issues.



6th Class Teacher Notes

Herb Robert 1
Worksheet

Introduction to plant
This sections requires that the pupils examine the drawing in detail and understand the vocabulary used on the worksheet They should understand petal, sepal, alternate, opposite, seed and canopy.

Herb Robert 2
Fieldtrip (do this in May)

Ability to find plants
The plant grows in a hedge or woodland edge and flowers in May.

Making a model hedge
This involves making a miniature hedge with the four layers in a box, in class. This can be done by several groups in the class. Each of the four layers of the hedge are collected and placed in the box in the right position.

Cow Parsley 1
(Flowers are in bloom in late May/June)
Worksheet

Introduction to plant
Examination of the drawing and being shown the picture will introduce the pupils to cow parsley. Finding it in a nearby hedge and bringing it back to attempt an accurate drawing increases the familiarity with the plant.

Cow Parsley 2
Fieldtrip

Hunt for insects
Associated with the nectar-filled flowers, this exercise is conducted by using a strong net to sweep a stand of flowers. This should dislodge any insects which can then be examined closely. A warm sunny day is best for this exercise.

Birch 1
Worksheet

Study of tree
Because birch trees are so commonly planted, it should be relatively easy to visit one on a regular basis to find invertebrates. Leaves, bark and around the base of the tree should all be examined.

Birch 2
Worksheet

Key construction
This involves a series of questions to distinguish the individual leaves. It could begin:

1. Leaves compound: go to 2
Leaves simple: go to 4

2. Leaflets attached radially to stem:
Horsechestnut

Leaflets in opposite pairs with one terminal leaflet: go to 3

And so on. There is no right way – the fewer the steps, the more elegant the solution but as long as the key works it is fine.

Deer 1
Worksheet

Food chains
It will soon be apparent in discussion with the class that deer have no natural predators in Ireland.

Importance of top carnivores
Teacher should instigate a debate on the importance of top carnivores and how populations with no top carnivores increase in numbers as long as there is food available. This may mean destroying young forests by eating young germinating trees, or destroying crops on farmland or becoming a nuisance to traffic in parks.

Control of hunting
Hunting deer with guns for sport means removing the very best specimens for trophies whereas natural hunting by wolves would remove the weakest, most easily caught specimens. So culling by controlled removal must mean the removal of the weakest animals to keep the health of the herd up.

Introduced species
This can upset the ecological balance. Muntjac deer, for instance, which have no natural predators in Ireland, will further damage the woodlands where they have been introduced.

Food Chain Game

Revision worksheet in two sections

Revision
This is a revision exercise of the species learned in Primary School. Pupils must know enough about these species to understand their requirements for growth and nutrition.

Food web
By using a ball of string to link each "species" to its food and its prey, a food web can be created. It is then easy to demonstrate the effect on a food web of the loss of even one species. Decide on one species to eliminate and that person lets go all the strings they are holding. See how quickly the web unravels.

Crows 1

Worksheet in two sections

Observation skills
This worksheet requires pupils to look closely at the crows in the school grounds and to realise that there are two different species – a rook and a jackdaw – so this exercise sharpens their observational skills.

Nests
Magpies have solitary nests of sticks high in trees in suburban areas. Rooks nest in colonies on the tops of adjoining trees. Jackdaws nest in chimneys, church steeples and old castles.

Crows 2

Worksheet in three sections

Research skills
Pupils should be able to find out about Ravens, Hooded Crows, Jays and Choughs.

Food
Crows eat a wide variety of food and these lead to the abundance of the species.

Scientific survey
Draw a map of the area surveyed and mark in the positions of the Rook and the Magpie nests. Rookeries will be separate from each other but there may be individual Magpie nests relatively close in areas where there is good feeding available. It is the availability of food and nesting sites that controls the populations of Rooks and Magpies.

Wasps 1

Worksheet in two sections

Identification
Wasps and honey bees are of a similar size but honey bees are hairy with indefinite stripes while wasps are shiny and very definitely striped. Bumble bees are much bigger and hairier.

Mimicry
There are several other non-stinging insects which carry the black and yellow warning colours of bees and wasps. This mimicry has meant that they have evaded being eaten so those that look most like bees most successfully evade capture by birds and leave most offspring. They evolve, therefore, to look more closely like bees and wasps.

