

LINKS TO NATIONAL CURRICULUM

Science

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (Year 1).
- Identify and describe a variety of common animals including fish, amphibians, reptiles, birds and mammals (Year 1).
- Identify and name a number of plants and animals in their habitats, including micro-habitats (Year 2).
- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other (Year 2).

KEY LEARNING OBJECTIVES

1. To understand what a habitat is.
2. To identify, name and describe a variety of common wild and garden plants.
3. To identify, name and describe common deciduous and evergreen trees.
4. To identify, name and describe a variety of common fish, amphibians and reptiles.
5. To identify, name and describe a variety of birds and mammals
6. To identify, name and describe a variety of minibeasts.

Notes to Teachers

- There is an outline lesson plan covering each of the above learning objectives.
- The outline lesson plans are not intended to be of equal length and can be amalgamated or split to suit timings.
- Activities given are suggestions only. The main purpose of the lesson plans and PowerPoint presentation is to provide key information and visual aids for teachers to adapt to their needs.
- The PowerPoint presentation runs alongside the plans and all slides are referred to in the lesson plans. Please feel free to modify the presentation by adding your own slides or deleting those you don't need.
- **In order that children can attempt to identify the plant or animal shown on a slide, the name will not appear until the slide is clicked a second time.**
- There is a wealth of fact sheets and other downloadable publications on the YPTE website. These will provide additional information if you wish to focus on a particular topic and also enable children to carry out their own research.

LESSON 1: HABITATS

SUGGESTED STARTER ACTIVITY

Ask the children to think about the things plants and animals need to stay alive and healthy.

Animals

If they have pets at home, can they make a list of what they need to do to make sure their pet stays healthy e.g. feed regularly, provide drinking water, exercise, provide a bed and bedding for warmth, provide a shelter such as a hutch/cage to give protection from the weather and predators.

Plants

Do they have plants in their garden at home? Can they list everything plants need to grow e.g. a place to grow such as a pot, grow bag or flower bed, watering regularly, enough sunlight, support such as a trellis or canes, weeding around them to make sure other plants don't steal all their water and light.

TEACHER INPUT

What is a Habitat?

All plants and animals live in habitats. **A habitat is a place where a collection of plants and animals live** and it provides them with the things they need to survive e.g. food and shelter. Habitats can be as big as a jungle or as small as a leaf.

Slide 3: In a garden or school grounds, there can be many habitats - pond, vegetable garden, field, playground, flower garden, wooded area etc. Each habitat will have different plants and animals living in it e.g. some plants prefer bright sunny spots to grow, whilst others like shady places. Plants and animals often have to **adapt** or change in order to survive - in the following lesson plans you will find many examples of plants and animals that have developed special features for survival.

Slide 4: There are also **mini-habitats - a tree or group of trees and micro-habitats - a very small habitat**, for example under a plant pot, stone, log or leaf litter.

Slide 5: The plants and animals (including humans) in a habitat need each other to survive. When a habitat changes, the animals and plants that live there are affected.

Wild animals and plants are losing their natural homes as woodlands, hedgerows, fields, marches and ponds are destroyed to make way for roads, houses, factories etc.

SUGGESTED ACTIVITY

Ask the children to think about different places where they can find evidence of animal life. Can they think of habitats in their own gardens or in their school grounds?

Create a mind map of their ideas e.g. fallen logs, window sills, plant pots, trees, hedges, ponds, flower beds, long grasses, leaf mould, short grass.

LESSON 2: IDENTIFYING WILD AND GARDEN PLANTS

SUGGESTED STARTER ACTIVITY

How many plants, flowers and trees can the children name that they have seen in their gardens, school grounds, park, countryside etc? Produce a mind map with all their ideas on the board.

TEACHER INPUT

The children will enjoy identifying many of these plants themselves, so the name label will not appear on the slide until the second click.

Common Wild and Garden Plants

Slide 6: **Stinging Nettle**

The whole plant is covered in stinging hairs - this is an effective way to avoid being eaten and also makes patches of stinging nettles a haven for caterpillars and other insects. Cooking destroys the venom and can produce a tasty vegetable or nutritious soup - full of iron and vitamin C.

