

Plantlifa

Exploring Ramscombe Farm Reserve

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Use this pack to help you get the most out of your wildlife adventure!

d forbout Plants

Introduction

This education pack is designed to help teachers use Ranscombe Farm Reserve for learning outside the classroom. It contains a number of activities to help students learn about, explore and discover the wonderful wildlife that the reserve supports.

Ranscombe Farm Reserve is one of the most important places in Britain for rare and threatened plants and flowers. It is a beautiful piece of Kent Countryside with amazing views across the Downs and Medway Valley. Ranscombe Farm Reserve is easy to reach from the Medway Towns and is suitable for visits throughout the year.

Plantlife is the organisation that is speaking up for our wild flowers and plants. We are here to celebrate their beauty and to protect them. Wild flowers and plants play an important role for wildlife and their different colours light up our countryside or landscapes. Learning about wild flowers and plants near to where you live is one of the best ways to understand and value our natural environment.

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Preparing for expedition



Going on expedition to Ranscombe Farm Reserve

Before you go on your adventure to Ranscombe Farm Reserve you will need to make sure that you are going to be safe. You should always go on an expedition with an adult.

A risk assessment

Can you think what you, your classmates and your teacher need to do to make sure that the adventure will be safe? You could look at and complete the form below by drawing a line from the 'Injury' column to the appropriate 'Possible Actions' column. One has been done for you.

HAZARD	RESULTING INJURY OR ILLNESS	POSSIBLE ACTIONS TO REDUCE THE RISK	
Sun	Sunburn	• Carry a map	
	Heat stroke Heat exhaustion	 Stick together in your groups 	
Bee Sting	Swelling	 Look both ways, cross quickly and safely 	
	Allergic reaction	• Wear sun cream and reapply regularly	
Crossing roads	Road traffic	 Make sure you drink lots of water 	
	Accident	• Take rests in the shade	
Getting lost	Dehydration Hupothermia	• Wear a hat	
	Tiredness	• Carry a phone so people know where you are	
Nettle sting	Swelling and irritation	and you can call if you get into difficulty	
		Seek medical attention if necessary	
Water (rivers, ponds, lakes)	Drowning	• Stay away from water edges	
		• Stand totally still and cross your hands in	
Mud	Slipping and falling over		
		• Do not pick and eat any berries, nuts or mushrooms	
Poisonous plants	Feeling sick Allergic reaction	• Wear sensible shoes or boots	
Coldworther	Hunothormia	• Co around hig areas of mud	
	Παροιπεπιπα	• Eaco the deg but do not stare into	
Dogs- unattended	Bites	its eyes as this might frighten it	
bogs unattended	Knocking you over		

How might the time of year affect your risk assessment?

How might the time of day affect the risk assessment?

What other actions could you add?

Dog Safety

There are a lot of dog walkers on the site – here are some tips for staying safe. If a dog runs up to you and its responsible adult is out of sight, do not put out your hand to stroke the dog. Allow the dog to sniff you so he can learn who you are but stand totally still and keep your hands in front of your body. Face the dog at all times, turning around so that you can see it but do not stare into its eyes because this might frighten it. If you get knocked over by a dog, roll up into a ball, cover your face with your arms and stay as still as you can. Do not try to get up until the dog has gone away: if you are not moving the dog will be more likely to leave you alone.



Doing your own risk assessment

A risk assessment is a way of thinking about what hazards you might come across during an activity, what risks they might pose and what you can do to make these risks as small as possible.

To do this, you need to think about how big the risk is to start with, and this depends on:

- How likely it is that someone will get hurt
- How badly they might get hurt
- How many people might
 get hurt

Make a copy of the table at the bottom of the page and follow the steps to help you complete your risk assessment.



a hazard is something that could cause someone to get hurt, e.g. an open fire

Risk is how likely it is that someone might get hurt by a hazard and how badly hurt, i.e. the likelihood of being badly burned by an open fire.

Step 1: There are a number of hazards that you could encounter on your exploration. Select the ones that you think are relevant to your expedition from the list below and use them to help you complete your table. Feel free to add any other hazards you might encounter during your exploration at Ranscombe Farm Reserve.

Step 2: Now think about the injuries that may result from the hazards that you have identified and put them in the correct column.