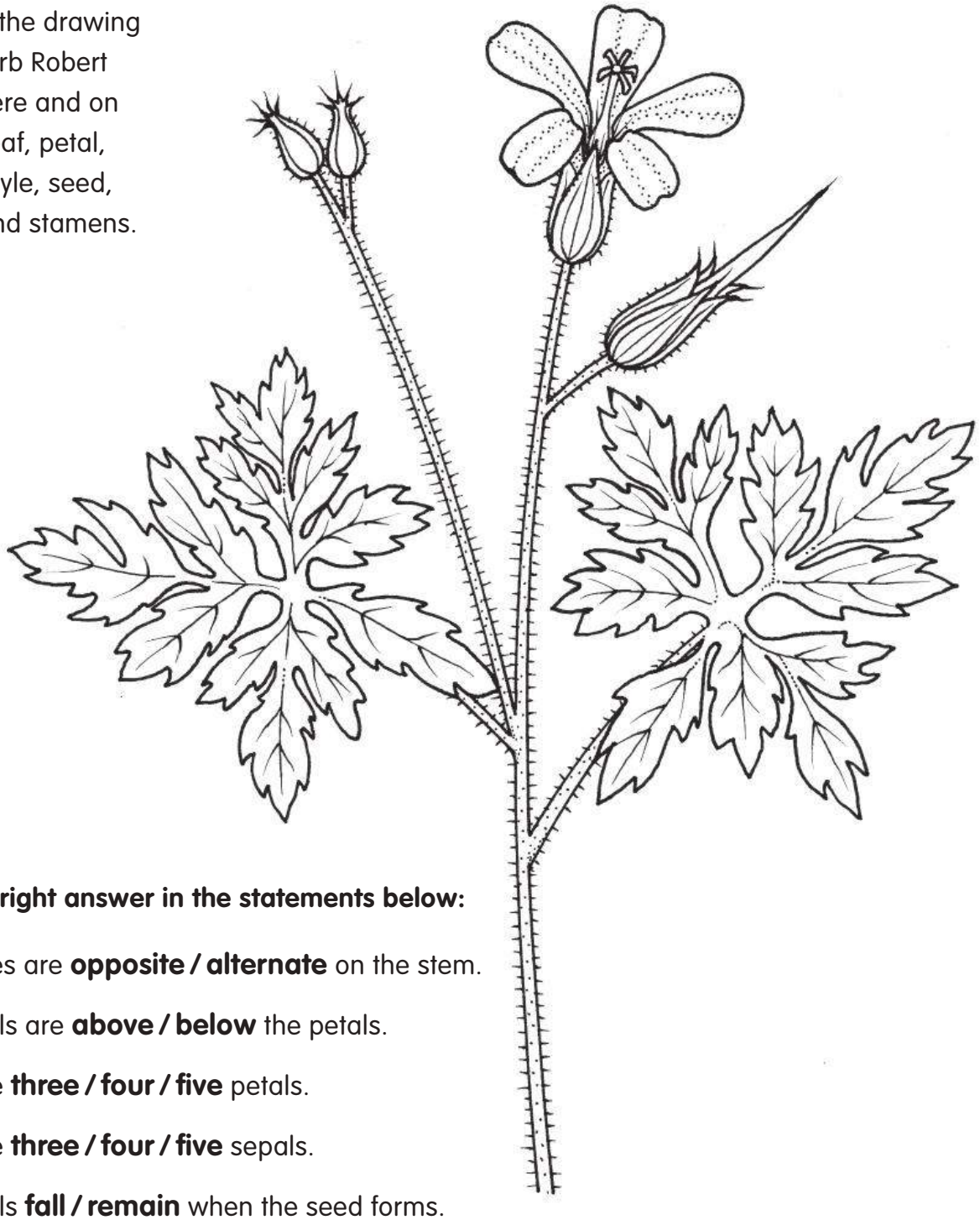
Wasps 2

Debate
There is a learned response among children that wasps are hateful, nasty things which are out to sting us. This exercise in looking at how wasps live and should make them realise the important role played by wasps in keeping down crop pests such as aphids and greenflies. Neither bees nor wasps are "better" than one another – they are both very important parts of biodiversity.

Plant introduction

Herb Robert is a woodland and hedgerow plant that flowers in Spring. It is a member of the cranesbill family, so called because of the shape of the seed.

Examine the drawing of the Herb Robert drawn here and on it mark leaf, petal, female style, seed, sepals and stamens.



Ring the right answer in the statements below:

The leaves are **opposite / alternate** on the stem.

The sepals are **above / below** the petals.

There are **three / four / five** petals.

There are **three / four / five** sepals.

The sepals **fall / remain** when the seed forms.

In a hedge, Herb Robert is part of the **ground layer / shrub layer / canopy.**

FIND OUT:

What colour are the petals of Herb Robert? _____

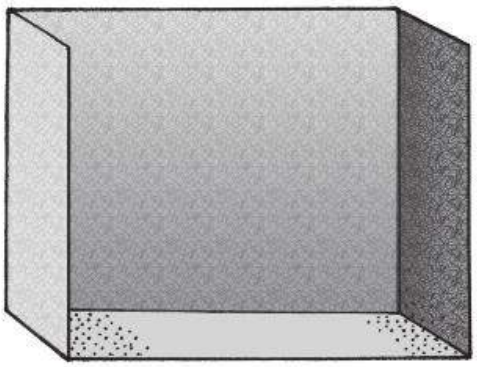
Create a hedge

Herb Robert is a hedge/woodland plant that flowers in April.