Slide 7: **Dock**

Dock grows all over the UK and flower spikes appear between June and October. It is well known to most of us as a herbal remedy for nettle stings, but there are differing opinions as to whether it really works.

Slide 8: **Lesser Celandine**

One of the first plants to flower in spring. A member of the buttercup family but lesser celandines have more and thinner petals than a buttercup.

Slide 9: **Primrose**

One of the first signs of spring - can flower as early as December and all through the spring. They favour woodland clearings, hedgerows and grassland.

Slide 10: **Cow Parsley**

Grows rapidly in summer and likes shady habitats, especially along roadside verges and hedgerows. When crushed between your fingers, the leaves produce a strong smell. A member of the carrot family!

Slide 11: **Herb Robert**

Found in a variety of habitats, mainly between May and September. 5 petalled pink flowers with reddish stems. Leaves can smell unpleasant.

Slide 12: Speedwell

A wildflower to "speed you well". Common on roadside verges and garden lawns. Years ago, travellers appreciated the bright blue petals and in Ireland they were sewn into clothes as a charm to protect against accidents.

Slide 13: Forget Me Not

A pretty plant with bright blue flowers. Found in woodlands and gardens, flowers from April to June.

Slide 14: Cowslip

Spring flowering plants, once more common than they are today. The bunched arrangement of the nodding flowers earned it local names such as "bunch of keys".

Slide 15: Dandelion

Children have helped dandelions become one of Britain's most common weeds. Blowing the seed heads to "tell the time" is a very effective way of dispersing the seeds. But they were not always seen as weeds: in Victorian times they were eaten by the wealthy in sandwiches and salads. Even today dandelions are used as a herbal remedy and the flowers can be made into wine.

Slide 16: Ivy Leafed Toadflax

Often grows in rock and wall crevices. It has a very clever seed planting mechanism - the flowers turn their heads to the sun until fertilised and then they turn towards the wall on which they're growing. This means the seeds are pushed into the dark cracks in the rock walls where they like to grow.

Slide 17: Bluebell

Member of the lily family. Bluebells have a clever way of surviving under the dense shade of woodland - the green leaves emerge early in the year, long before the leaves of the trees have opened. This means they do most of their growing when there is plenty of light and nutrients are then stored in their bulbs.

Slide 18: Snowdrop

One of the earliest bulbs to flower from January to March, when the weather is still cold. People often look forward to seeing snowdrops grow as they signify that the long winter is coming to an end and that spring is on its way.

Slide 19: Red Campion

Splashes of pink found on rural roadside verges in late spring and summer. The flowers open up during the daylight to attract butterflies and bees.

SUGGESTED ACTIVITIES











If possible, go out into the school grounds or local area to search for plants. Look in different habitats and ask questions e.g. in a dry area, why are there so few plants growing?

Please see following page for a wild flower and plant hunt sheet. It includes some of the most commonly found wild flowers. Please note that there is also a teacher copy with labels alongside the photos.

If possible, can the children plant flowers/vegetables and watch them grow.











Wild flower and plant hunt (teacher copy)

See how many of these plants and wild flowers you can spot. When you find one, put a tick in the box next to it. Write their names too if you know them.

	Ivy-leaved toadflax		Ivy
	Stinging nettles		Dandelion
	Speedwell		White dead nettle
	Lesser celandine		Forget-me-not
	Herb Robert		Thistle

Wild flower and plant hunt

See how many of these plants and wild flowers you can spot. When you find one, put a tick in the box next to it. Write their names too if you know them.

LESSON 3: IDENTIFYING DECIDUOUS & EVERGREEN TREES

SUGGESTED STARTER ACTIVITY

Do the children know the differences between deciduous and evergreen trees? If not, can they carry out some research using books and/or the internet. Their research should include examples of both types of tree.

Deciduous Trees - lose all of their leaves for part of the year. In cold climates this happens during the autumn, so trees are bare throughout the winter.