Step 4: Decide whether the risk is low enough for you to proceed with the activity

Step 5: When you have completed your table, have a look over the 'What could you do?' column and:

A. Make a list of things you need to take with you

B. Agree a set of golden rules for your expedition.



HAZARD	RESULTING INJURY	WHAT COULD YOU DO TO REDUCE THE RISK OF THIS INJURY OCCURING?	IS THIS AN ACCEPTABLE RISK?

Welcome to

Ranscombe Farm Reserve

Ranscombe Farm Reserve is a nature reserve and working farm which has been known for many years as an important site for rare wildflowers. Its extensive landscape holds a range of different habitat types including ancient woodland, arable farmland and chalk grassland. There are fabulous views of the surrounding countryside. The reserve lies in the heart of the Kent Downs Area of Outstanding Natural Beauty (AONB) and a large part of the reserve is designated a Site of Special Scientific Interest.

The woodland has been managed, probably for hundreds of years, by an ancient method of management called 'coppicing'. Each small area of woodland is harvested in turn and wood from these trees has been important to local people for firewood, building, making tools, fencing and hop poles, and even repairs to Rochester Castle. As you journey through the woods in Ranscombe Farm Reserve, you will see different stages of the coppice cycle, as well as mature trees which have not been coppiced.



History of Ranscombe Farm

Evidence of people inhabiting Ranscombe goes back 6-8,000 years, following the last ice age. Signs of farming may date back to the Bronze age, noticeable as flat areas following the contours of hill-sides, where crops were grown. Ranscombe was once much more populated than today with evidence of crofts from 1100s and possible remains of a 13th century windmill.

Why is it called Ranscombe – What's in a name? Places with 'Ran' or 'Ram' in them generally mean the area was once used as a ram or sheep farm, the word 'combe' refers to a valley. It may be that Ranscombe was a ram farm in the valley and this is how it got its name.



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Meadow clary

Broad-leaved cudweed

Plants at Ranscombe

The 620 acres of Ranscombe is one of the UK's most important nature reserves for rare wild flowers. This is a result of its dry, sunny climate, the underlying geology and the careful management of the land over time.

Meadow clary

This striking blue flower was first found in Britain at Ranscombe Farm in 1699. It has survived here because the landscape has been relatively undisturbed for 300 years. Look out for it between May and July.

Broad-leaved cudweed

As the use of pesticides was stopped on the chalky, arable fields at Ranscombe, the dormant seeds of this rare plant emerged. You can see the silver leaves in their thousands in the summer, making it Britain's best site for this rare plant.

Man orchid

These yellow/green flowers which resemble tiny people with arms and legs are best seen in May and June. They favour the warm, chalky grasslands, and can be found on the steep slopes behind the main car park.

Man orchid

A special animal at Ranscombe

Inhabiting Ranscombe's hedgerows and coppice woodland is a very special creature called a dormouse. Dormice are nocturnal, using their large eyes, long whiskers and excellent sense of smell to find their way through the bushes in the dark. Flowers, pollen, catkins and insects provide food, as do berries and nuts in autumn. Tree hollows and old bird nests make good places for them to rest in the daytime, or they may weave a nest from honeysuckle bark. They are the only British rodent to hibernate so they need to eat as much as they can to fatten up so they can survive the winter. A deep nest in a hedge or on the ground, lined with grass, wool and leaves is built where they curl up and sleep from mid October to May.

Over the past 100 years, dormouse numbers have declined throughout the UK due to a lack of woodland management and removal of hedgerows. However at Ranscombe there are plenty of food rich habitats that support a healthy population of dormice.





Investigation one

Changing woodlands



Coppiced Woodland Habitats how is wildlife affected as woodlands change over time?

Recently Coppiced area

Extra light reaches the woodland floor and allows plants to grow.

Butterflies, caterpillars and other insects feed on plants under the trees, and many insects will lay eggs on the new leaves.

Small birds can feed on the insects and nest in the shrubs.

Mice, voles, shrews and other small mammals can feed on the berries and insects.

Coppiced trees have many stems which grow quickly because they have welldeveloped root systems.

Young wood has smooth, thin bark.



Trees are cut to their base every 15 to 20 years and new stems grow from the stump or stool.



10-20 year coppice area

Tall trees cut out the light with their leaves so fewer ground-plants can grow underneath during the summer.

Less light reaches the ground so fewer plants grow.

As the stems grow at the same time there is lots of competition between them, making the stems grow tall and straight. Stems grow tall and straight so are ideal for building materials.