Find some growing in a hedge near your school.

Smell the flower – it has a pungent smell like that of a fox. It tastes horrible and slugs, woodlice and snails never eat it.

Following your fieldtrips to a hedge this year, you can build up a model hedge with four layers in class.



You will need: a large box of the size and shape of a large cornflakes box. Cut off one large side and one end. Stand it vertically on its other end, as illustrated.

This is where you assemble your model hedge. You may wish to cover the box and paint it green. On the bottom floor of the box is the litter layer. This will be moss and dead leaves.

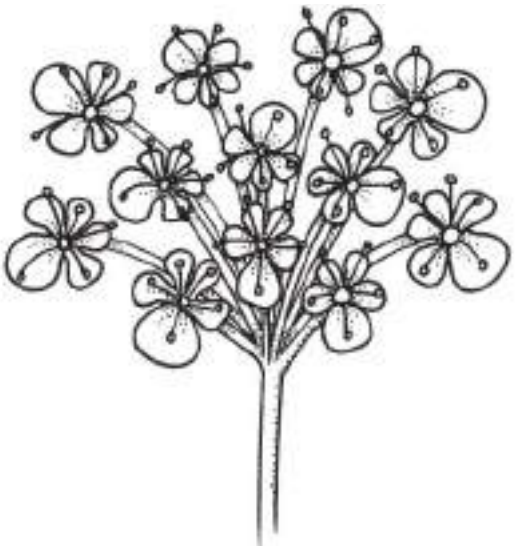
On top of this is the ground layer where the flowers grow. Collect some Herb Robert as well as other hedge flowers for this layer.

The shrub layer and canopy layer of the tall trees in the hedge complete the model hedge.

These can be collected on this fieldtrip and the whole model hedge assembled back in class.

Fieldtrip

Cow Parsley is a particularly common wildflower in May and June. It grows along hedges on roadsides and in fields. It belongs to a family of flowers called *umbelliferae* because the heads of flowers on the plant are like an umbrella.



Examine the drawing.

How many petals on each flower? _____

Are the petals all the same size? Describe them.

_____

_____

_____

FIELDTRIP

Go outside and collect a specimen of Cow Parsley. Bring it back to class and make your own drawing here. Trace the outline of a whole leaf on to this page.

Describe the smell of the flowers. _____

Look at the stem and describe it. Has it a hollow or solid stem? _____

Put the flower into the ground layer of the hedge you are making in the box.

Fieldtrip

Cow Parsley is common in hedges and is very attractive to wildlife as each little individual flower contains lots of nectar.

Find a stand of Cow Parsley.

