Ham Street Woods National Nature Reserve

Environmental Education Pack worksheets

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NATURAL ENGLAND

Introduction

This booklet of worksheet ideas forms part of a National Curriculum linked education pack aimed at Key Stage 2 pupils. Some of the activities are adaptable for younger or older age groups, if required.

The worksheets support a combination of activities that are either suitable for Ham Street National Nature Reserve or the school classroom.

Please note it is not necessary to print one copy of this booklet per child, as a number of the worksheets are designed for shared usage. Worksheets can be printed as individual pages by selecting the page number under the software printing options.

It is expected that teachers/group leaders will make full use of the booklet, printing as many copies as are required to complete the activities described. However, copyright of the text and images within the booklet and education pack remain the property of Natural England, and should not be uploaded to the internet or reproduced for purposes other than those for which it is intended, without prior permission.

A teacher or group leader should visit the reserve and complete a suitable and sufficient risk assessment of all the tasks/activities that will be carried out on the reserve and communicate the findings to those involved.

Learning about woodlands

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Landscape and map-making

Linear map to record journey stick route

Draw your map here

Make sure you include the following on your map:

- title
- key
- Where you found the items on your journey stick
- north line/compass rose
- direction of travel

Habitats

Habitat study

Habitat descriptions

Choice of habitat (eg oak woodland):

....

Circle the words which best describe the habitat:

a)	dark	shaded	light
b)	wet	damp	dry
c)	open	semi-sheltered	fully sheltered

Now use your imagination to create some WOW sentences about the habitat.

....

....

....

Out of the darkness into the light

- Light – can the change in light be detected through closed eyes?
- Temperature – can a change in temperature be felt?
- Sound – can different sounds be heard?

Next, with eyes open, observe in detail the different plants and animals seen in the shade, partial shade and open areas.

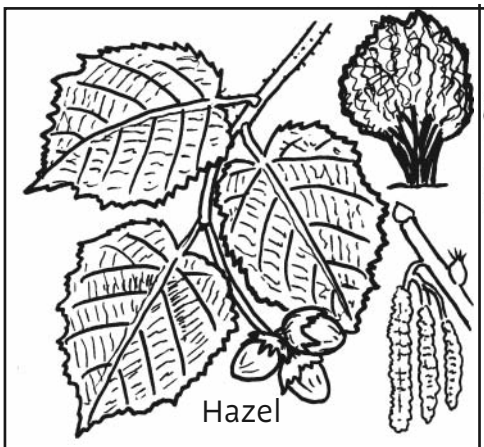
More or less activity recording

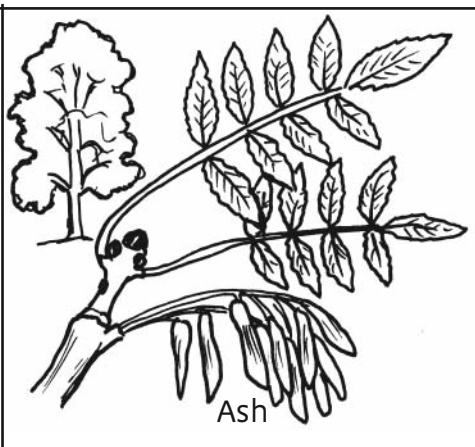
- Lay the quadrat or hoop down at regular intervals along the line of string or measuring tape.
- Count the number of different plants found within the quadrat or hoop.