Winding open paths or glades are cut through older coppiced areas, encouraging flowers and butterflies in the edge habitat.

There are lots of leaves on the ground, making a good habitat for many animals.





Standard Trees

Trees that have not been coppiced are called 'standards'. They provide many habitats and can be very old.

Standard trees have one trunk and a large canopy of branches and leaves.

The leaves trap light to make food for the tree, as they grow they create a dark, shady habitat beneath.

Not many plants can grow under the tree but mosses, lichen and fungi like it here. Fungi can be food for mice and other animals.

The rough bark of an old tree can have many insects and their larvae living in it.

Leaves can be eaten by caterpillars

When leaves fall in autumn they create damp leaf litter for mini-beasts to live in. By chewing up the leaf litter, the minibeasts slowly turn it into soil.

The trunk and large branches can provide nest sites for birds like woodpeckers and homes for dormice.

Rotten wood from old trees can provide food and homes for insects like beetle larvae and woodlice.





Investigation 1 Activities

Download worksheets from www.wildaboutplants.org.uk/ranscombe

This investigation looks at trees and the plants that grow around them in the woodland. We look at tall, standard trees and those that have been managed by coppicing to see how this affects the light that reaches the ground and then the plants and animals which live nearby.

Activity 1: Looking at light

At your chosen point in the woodland think of words that will describe the amount of light you think is reaching the area under the tree.

You could think about these questions or think of some others. There is room on the worksheet to note down all your thoughts.

Is it shady or dark?

Does the tree have a large canopy of leaves?

Is it bright and sunny?

Does the tree grow tall and straight, without spreading out?





Activity 2: Ground cover

Now we have thought about the light look at the flowers and plants that are under or near your tree. What kind of plants are there under your tree, is it a bush like brambles or are there small flowers or even mushrooms?

Activity 3: Counting stems

Now it is time to look at how the tree has grown and what it looks like. You can draw and write in the boxes on the work sheet. Here are some suggested questions that you could ask yourselves.

How many stems or trunks does your tree have? Which group can find a tree with the most stems?





Activity 4: Distance between trees

Is the tree your are looking at the same kind as the one next to it, you can look at the leaves to see if they are the same. Work with a partner or in a small team. Measure how far apart the

trees are and make a note in the correct box on you worksheet? You could choose to do more than one nearby tree and see if there is a pattern. You could use a meter rule, a tape measure or other device for measuring.





Did you know that you can guess or estimate how old a tree is

Activity 5: Hug a tree

by the size of its trunk? You need to do some maths possibly using a calculator but you can measure it now and do the maths later.

Circumference in cm ÷ 2.5 = Age

A tree's circumference grows by 2.5cm each year, so by measuring the trunk of a standard tree you can work out how old it is.

Think about how old a coppiced tree's stems are compared to its base? Measure the tree and note the measurements in the box below. You could measure it two or three times and see if you get the same measurement.

Activity 6: How tall is your tree?

Trees are tall plants that grow up towards the light when they are all starting off at the same time as happens when they get coppiced. Tall standard trees have only one stem and so will be much taller. One way is to estimate how tall your friend is and work out how many friends would need to be stood one on top of the other to reach the top.





Activity 7: Who lives where?

As you have been looking and working in the woodland habitat you will probably have heard and seen many different birds and other animals. Take some time to see or imagine which animals might live here?

- 1 Where exactly do they live?
- **2** Why do they like it?
- For example: If they are living in the tree would they be:
- On the leaves or bark
- On the ground
- How do they find food?
- How and where would they make a home?

Investigation two



In the hedgerows

Hedgerows are made up of many different trees and plants that provide shelter, food and nests for many animals.



Birds love to eat the caterpillars that feed on new leaves.

Aphids feed on leaves and produce a sweet liquid which butterflies and ants eat. Mice and ladybirds will eat aphids.

Bats fly along the sheltered hedgerow catching moths and other insects.

Hawthorn, blackthorn and bramble form thick dense vegetation for birds, mice, bank voles and hedgehogs to nest in.

Hawthorn flowers early in spring. Hungry dormice will eat the flowers to fatten up, after sleeping all winter.

In summer, the honeysuckle flowers also provide nectar for bees and butterflies.

Field margins around farmland at Ranscombe Farm Reserve are made up of grasses, natural weeds and wild flowers.

Getting ready for Winter in hedgerows

Berries make valuable food for birds and small mammals who are fattening up to get through the cold winter months.