1. Observe your Cow Parsley stand and see what flying insects appear looking for nectar.

_____

_____

_____

2. Sweep the flowers with a net and then empty the net into an open umbrella and see what is there.

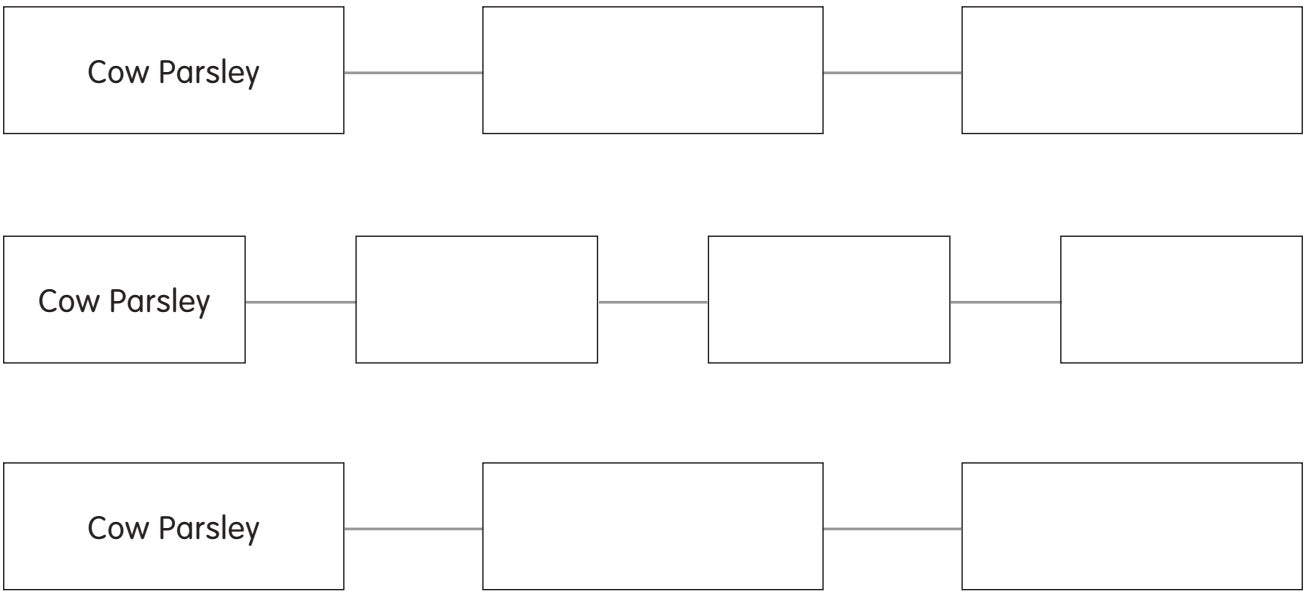
_____

_____

_____

3. Look in the dried-out stems in winter to find hibernating earwigs.

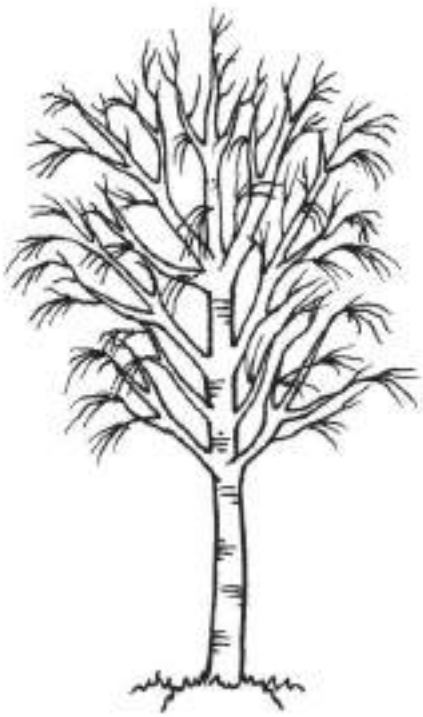
4. Use your results to make food chains with Cow Parsley at the bottom.

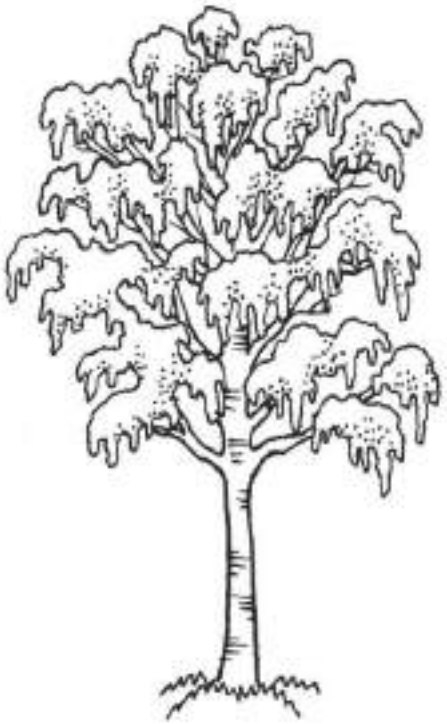


Tree study

Birch trees are commonly planted in towns, parks and school grounds.

Where is the nearest one to your school? _____





Find your nearest birch tree and study it over the school year, starting in September. Wildlife is particularly fond of birch trees and 229 insect species are associated with it.

Visit your tree every two weeks and keep a diary of whatever wildlife you find. Shake the leaves, look in cracks in the bark and search down at the bottom of the tree. Look out for flying insects.