Location of hoop/quadrat	Plant name or description	Frequency

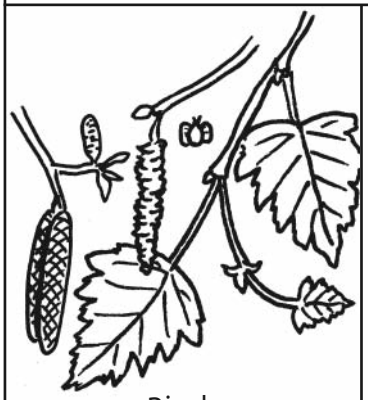
Habitats

Tree and shrub Identification sheet


Hazel


Ash

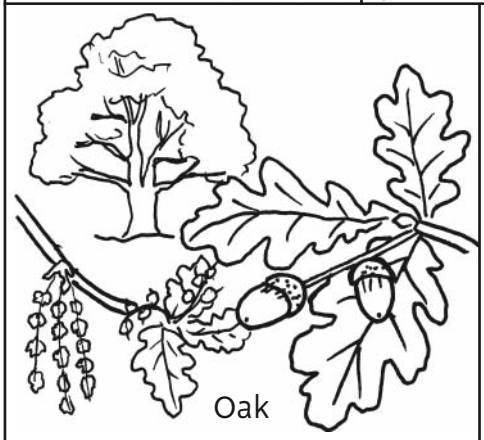

Hawthorn

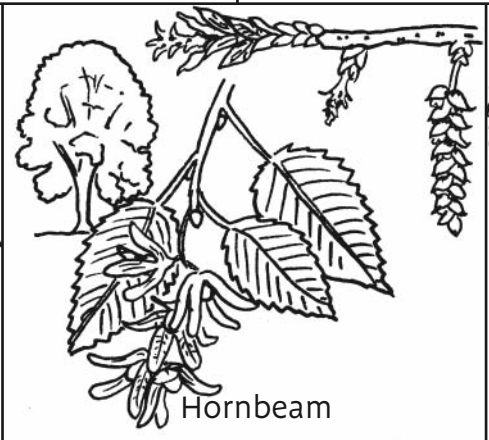

Birch

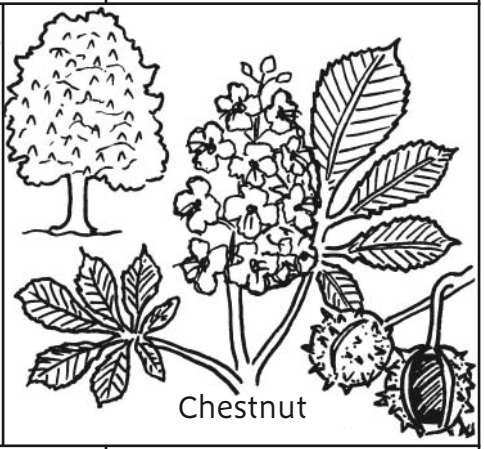

Aspen


Alder


Wild Service


Oak


Hornbeam


Chestnut


Sweet chestnut


Bramble


Dog rose


Sycamore

Habitats

Hazel dormouse

Description

This small rodent looks different from common mice because it has a long, fluffy tail. One of the smaller members of the dormouse family, the hazel dormouse has bright golden fur on its back and a pale underside.
The dormouse has large eyes because it usually only feeds at night.

Habitat

The dormouse lives in thick, deciduous woodland, coppice and thick shrubs. Hazel coppice is the preferred habitat.

Biology

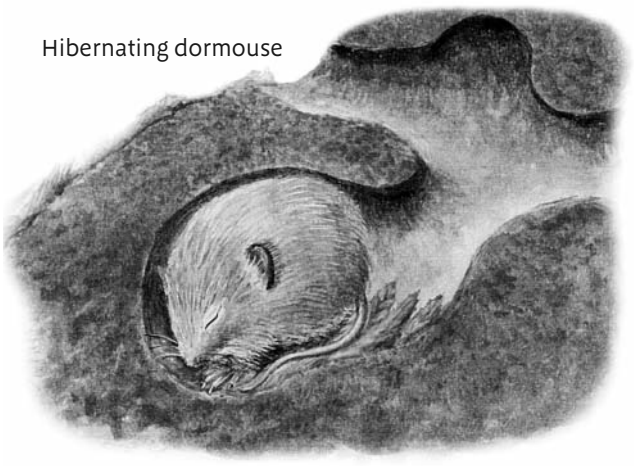
Dormice sleep a lot of the time. Their popular English name is thought to come from the French word 'dormir' which means 'to sleep'. Dormice sometimes hibernate for as much as seven months of the year.

Dormice eat many different types of food. They eat flowers and pollen during the spring, insects in the summer and fruits, berries and nuts, particularly hazelnuts, in the autumn. Large quantities of hazelnuts and blackberries are eaten in order to store up fat to keep them alive during the winter. This variety of food must be available within a small area because dormice do not like to cross open ground.

Dormice build round nests made of shredded honeysuckle bark or clematis, in which to sleep during the daytime, usually situated in a bush or bramble patch.

As well as their grass-woven nests, dormice sometimes use holes in tree cavities and dormouse boxes for nesting. They breed in the summer, producing on average four young at a time and they can raise two litters a year. The young dormice stay with their mother until they are about ten weeks old.