Field margins and bramble provide cover for animals and insects to hibernate in over winter.

Many moths and butterflies spend the winter as pupae, eggs or larvae, sometimes using leaves like honeysuckle to make cocoons.

Old bird nests are often used by mice as feeding platforms and a place to store berries and nuts for winter.

Large old hedges have plenty of leaf litter and dead wood for insects to hibernate in.

Ranscombe Farm Reserve occupies 250 hectares (620 acres) comprised of woodland, arable farmland and chalk grassland, providing many different habitats for wildlife. These habitats change with the seasons, and wildlife has to adapt its lifestyle to make the most of the resources available such as food and shelter.

Spring and summer brings growth and regeneration, while autumn is a time for preparing for the grip of winter.

In the Woodlands

Most woodland plants grow and flower in spring and die back in summer when they are shaded by the tree's leaves.

> Getting ready for **Spring** in woodlands

Look out for early flowers like bluebells and primroses which waking insects can feed on and gather pollen.

Caterpillars feed on new, soft green leaves and are good food for baby birds like blue tits.

Deciduous tree flowers open before the leaves so the pollen can blow away more easily.

Hedgehogs come out of hibernation to search for insects and worms.

In summer animals born in the spring learn to look for food.

The thick canopy of leaves on the trees provides shelter and protection for nesting animals, such as squirrels, whose young are born in nests called dreys. As the days shorten and get cooler, the green leaves turn gold, brown and red and finally fall off.

Getting ready for Winter in woodlands

Fungi growing in autumn provide food for squirrels, mice, slugs and snails.

Nuts and berries provide an important source of food for birds and animals. Squirrels and jays hide nuts on the forest floor to feed on during winter.

Look out for animal tracks in the snow, such as foxes and squirrels.

Hedgehogs fatten up on worms and beetles before hibernating in a nest of leaves and grasses.

Leaf litter, rotting wood and bark are good places for insects to hibernate, including queen bumblebees.

Birds like blue tits and great tits feed in mixed flocks on insects eggs and pupae hidden under tree bark or leaf litter.

Investigation 2 Activities

Download worksheets from www.wildaboutplants.org.uk/ranscombe

This series of investigations can be carried out in any habitat including hedgerows or field margins that border the farmland and woodlands.

Visits can be made in Spring / Summer and Autumn / Winter to make comparisons.

Activity 1 – Counting plants

Place a hoop on the ground.

- How many plants and flowers can you count?
- Choose a colour, how many of each colour can you see?
- Can you count the number of petals on different flowers?





Activity 2: What's that tree?

You can identify trees by looking at their leaves in summer or their buds in winter.

- Look at the shape of the leaf or the arrangement of the buds and try to identify the tree.
- Do a bark rubbing.
- Do different trees make different patterns?
- Try using more than one colour of crayon.



New life

As day length increases and temperatures increase, the countryside springs into life. Flowers begin to grow, buds open to reveal soft green leaves and animals wake up from hibernation to feed and nest. Children can explore the hedgerows / field margins and woodlands using the fun activity sheets to help them recognise the riches of Spring / Summer and how they are used by the animals that live there. If you are making a comparison, on the second visit go back to the places you explored before! These habitats change with the seasons, so the wildlife has to adjust its lifestyle to make the most of the resources (like food and shelter) that are available. Spring and summer brings growth and regeneration whereas autumn is a time for preparing for the grip of winter.

Activity 3: Bingo Treasure Hunt

Using the bingo cards, race your friend to find the treasure.

Activity 4: Art in hula hoops

Place a hoop on the floor and make a picture using things that you can find on the ground such as leaves, twigs, berries, stones.

(Remember not to pick berries from the trees as they will provide food for the birds and animals).

- Take a photo of your hoop and picture.
- Now take the hoop away. Can you still see the picture?
- Can you take another photo?
- Think about what might happen to the different materials you have used in your picture.

Activity 5 – Home sweet home

Choose an animal that might live in one of the habitats you have been exploring.

Some things to think about:

- What does it eat?
- Where does it shelter?
- Where does it go in winter?





Winter moves in

Days shorten, nights lengthen and the temperatures drop giving cooler days and cold nights, and leaves and plants die back. How do the animals cope and prepare for winter? Using the fun activities, let the children explore the habitats, noticing how different the countryside looks at this time of year and how the animals use their changing habitat.