Evergreen Trees - don't lose all their leaves at the same time, they always have some foliage. They do lose their leaves a little at a time with new ones growing in to replace the old, but they are never completely without leaves.

TEACHER INPUT

Deciduous Trees

Slide 20: **Oak**

The most common tree species in the UK and supports more life forms than any other natives trees.

Grow up to 20-40m tall.

Leaf burst occurs mid May. The Oak has an open canopy that allows light to reach the woodland floor, allowing bluebells and primroses to grow below.

Fruit is the acorn - a rich food source eaten by many wild creatures such as jays, mice, squirrels, badgers and deer. Acorns are not produced until the tree is at least 40 years old.

Oak trees host hundreds of species of insects, supplying many British birds with an important food source.

Slide 21: **Ash**

3rd most common tree in Britain.

Can grow to a height of 35m and can live for 400 years.

Leaves can move in the direction of sunlight and sometimes the whole crown of the tree may lean in the direction of the sun.

Once the female flowers are **pollinated** by the wind, they develop into winged fruit or "keys" in late summer and autumn. These fall from the tree in winter and early spring and are dispersed by birds and mammals.

Slide 22: **Beech**

Can grow to over 40m and live for hundreds of years.

Dense canopy so beech woodland is shady. This means only shade tolerant plants can survive under its canopy.

Slide 23: Hawthorn

Can reach 15m.

Also known as the May tree as this is the month it flowers.

Can support more than 300 insects and the dense thorny foliage make it a good nesting shelter for birds.

Slide 24: Hazel

Can reach 12m.

The yellow catkins appear before the leaves and hang in clusters from mid-February.

Branches are bendy in spring and can actually be tied in a knot without breaking.

Hazel nuts are eaten by many animals and birds.

Slide 25: Horse Chesnut

Grow to around 28m.

Once **pollinated** by insects, the flowers turn into shiny conkers inside a spiky green husk. These fall in autumn and are eaten by deer and other mammals - as well as being played with by us!

The flowers are a rich source of nectar and pollen to insects, especially bees.

Evergreen Trees

Slide 26: Holly

An evergreen shrub which can grow up to 15m tall and live for 300 years.

Provides dense cover and good nesting for birds.

Berries are an important source of food for birds in winter and eaten by small mammals such as dormice.

Used to decorate our homes and make wreaths at Christmas time.

Slide 27: Scots Pine

An evergreen conifer, which can grow to 35m and live for 700 years.

Needle like leaves are blue-green in colour and lightly twisted.

After being **pollinated** by wind, female flowers turn into pine cones.

Pollination - insects, birds and the wind take pollen between flowering plants, which means the plants can make seeds and reproduce (have babies!).

SUGGESTED ACTIVITY

As a homework, the children could identify as many trees as they can - in their gardens, the park, on their way to school etc. Perhaps they could take photographs of them or sketch them. The Woodland Trust has a helpful range of online tree identification tools for schools:

https://www.treetoolsforschools.org.uk/activitymenu/?cat=tree_id

LESSON 4: IDENTIFYING FISH, REPTILES AND AMPHIBIANS

STARTER ACTIVITY

Question and answer session about the differences between fish, reptiles and amphibians. Can the children name examples?

Fish: Cold blooded, live in water, usually have scales and breathe through gills.

Reptile: Cold blooded, live on land, skin covered in hard, dry scales, and breathe air.

Amphibian: Cold blooded, can live on land and in water.

TEACHER INPUT

Fish

Slide 28: **Stickleback**

The 3 spined stickleback is one of the most familiar of Britain's freshwater streams and ponds.

Length about 6 cm.

Lifespan about 3 years.

For extra facts please see YPTE's website:

<http://ypte.org.uk/factsheets/stickleback-three-spined/overview>

Amphibians

For further information, please see:

<http://ypte.org.uk/factsheets/amphibians/what-is-an-amphibian>

Slide 29: **Common Frog**

Smooth skin with irregular dark blotches.

Vary in colour from grey, olive, green and yellow to brown.

Able to lighten or darken skin to match surroundings.

Most active at night and hibernate in winter.

Can breathe through skin as well as their lungs.