Hibernating dormouse



When the cold weather begins in October, the dormice build their nest under the ground or on the woodland floor under a pile of leaves. They then curl up and go to sleep until April. This is called hibernation. During hibernation, dormice slow down their bodily functions and go into a really deep sleep. While they are like this they even feel cold to touch.

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Habitats

Hazel dormouse worksheet

Draw a picture of a dormouse here

Using the information from the factsheet find the answers to the following questions:

1. Why is a dormouse called a dormouse ?

.....

.....

2. What do dormice eat?

.....

.....

3. Where do they make their nests?

.....

.....

4. How many babies do dormice have each year?

.....

.....

5. Write your own question about the dormouse here for your buddy to answer.

.....

.....

.....

.....

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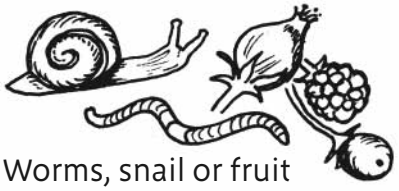
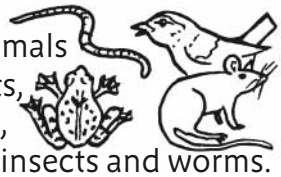
Adaptation and biodiversity

Bird beaks

Bird beak matching

Cut out each of the bird food sources and jumble them up.

Next try to rematch the bird and its food source with the correct beak, discussing with a partner why and how each beak is suited for its purpose.

What they eat	Bird	Bill/Beak
 Seeds (such as hornbeam), shoots and fruits	Hawfinch 	 Large, strong bill
 Insects under tree bark	Treecreeper 	 Small, curved and pointed
 Small birds	Sparrowhawk 	 Large, sharp and pointed
 Worms, snail or fruit	Thrush 	 Medium, generalised shape
 Insects	Nightingale 	 Small, pointed bill
 Birch and alder seeds	Lesser redpoll 	 Small, strong bill
 Small mammals and rodents, small birds, frogs, fish, insects and worms.	Tawny owl 	 Large, pointed strong bill

Adaptation and diversity

Diversity bingo

Diversity-bingo table Find 4 of the life-forms below and shout "diversity-bingo!"	
Tree	Flower
Fungi (such as mushroom, mould, toadstools)	Mammal (such as squirrel, dormouse, fox)
Bird	Minibeast