Diary of examination of Birch tree

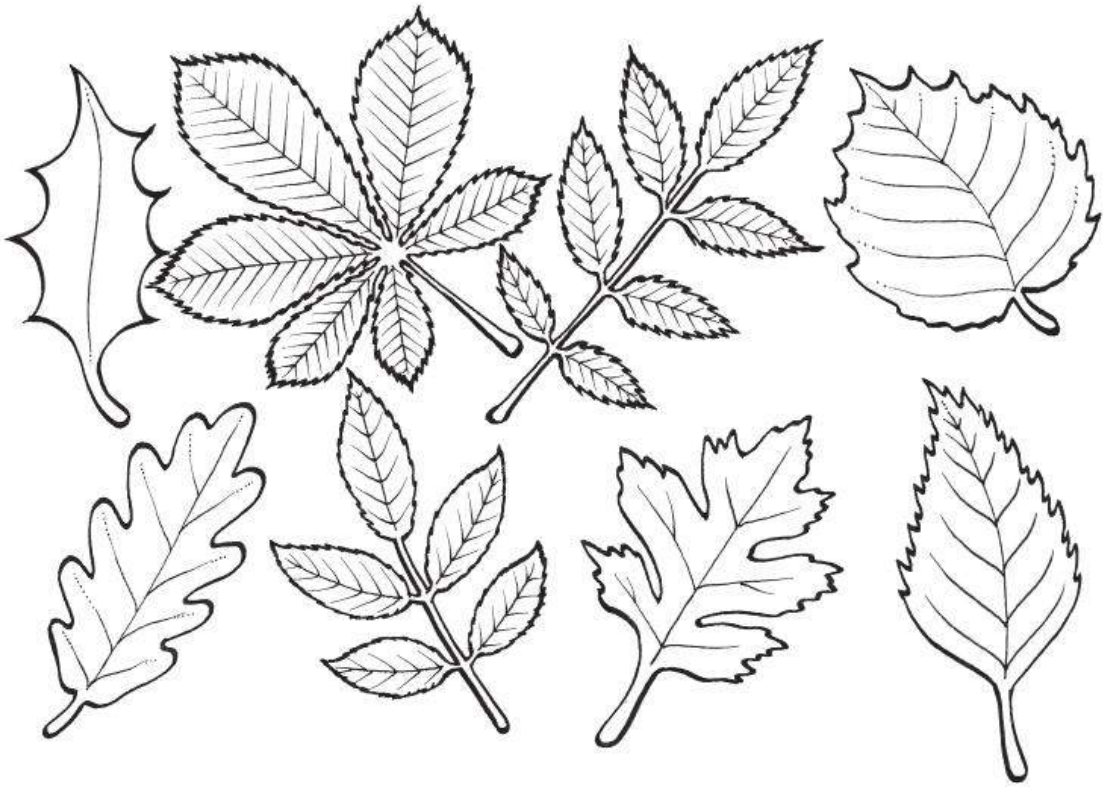
	Date	Condition of leaves	Insects found
September 1st fortnight			
September 2nd fortnight			
October 1st fortnight			

And so on until June.

Note changes in the leaves, when all the leaves have fallen, condition of bark, buds, catkins, seeds etc, Keep a note of the number and variety of creepy-crawlies found.

Plant key

By this stage, you will have learned about 8 trees in school.
Here is an outline of all the leaves to remind you.



Name each leaf. Construct a key to the eight leaves.

Helpful pointers: compound leaves, simple leaves, number of leaflets, leaf edges (prickly, wavy, toothed, deeply-cut) and leaf shape (pointed, rounded).

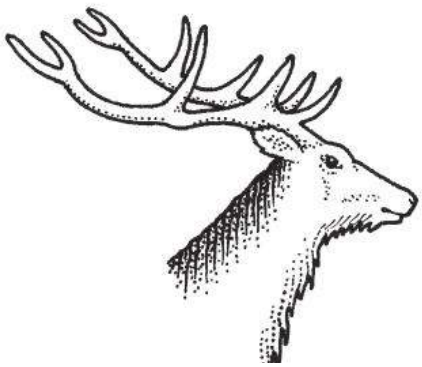
The class can be divided into groups of 4 or 5 and each group makes a key. They need not all be the same as long as they work. You can test your key on another group.

The best keys identify the leaves with the fewest steps. A typical key would have 6 steps.

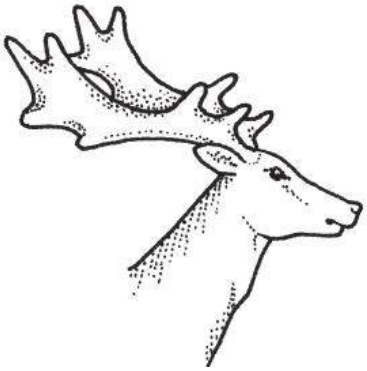
My Plant Key

Debate

Deer are herbivores that feed on grass, leaves, young growing trees and the bark of trees. There are three wild species in Ireland.



Red Deer



Fallow Deer

Sika Deer

Make two food chains with deer.

	Deer	

	Deer	

What carnivores feed on deer in Ireland? _____

Wolves are carnivores on deer but they have been extinct in Ireland since the 1700s.

What is the result of deer having no natural predator? _____

What controls the deer population in Ireland? _____

How do uncontrolled numbers of deer affect the following environments:

Native oak woodland? _____

Farmland near deer upland territory? _____

Enclosed parkland where a deer herd is kept? _____

So deer in Ireland have to be managed. But how?

Is hunting a good way to control deer numbers? _____

What other, more effective, conservation measures could be used? _____

Recently it was reported that a 4th species of deer – the Muntjac Deer – has been introduced to Ireland. Is this good or bad? _____ Why? _____

_____

Food Chain Game

Each member of the class picks one of the following species and writes the name in big letters on a piece of paper. Take turns to pick and make sure that some from each group are picked.

PLANTS	HERBIVORES	CARNIVORES	OMNIVORES	DECOMPOSERS
Buttercup	Deer	Ladybird	Robin	Earthworm
Nettle	Pigeon	Hedgehog	Fox	Woodlouse
Hawthorn	Bee	Wasp	Badger	
Oak	Rabbit	Kestrel	Blackbird	
Hazel	Swan	Frog	Jackdaw	
Primrose	Squirrel	Heron	Magpie	
Cow Parsley	Snail	Spider		
Elder	Butterfly	Bat		

One name is fixed to the back of each pupil without their seeing what the name is.