Eat insects that they catch with their long, sticky tongue as well as snails, slugs and worms.

Slide 30: **Common Toad**

Can grow to 18cm in length.

Broad, squat bodies and warty skin.

Vary from dark brown, grey and olive green to sandy coloured.
Tend to walk rather than hop.
Tend to live in damp places, but away from water and hibernate in winter.

Slide 31: Common Newt

Olive green or pale brown with bright orange, black spotted underside.
If they cannot be spotted in a pond, they can be found hiding under large stones or compost heaps.
Hibernate from mid October to February/March.
Eats insects, slugs and worms on land. In water they hunt insects, tadpoles and water snails.

Reptiles

For further information, please see:
<http://ypte.org.uk/factsheets/reptiles-british/overview>

Slide 32: Slow Worm

Despite their name and how they look, these are actually lizards!
Often found in mature gardens and allotments where they like hunting around the compost heap.
If you have a cat you're unlikely to find a slow worm in your garden, as they hunt them.
Hibernate October to March.

Slide 33: Grass Snake

Largest species of British snake, ranging from 70-100cm in length.
Olive green body and darkish spots or streaks on its sides.
Can be confused with slow worms but grass snakes are much larger.

Slide 34: Common Lizard

UK's most common and widespread reptile.
Long bodies measuring 10-16cm and short legs.
Usually brownish grey and skin has coarse scales.
Like to bask in the sun. But are good swimmers, so can dive underwater if threatened.
Can detach the back end of their tails if caught by a predator, so they can escape!

SUGGESTED ACTIVITY

Art and Design - challenge the children to design and make a model of their chosen fish, amphibian or reptile. Or maybe they could invent their own, with special features that enable their creature to survive in a particular habitat.

LESSON: 5. IDENTIFYING BIRDS AND MAMMALS

SUGGESTED STARTER ACTIVITY

Ask the children to create a **wildlife code of conduct** for when they are looking around their school grounds, gardens or the countryside. They should think about how they need to behave to protect the animals around them and create some ground rules that they all agree to follow. It should also include how the children should protect themselves.

Things to think about - noise made, movements made, disturbing habitats, litter dropped, not touching animal droppings, washing hands etc.

TEACHER INPUT

Birds

Slide 35: **Robin**

Bright red breasted Robin is a familiar sight throughout the year and has become a symbol of Christmas.

Well known for their tameness and can even be encouraged to eat from your hand.

<http://ypte.org.uk/factsheets/robin/overview>

Slide 36: **Blackbird**

One of the most common UK birds.

Males are black but confusingly the females are brown and often have spots or streaks on their breasts.

Their bright orange-yellow beak and eye ring make adult male blackbirds very distinctive.

Slide 37: **Chaffinch**

Their patterned plumage helps them blend in when feeding on the ground.

You may often hear them singing in your garden with their loud song and varied calls.

Slide 38: **Blue Tit**

Small and colourful birds - their blue, yellow, white and green colouring makes them easy to identify.

<http://ypte.org.uk/factsheets/blue-tit/overview>

Slide 39: **Song Thrush**

They sing for much of the year - a loud clear song with repetition of short phrases.

Like to eat snails - they break into them by smashing them against a stone with a flick of the head.

Slide 40: Sparrow

Noisy, cheeky and will eat just about anything!

They're very sociable birds, often nesting in colonies and rarely far from people.

Slide 41: Tawny Owl

Our largest common owl, found in woodlands, parks and gardens.

Makes the familiar "too-wit-too-woo" call during the night - it is actually the male and female calling to each other. The female makes the "too-wit" sound and the male answers with "too-woo"!

They feed on small animals such as voles and mice, which they look out for from their favourite perch.

<http://ypte.org.uk/factsheets/owl-tawny/overview>

Mammals

Slide 42: Hedgehog

An adult hedgehog has around 3,000-5,000 spines.

As their name suggests, they spend the day sleeping in hedgerows or under shrubs.

Noisy animals, snuffling loudly as they shuffle through undergrowth.

Poor eyesight but excellent sense of smell, touch and hearing.