Diversity-bingo table Find 4 of the life-forms below and shout "diversity-bingo!"	
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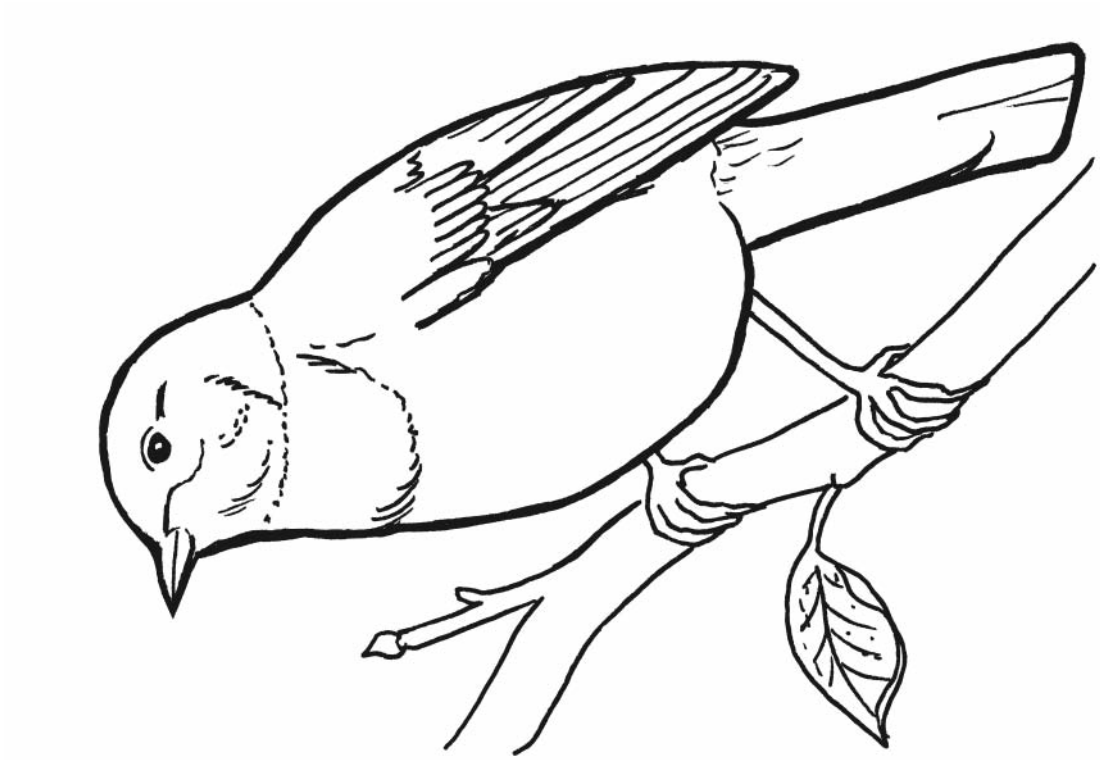
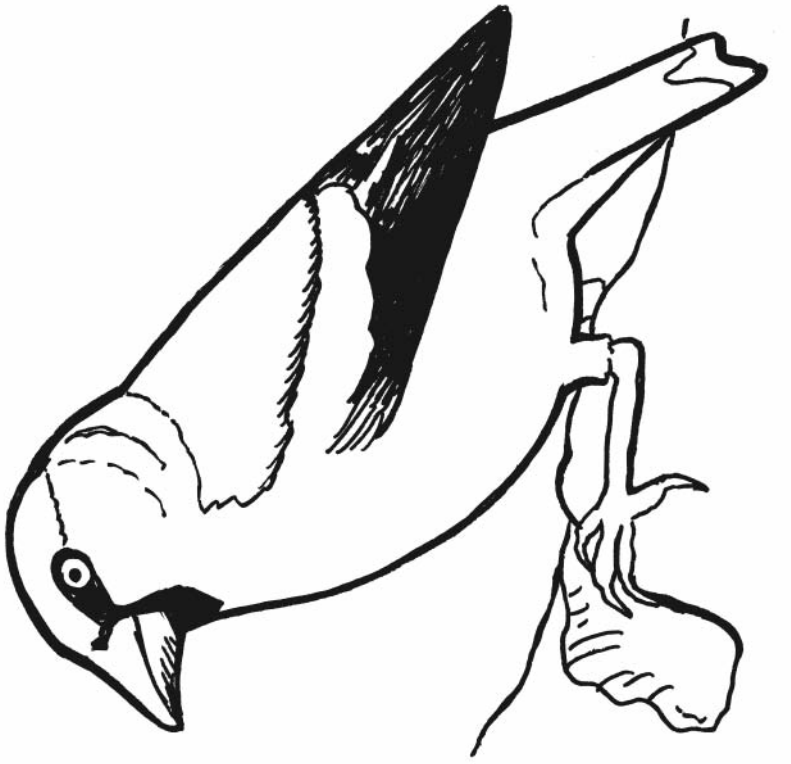
Adaptation and diversity