The class divides up into twos.
Each member of the pair can see the other's name, but not their own.

To find out what name is on their back, each pupil can ask their partner questions about it. The only questions allowed are Yes/No ones. They can keep asking until they get a 'No' and then it is the other person's turn.

Example

Person (wearing ladybird name) asks:

Is it an animal? Yes. Is it a carnivore? Yes. Has it wings? Yes. Is it a bird? NO.

Other person (wearing a nettle name) asks:

Is it a plant? Yes. Has it flowers? Yes. Are the flowers yellow? NO.

First person's turn again.

You can all now form a food web by standing in a circle and passing a ball of string around from each species to its food.

Identify

Crows are a family of birds that have seven species in Ireland. The most common species are Rooks, Jackdaws and Magpies.

Magpie

Jackdaw

Rook

Look carefully at the drawings above.

Which one has the longest tail? _____

Which one has the thickest beak? _____

Which one is the smallest? _____

Which one is black and white? _____

Which are in your school grounds? _____

Fieldtrip to see Crows (do this in September and again in May)

Spend 15 minutes in the school grounds looking for crows.

Which species was the easiest to see? _____

Which one was the most common? _____

Which species was walking in the school field? _____

Were they only with their own kind or were there mixed groups? _____

What species were together? _____

How many of each were there? _____

FIND OUT:

Where do Magpies nest? _____

Where do Jackdaws nest? _____

Where do Rooks nest? _____

Research

There are seven different species of crow in Ireland. You already know three. Find out what the other four species of crows in Ireland are:

1. _____ 2. _____ 3. _____ 4. _____

Crows are omnivores.

As herbivores they eat _____ .

As carnivores they kill and eat _____ .

They are also scavengers and eat things that are already dead: _____

_____ .

Because of these different methods of feeding, they can always find something to eat and so are very successful birds.

Hunting for Nests

Rooks and Magpies, in particular, make very obvious nests in Spring.

Survey your area in March before the leaves come on the trees and count the number of nests you find.

Rooks' nests _____

Magpies' nests _____

Survey

Are there more Magpie nests or Rook nests? _____

Which species nests in a colony of nests? _____

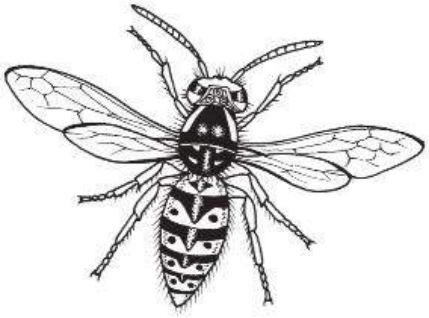
What are the advantages of this system? _____

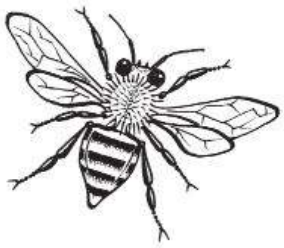
Which one nests alone? _____

What are the advantages of this? _____

Identify

Wasps spend all summer long collecting greenflies, blackflies and white flies to feed their young.





Above are drawings of a wasp, a bumble bee and a honey bee.
Can you tell which is which?

A _____ has the fattest body.

All three have _____ wings.

A _____ has no waist.

A _____ has yellow and black eyes.

Both types of _____ are hairy.

A _____ has a shiny body.

A _____ has a horizontal stripe on its thorax (middle part of its body).

A _____ has large stripes all down its body.

Label each of the three drawings above.

Mimicry

Insects with yellow and black stripes are not eaten by birds. This is because birds think all these insects have stings but actually only bees and wasps have. Other insects look like wasps and so avoid being eaten. This is called mimicry.

Look up pictures of the following insects: Hoverfly, Woodwasp, Bee Hawk Moth.

Which one is the best mimic? _____

A Debate

Wasps and Bees are very important. Without them, life on earth could not continue.

Your class is going to have a debate about the importance of bees and wasps. It is divided into two groups – one for bees and one for wasps. There will be three speakers for each side in the debate. Each half of the class helps their speakers to have information to speak about. This is called doing research. The work is divided up so that everyone finds out something.

Bees	Wasps
How many bees in a colony?	How many wasps in a colony?
What do bees eat?	What do wasps eat?
What are baby bees fed?	What are baby wasps fed?
What is the result of bees looking for food on flowers?	What is the result of wasps collecting this food on garden plants?
What crops of food depend on bees?	What crops of food depend on wasps?
Why do bees have stings?	Why do wasps have stings?
Do all bees have stings?	Do all wasps have stings?
Why do bees swarm?	Why do wasps not swarm?
What would the world be like with no bees?	What would the world be like with no wasps?