When threatened with danger, a hedgehog will raise its spines and roll up into a tight ball. This will deter most animals from attacking them.

Hibernate November to March.

<http://ypte.org.uk/factsheets/hedgehog/overview>

Slide 43: Rabbit

Wild rabbits have fine grey/brown fur and a white belly. They have long hind feet and a fluffy tail, which is black on top and white below.

Their long sensitive ears can be turned in any direction and they have large eyes set on the sides of their heads, which allow them almost 360 degree vision. This gives them lots of information about their surroundings and alerts them to any danger.

Sociable animals, live in burrow systems known as **warrens**.

<http://ypte.org.uk/factsheets/rabbit/overview>

Slide 44: Grey Squirrel

A very familiar animal in the UK.

Usually have a grey coat with white undersides, though their coat can be quite brown.

Up to 30cm long, with a bushy tail almost as long as its body.

Squirrels collect nuts and seeds in the autumn and bury them in scattered hiding places around a wood. Their excellent memory and sense of smell helps them find their food weeks or even months later.

<http://ypte.org.uk/factsheets/squirrel-grey/overview>

Slide 45: **Badger**

Largely active at night (nocturnal) and normally shy creatures.

Live in family groups. Home is called a **sett** - an underground web of tunnels.

Sense of smell is most important of their senses - they look for food with their snouts constantly sniffing the ground ahead of them!

<http://ypte.org.uk/factsheets/badgers/overview>

Slide 46: **Fox**

Member of the dog family, a little bit bigger than a cat in size.

Can live in town or countryside and life span is around 14 years.

Female foxes are called **vixens**, males are called **dogs**, and baby fox is a **cub**.

Their home is called a **den**.

Foxes are mostly active at night and can run at speeds of up to 30mph.

<http://ypte.org.uk/factsheets/fox-red/overview>

Slide 47: **Wood Mouse**

One of the most common small mammals. There is about 1 for every 2 people in the UK.

They have many **predators (animals that hunt and eat them)** - foxes, cats, owls, and birds of prey.

To avoid being caught they can make huge leaps, have good night vision and even shed the end of their tail if caught.

<http://ypte.org.uk/factsheets/mouse-wood/overview>

Slide 48: **Brown Rat**

Much larger than any mice.

Often found on human sites, especially farms, industrial sites, rubbish tips, allotments and sewers - places where they can find plenty of food.

Slide 49: **Vole**

Mouse-like but with a blunter nose, shorter and less prominent ears and yellowy brown fur.

Live for about 1 year.

<http://ypte.org.uk/factsheets/vole-field/overview>

Slide 50: **Common Shrew**

Lives almost anywhere but most commonly found in hedgerows, scrubland, grasslands and woodland.

Must eat every 2-3 hours to survive.

Cleverly, their size actually shrinks in winter, so they require less effort to move and so need less food.

<http://ypte.org.uk/factsheets/shrew-common/overview>

SUGGESTED ACTIVITIES

1. Can you be a wildlife detective?

Ask children to go out into their garden at home or the school grounds and see what they can find, using some of their senses:

Hearing - close their eyes, be quiet and just listen

Seeing - Look closely e.g. paw prints, droppings, animal homes

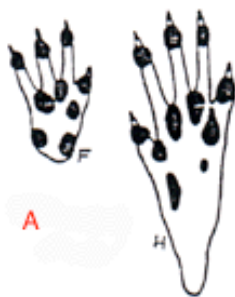
Smell - Some animals such as foxes leave scent markings that can be smelt long after they've gone.

2. Please see **worksheet** on following page - can the children match the animal to its footprint?

ANIMAL FOOTPRINTS

Can you match these animals to their footprint?

Fox, dog, domestic cat, squirrel, rabbit, brown rat, mouse, hedgehog



A



B



C



D



E



F



G



H

(F = front footprint, H = hind footprint)

LESSON 6: IDENTIFYING MINIBEASTS

SUGGESTED STARTER ACTIVITY

Question and answer session - what is a minibeast?

Minibeast: any small invertebrate. An invertebrate is an animal without a backbone.
Insects, arachnids, worms, slugs and snails are all invertebrates.