Bird identification sheet 1



Nightingale

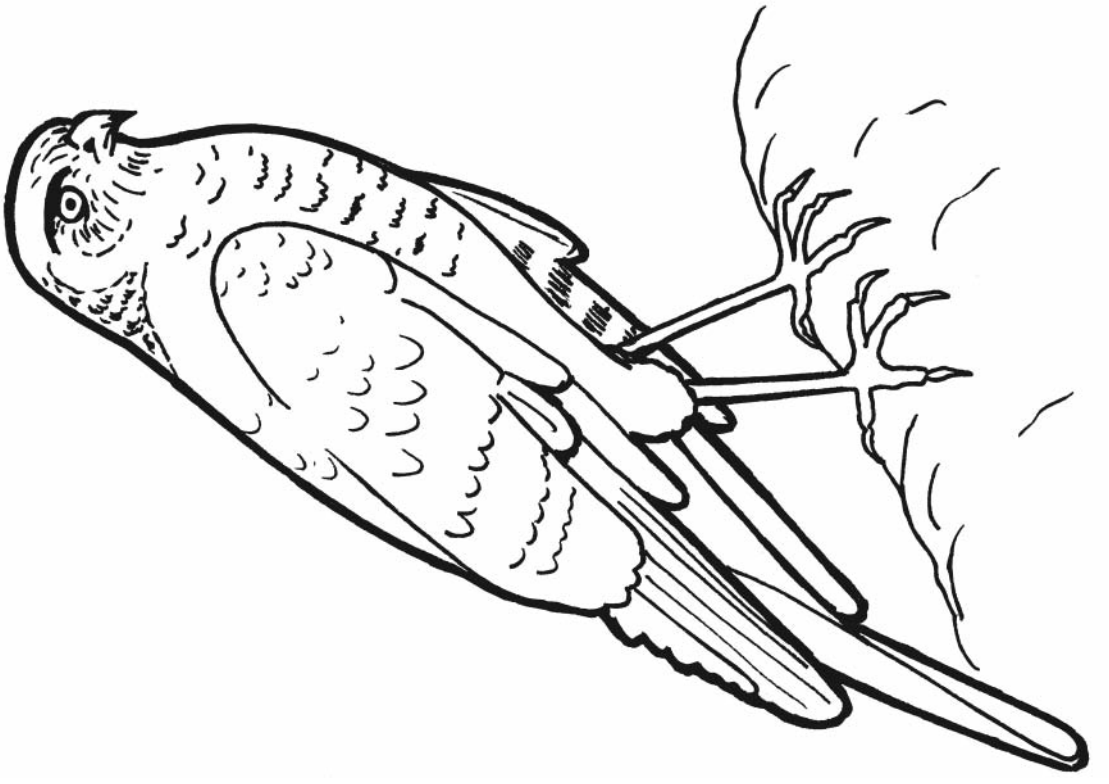


Hawfinch

Adaptation and diversity

Bird identification sheet 2

Redpoll

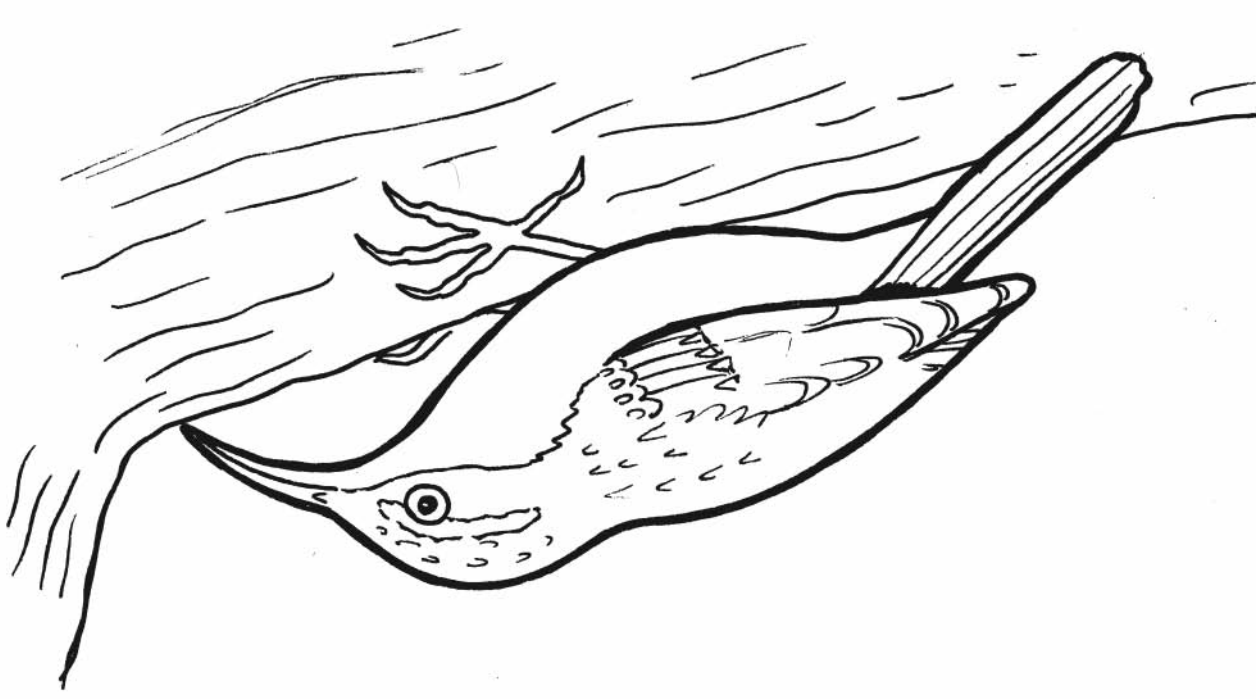


Sparrowhawk

Adaptation and diversity