The speakers take turns to say good things about bees and wasps and try to prove which is the most important. Another class can be invited to listen to the debate.

Wild Things at School DVD

The DVD at the back of this book contains resources that you can use when teaching the *Wild Things at School* programme. Irish and English versions of the *Wild Things at School* worksheets are on the DVD. The two *Wild Things* books by Eanna Ní Lamhna are provided so that you can use them in many different ways. You can, for example, print out worksheets for students and project them onto the wall or whitescreen. All of the original drawings by Christine Warner are on the DVD together with actual photographs of all the wild things to enhance the learning experience.

Disk contents

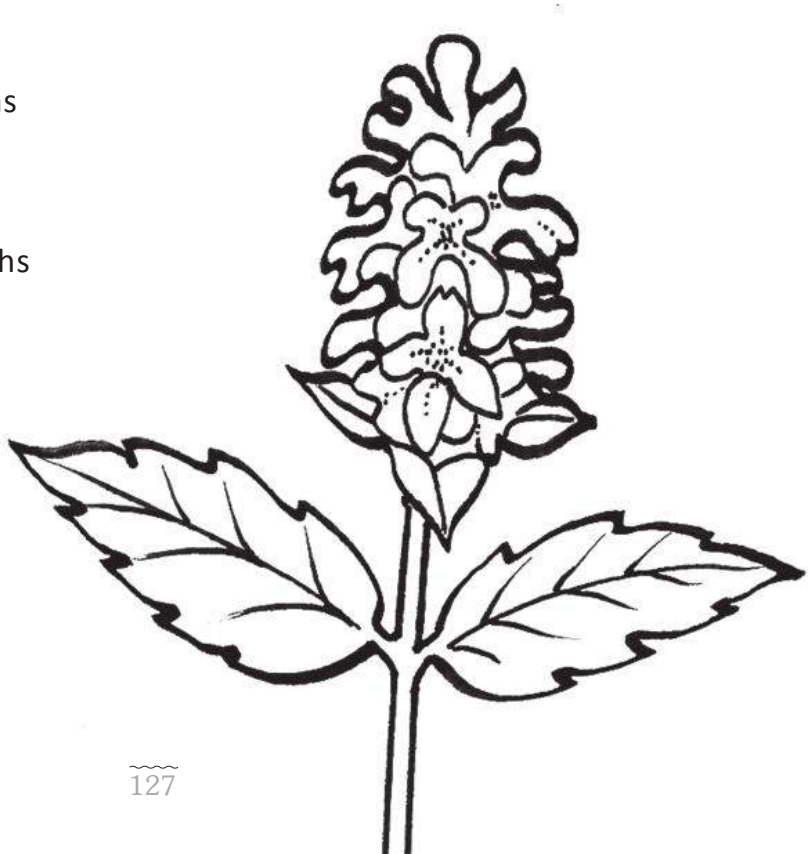
Wild Things at School: A book for Primary School Teachers
by Eanna Ní Lamhna

Wild Things at School: Worksheets for Primary School Students
by Eanna Ní Lamhna

Irish version - *Nithe Fiáine ar Scoil*

Wild Things illustrations

Wild Things photographs



Photography credits for images on DVD

Junior Infants	Photograph credit
Daisy 1-2	Shirley Clerkin
Dandelion clocks	Shirley Clerkin
Dandelion 1-3	Shirley Clerkin
Hedgehog	Terry Flanagan
Horse Chestnut	Eric Dempsey
Horse Chestnut & conkers 1&2	Shirley Clerkin
Horse Chestnut leaves	Shirley Clerkin
Ladybird	Eric Dempsey
Ladybird x 2	Shirley Clerkin
Robin & Robin 2	Eric Dempsey

Senior Infants	Photograph credit
Buttercup & Daisy	Shirley Clerkin
Buttercup_1	Shirley Clerkin
Clover	Shirley Clerkin
Clover _2	Shirley Clerkin
Clover_3	Shirley Clerkin
Holly	Eric Dempsey
Holly Tree	Eric Dempsey
Holly Tree2	Eric Dempsey
Mute Swan	Eric Dempsey
Mute swan ad-cygnet	Eric Dempsey
Rabbit	Eric Dempsey
Red Clover	Shirley Clerkin
Spider 1,2,2A,3A	Eric Dempsey
Web with frost	Shirley Clerkin

First Class	Photograph credit
Blackbird Female	Eric Dempsey
Blackbird garden	Eric Dempsey
Bluebells 1 - 4	Shirley Clerkin
Bluebell 5	Monaghan Tourism
Fox	Terry Flanagan
Oak	Eric Dempsey
Oak leaves	Eric Dempsey
Oak leaves looking up from ground	Shirley Clerkin
Oak leaves in Autumn	Shirley Clerkin
Oak with acorn	Shirley Clerkin
Primrose 1-3	Shirley Clerkin
Wood louse 3,4,5	Eric Dempsey