Create a mind map of the minibeasts the children can think of.

TEACHER INPUT

For further information, please see:

<http://ypte.org.uk/factsheets/minibeasts/what-is-a-minibeast>

<http://ypte.org.uk/downloads/minibeasts>

Slide 51: **Honey Bee**

We rely on bees for one third of all our food. Without bees **pollinating** we would not have beans, peas, strawberries, raspberries and wild flowers.

The black and yellow colouring is a warning to other animals that it is dangerous and not nice to eat.

The honey bee is a social animal and lives in a nest or **hive**.

These buzzing bees are most famous for their honey - they produce it as food stores for the hive during winter. But luckily they produce 2-3 times more than they need, so we can enjoy it too!

Fly at a speed of up to 25km/hr and beat their wings 200 times per second.

In contrast, a bumble bee is fatter and furrier and only makes small amounts of a honey like substance to eat themselves.

<http://ypte.org.uk/downloads/yippittee-issue-4-buzzing-bees>

Slide 52: **Slug**

Slugs are soft bodied molluscs (snails) that make holes in leaves, stems and flowers, so can be a nuisance for gardeners!

Most feed at night and leave slime trails.

A slug's blood is green!

Slide 53: **Snail**

Often seen after rain and leave a tell-tale trail of mucus after them.

Some only live for 5 years, but others are believed to be up to 25 years old!

One of the slowest creatures on Earth.

Slide 54: Woodlouse

Woodlice are terrestrial crustaceans (animals with a hard covering like crabs). They need damp, dark places to hide during the day. Usually found in compost heaps, grassland, woodland and gardens. Often hiding underneath stones, logs and pots.

Slide 55: Beetle

In the UK there are over 4,000 beetle species.

The stag beetle is Britain's largest insect. The male is easily recognised by their enormous jaws, resembling antlers on a stag's head.

<http://ypte.org.uk/factsheets/beetle-stag/overview>

Slide 56: Ant

Black garden ants are the most commonly seen ants in Britain.

Live together in large colonies that can consist of millions of ants.

Usually measure 3-9mm, have 3 pairs of legs and bodies divided into 3 sections.

Slide 57: Worm

Long creeping animal with a soft, often segmented body.

They don't have legs, but are covered in hairs or bristles that help them to move.

Breathe through their skin.

Can live up to 10 years.

Slide 58: Ladybird

There are 46 species living in Britain.

Most common is the 7 spot ladybird - bright red with 7 spots.

The number of spots does not relate to their age!

The bright colours warn enemies that they are not at all tasty to eat.

Slide 59: Spider

Spiders have 8 legs and different body parts to insects.

Garden spiders feed on flying insects e.g. butterflies, wasps and flies.

Most use a web to catch their prey. It takes a spider about 1 hour to build a web and they usually build a new one every day.

Even though spiders have 8 eyes, most of them can't see very well so they rely on what they feel to know when they've caught prey in their web.

Slide 60: Common Centipede

Brownish-red in colour, long antennae at front and a pair of long legs at the back.

Can crawl forwards and backwards.

Long and thin, they normally grow to around 3cm long.

Their bodies are quite flat which means they can hide underneath logs and stones; this helps keep their bodies cool and moist and also hides them from birds and toads that would enjoy eating them for their lunch!

SUGGESTED ACTIVITIES

Minibeast hunt: Ask the children to walk around the school grounds looking very carefully for minibeasts. They should be reminded to look in **micro-habitats** and to stick to the rules they made in their **code of conduct**.

Children could work in pairs, with each pair very carefully collecting a different minibeast. These can be taken back to the classroom where the children can identify what they have found, draw it, count number of legs etc. and describe the habitat they found it in.

PLEASE ENSURE THAT THE CHILDREN HANDLE THE MINI-BEASTS WITH CARE AND RETURN THEM TO EXACTLY WHERE THEY WERE FOUND.

We value your feedback!

Let us know what you thought of this lesson plan by completing this Google Form <https://forms.gle/cGAwi9AWXfSZgrYa9>. Thank you!