Bird identification sheet 3

Green woodpecker



Treecreeper

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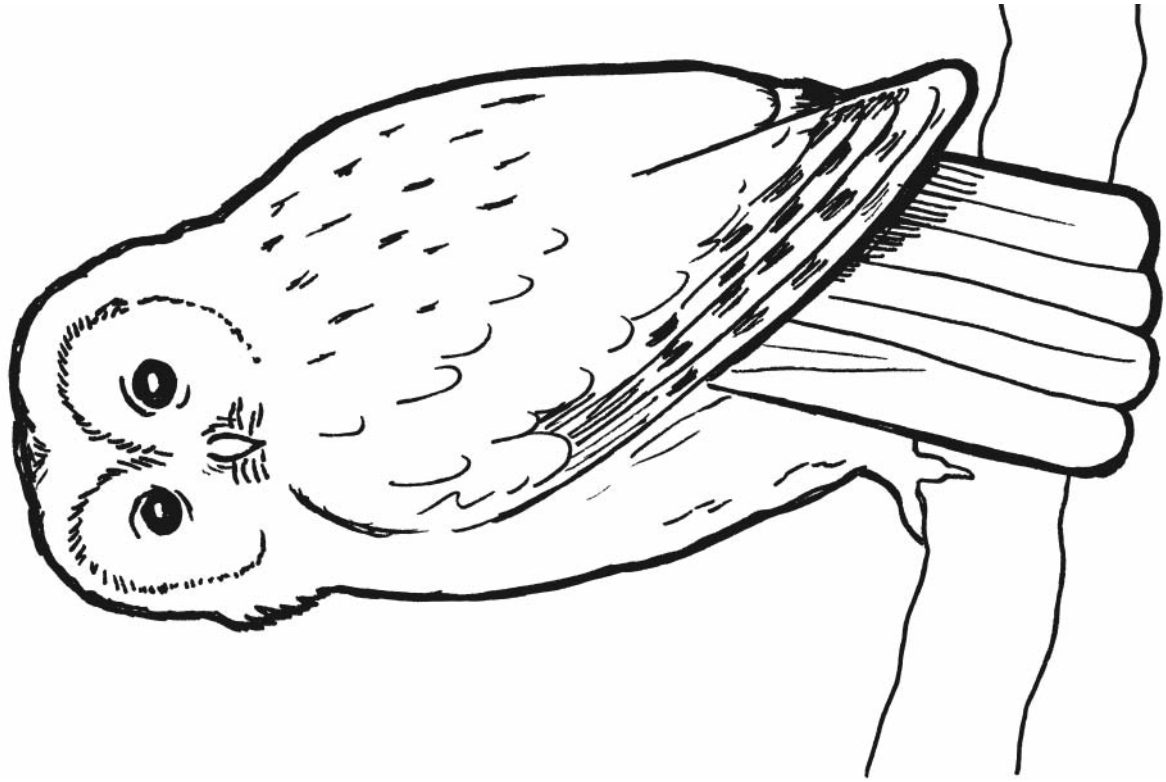
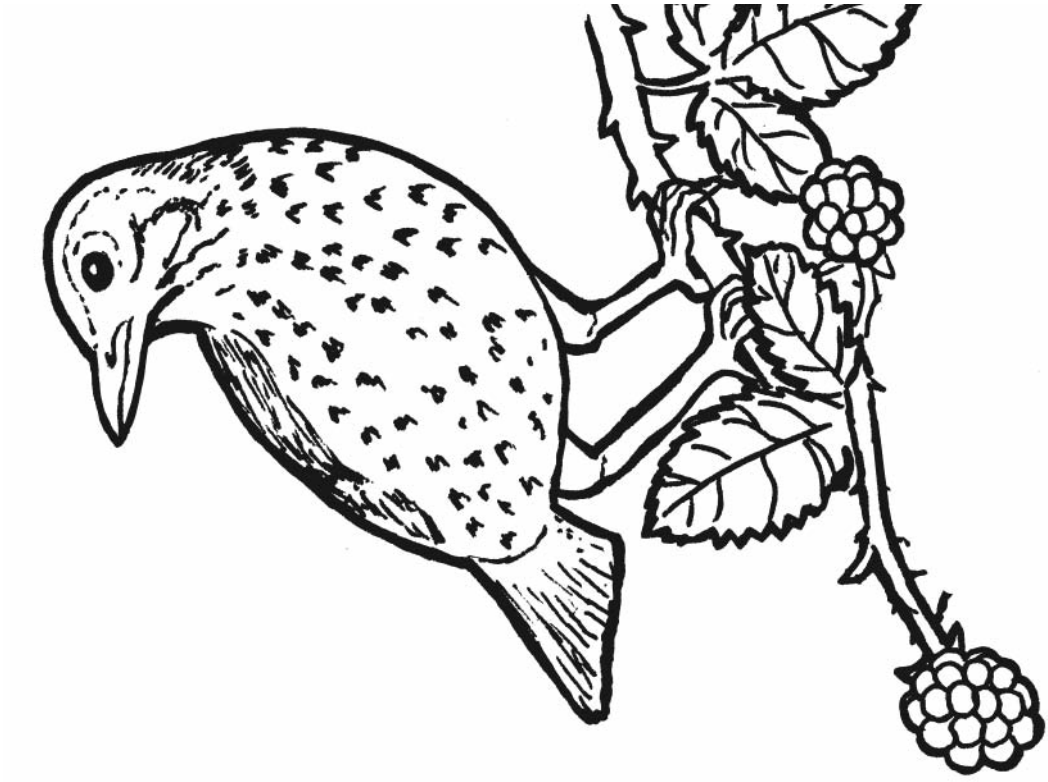
Adaptation and diversity