Second Class	Photograph credit
Ash	Eric Dempsey
Ash leaves	Eric Dempsey
Grey squirrel 12	Eric Dempsey
Honeybee 1-3	Eric Dempsey
Red squirrel	Eric Dempsey
Red squirrel 0001	Mike Brown
Ribwort leaves	Shirley Clerkin
Ribwort 1 & 2	Shirley Clerkin
Self Heal 1 & 2	Shirley Clerkin
Wood pigeon	Eric Dempsey

Third Class	Photograph credit
Frog 1 & Frog 2	Terry Flanagan
Haws on Hawthorn in Autumn	Shirley Clerkin
Hawthorn	Eric Dempsey
Hawthorn or Whitethorn	Shirley Clerkin
Nettle_1	Shirley Clerkin
Nettle_2	Shirley Clerkin
Robin run the hedge_2&3	Shirley Clerkin
Snail 1,2,3	Eric Dempsey
Snail 4	Shirley Clerkin
Swallow in sand	Eric Dempsey
Swallow on a wire	Eric Dempsey
Young swallows	Eric Dempsey

Fourth Class	Photograph credit
Badger	NPWS
Grey Heron	Eric Dempsey
Butterfly 3	Shirley Clerkin
Elder	Eric Dempsey
Elder Berries	Shirley Clerkin
Elder Berries & Leaves	Shirley Clerkin
Elder leaves & blossom	Eric Dempsey
Elder Tree Clontarf	Eric Dempsey
Lords & ladies 1-4	Shirley Clerkin
Peacock Butterfly	Eric Dempsey
Red Admiral Butterfly	Eric Dempsey
Vetch & Bee	Shirley Clerkin
Vetch 1 -4	Shirley Clerkin

Fifth Class	Photograph credit
Bat_daubentons	NPW
Earthworm 1	Eric Dempsey
Earthworm 2	Eric Dempsey
Hazel Catkins 1	Eric Dempsey
Hazel Catkins 2	Eric Dempsey
Hazel Leaves	Eric Dempsey
Hazel Nuts	Eric Dempsey
Kestral 1	Eric Dempsey
Kestral 2	Eric Dempsey
Poppy 1	Eric Dempsey
Poppy 2	Eric Dempsey
Speedwell-2	Shirley Clerkin

Sixth Class	Photograph credit
Birch	Eric Dempsey
Birch in winter	Shirley Clerkin
Cow parsley 1,2,3 & 4	Shirley Clerkin
Fallow deer stag	NPWS
Herb robert_1	Shirley Clerkin
Jackdaw 1 & 2	Eric Dempsey
Magpie	Eric Dempsey
Red Deer	NPWS
Rook	Eric Dempsey
Sitka deer	NPWS
Wasp 1	Eric Dempsey
Wasp 2	Eric Dempsey

Wild Things at School DVD

About the Author

Éanna Ní Lamhna

Éanna Ní Lamhna is best known for her environmental expertise as a broadcaster on the radio programme *Mooney Goes Wild*. Her Co. Louth accent gives her one of the most instantly recognisable voices on radio. Her ability to bring her subject to life is legendary and her no-nonsense approach to romantic views about wildlife is well known.

She is first and foremost a botanist with degrees in both botany and ecology from University College Dublin. Her interest in the environment has expanded with her work over the years, to include birds, mammals and in particular creepy-crawlies whose doings hold a particular fascination for her. Her ability to awaken enthusiasm for these creatures in her listeners is exemplified by the remark made to her lately, "Whenever I see a spider I always think of you and put it outside instead of stamping on it."

She began work in 1974 in the Biological Records Centre — in its first incarnation in An Foras Forbartha. She quickly realised that if she was to receive any biological records from the Irish public she would first have to go and teach them about Irish wildlife. So began a career of teachers' courses, radio programmes, lecturing at third level, field trips with Secondary School pupils and most significantly of all, visits to Primary Schools to teach the pupils and indeed the teachers there, about the wildlife around them.

Her publications include *Talking Wild, Wild and Wonderful*, *Straight Talking Wild* and *Wild Dublin*. She has just completed a five-year term of office as President of An Taisce and is currently the Vice-President of the Tree Council of Ireland.

About the Illustrator

Christine Warner

Christine Warner is an illustrator and calligrapher working mostly in the field of education. She provides full colour illustrations, line diagrams and cartoons for textbooks, workbooks and posters. She has worked for many educational publishers and also for Dúchas, Forfás and Trócaire.

While she illustrates material on a wide variety of subjects, she specialises in science, having science degrees from University College Dublin and Trinity College Dublin. She particularly enjoys producing wildlife illustrations and cartoons. She has been an environmental activist for many years. Christine may be contacted via email at cwarner1@gmail.com

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