Investigation three



You are standing on the North Downs, a ridge of hills made of chalk, which wraps around the South of London and extends all the way across Kent to meet the sea at Dover. People have been living alongside wildlife in this area for thousands of years, so your journey though Ranscombe Farm will be a journey through woodland and farmland and also a journey through time.

This area would once have been part of a huge, natural forest, with wolves, deer and wild boar roaming among the trees. The first people to settle here would have been huntergatherers. Traces of Stone Age tools and settlements have been found at and around Ranscombe Farm.



Along the way, you will consider:

How people and animals use and travel through this landscape How land use by man has influenced the landscape over the years How land use, especially farming, can be managed to benefit wildlife People have been moving through this landscape for thousands of years. The River Medway itself was a route to and from the sea for fishing and trade.

Before the Romans fortified the river-crossing at Rochester, there was already a long distance route linking settlements along the top of the Downs. This became the Roman Road known as Watling Street. The A2 road and the M2 motorway roughly follow its route all the way from London to Dover.

In the Middle Ages, pilgrims travelling to Canterbury from Winchester followed another ancient route, the Pilgrims Way, along the Downs where villages grew up along the line of natural freshwater springs. The Pilgrims used to cross the River Medway by ferry at Halling, just below the view point.

Later, roads and railways were built to transport people and the products of farming, quarrying and industry in and out of this area.





There is evidence that there were small-scale farms called crofts more than 1000 years ago in areas of Ranscombe Farm Reserve that are now wooded, and the edges of ancient, long narrow fields called 'strip lynchets' are still shown by low banks in some wooded areas.

Ranscombe Farm Reserve 1797 © The British Library Board OSD 121



The routes made by man can be barriers to the movement of animals through the landscape.

Which animals would find a road, footpath or railway an insurmountable barrier?

Ranscombe Farm Reserve 1961-62

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Plants also travel

Their seeds need to be dispersed (sometimes by animals) to new and suitable places for them to grow and provide habitats for the animals that depend on them. It is important that nature reserves are connected to neighbouring areas which are also managed sensitively for wildlife.



Investigation 3 Activities

Download worksheets from www.wildaboutplants.org.uk/ranscombe

Activity 1 – Mapping your journey

You will be given a map showing the paths you are allowed to use. Illustrate your own journey along the path you choose, to show different kinds of habitat, land-use and noticeable features. You could include:





Take some photos of the type of land use and landscape features you see along the way. Add numbers to your map to indicate where you have taken photos which you can use to illustrate presentations about Ranscombe Farm Reserve that you can complete at school.



Activity 2: Hunters and Gatherers

For this activity, as children walk through the woods they will be asked to imagine they are Stone Age settlers looking for a good place to set up their home. What do you need from your environment? Discuss and collect or photograph what you would need for:







Activity 3 – Meander through time

Make your way to the Plantlife notice board on the roadside just above the car park on Sundridge Hill.

This is a viewpoint from which you can see the River Medway cutting through the North Downs on its way to the sea.

In the nearby area or the fields spend some time looking at the view.

You will be given an outline drawing of the view from here. On it label the features you can see which are connected with transport and industry.



Close your eyes and listen to all the sounds you can hear. Write them down on the worksheet under the titles Natural sound and Man-made sounds.



Activity 4: Moving through the landscape

Animals also need to move through the landscape to find food, hide from predators and establish new territories when they grow up and leave home.

As you walk to or from the viewpoint overlooking the Medway Valley, have a close look at the hedgerows and woodland edges alongside the road or path. (The right-hand side of the road from here towards the private residential area is particularly suitable).

Count the holes through the undergrowth which have been made by animals coming in and out of the woodland.

See if you can work out which have been made by which animals and why they might have been entering or leaving wood.

Write them down on the worksheet under the titles: Animal, Number of holes and Reason for travel.

This has a follow up activity to be completed back at school.





Ranscombe Farm Reserve

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We are Plantlife

Plantlife is the organisation that is speaking up for our wild flowers and plants. From the open spaces on our nature reserves to the corridors of Westminster, we're here to raise their profile, to celebrate their beauty and to protect their future.

Wild flowers and plants play a fundamental role for wildlife, and their colour and character light up our landscapes. But without our help, this priceless natural heritage is in danger of being lost.

Join us in enjoying the very best that nature has to offer.

Britain's countryside Save it with flowers www.plantlife.org.uk

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