Bird identification sheet 4



Tawny owl



Thrush

Adaptation and diversity

Plant adaptation

Plant adaptation observation worksheet:

Plant adaptation	Sketch
Parts of the plants that defend them against hungry animals, (such as prickly holly leaves, thorny brambles or stinging nettles).	
Plants that can climb to reach the light, such as honeysuckle and clematis.	
Flowers which are brightly coloured or smell sweet to attract their insect pollinators.	
If you are visiting in the springtime, look for flowers on the forest floor that come out to catch the sunlight early in the year, before leaves have fully grown in the tree canopy (which would make it too shady for them to grow, such as bluebell, primrose and wood anemones).	

Adaptation and diversity

Animal adaptation

Animal adaptation observation sheet

Animal adaptation	Sketch
Holes in the ground, as evidence of animals that have adapted to live underground for shelter and protection, such as badger and rabbit holes.	
Minibeasts that are camouflaged to hide from predators, such as a brown snail on the woodland floor, or a moth that looks like the plant on which its sit, in order to hide from hungry birds.	
A sparrow which is brown and well hidden amongst branches, to make it difficult for a sparrowhawk to spot it.	
A beetle, which has a hard outer case to protect its delicate wings when foraging and as protection against predators.	

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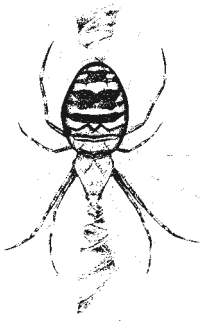
Minibeasts

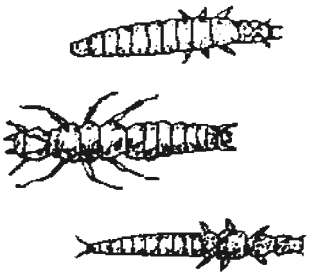
Minibeast ID chart

Earwig

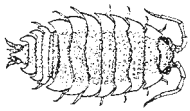
Millipede



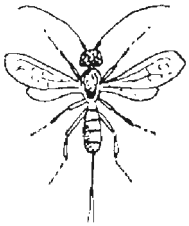
Spider



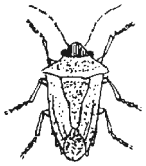
Various beetle larvae



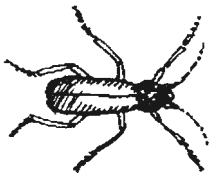
Woodlouse



Wasp



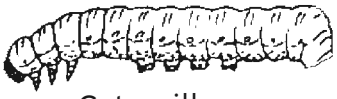
Shield bug



Beetle

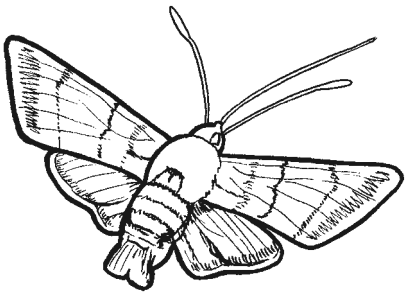
ant

Butterfly

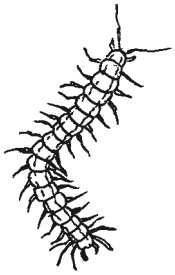


Caterpillar

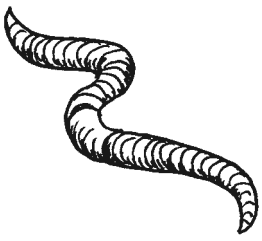
Butterfly or moth pupa



Moth



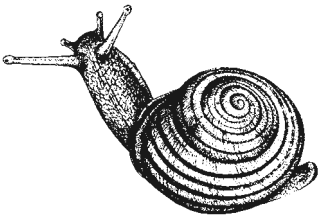
Centipede



Worm

Dragonfly

Bee



Snail

Slug

Weevil

Wireworm

Minibeasts

Minibeast record sheet

Minibeast hunt results

Habitat description	Minibeast name or description	Frequency

Minibeast passport information

In preparation for also making a minibeast passport back at school, record the following information:

Name/description of minibeast or what family does the minibeast belong to?

.....

What habitat was it found in?

.....

What colour is it?.....

How many legs does it have? .....

How does it move?.....

Does it have wings?.....

What is its body shape?.....

How many sections does its body have?.....

What is its coat like? Eg smooth.....

How does it defend itself?.....

What does it eat?.....

Does it appear singly or in a group?.....

Why does it live in this habitat?.....

.....

.....

Minibeasts

Minibeast passport identity card

PASSPORT

.....

MINIBEAST NAME:

HAM STREET WOODS
NATIONAL NATURE RESERVE

Picture of Minibeast's habitat

FOLD

FOLD

Detailed picture of head

Name: .....

Family: .....

Habitat: .....

Why is this habitat chosen:

.....

FOLD

Colour: .....

Coat: .....

Number of Legs: .....

Moves by: .....

Body shape: .....

Number of body sections: .....

Wings: Yes / No

This minibeast eats: .....

Found in a group: Yes/No

Defends itself by: .....

.....

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Plant and animal lifecycles

Seed dispersal

Seven seed dispersal methods

There are seven different methods used by plants to disperse their seeds. Some plant species employ more than one method to ensure that their seeds are spread far and wide.

Bursting

(eg peas, broom) – the seeds ripen inside a pod and when ripe the pod explodes scattering the seeds far and wide.

Wind

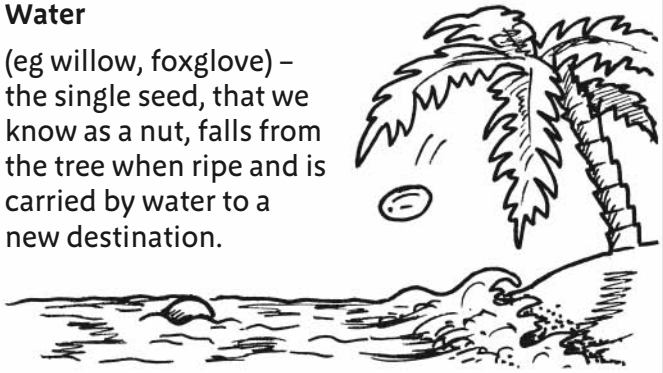
(eg dandelion, rosebay willowherb) – the seeds are found at the bottom of a light, wispy parachute which when caught by the wind can be carried long distances before settling and germinating.

Shaking

(eg poppy) – as the seed head dries out holes are created in it. Then, as the wind blows or animals brush past, the seeds that have ripened inside, escape and scatter.

Water

(eg willow, foxglove) – the single seed, that we know as a nut, falls from the tree when ripe and is carried by water to a new destination.



Hitchhiking

((eg burdock, stickyweed/cleavers) – the seed head (with its ripened seeds inside) has many tiny hooks on it, enabling it to attach itself to any passing animal, before being rubbed off at a later stage.

Drop and roll

((eg horse chestnut, beech) – when ripe a casing (that protects ripened seeds inside) falls to the floor, rolling away from the parent tree. It often splits on impact or decays, allowing the seeds to begin to germinate.

Animal food (a)

(eg blackberry, hawthorn, mistletoe) animals, such as birds or mammals, eat a fruit (or berry) and the seeds that have ripened inside pass through the digestive system unharmed to be deposited away from the parent plant in the animal's droppings.

Animal food (b)

(eg hazelnut, acorn) – the seed ripens inside a hard protective casing called a shell. Animals such as squirrels and birds gather the nuts and place them in stores for winter but often forget about them allowing some of the seeds to germinate.

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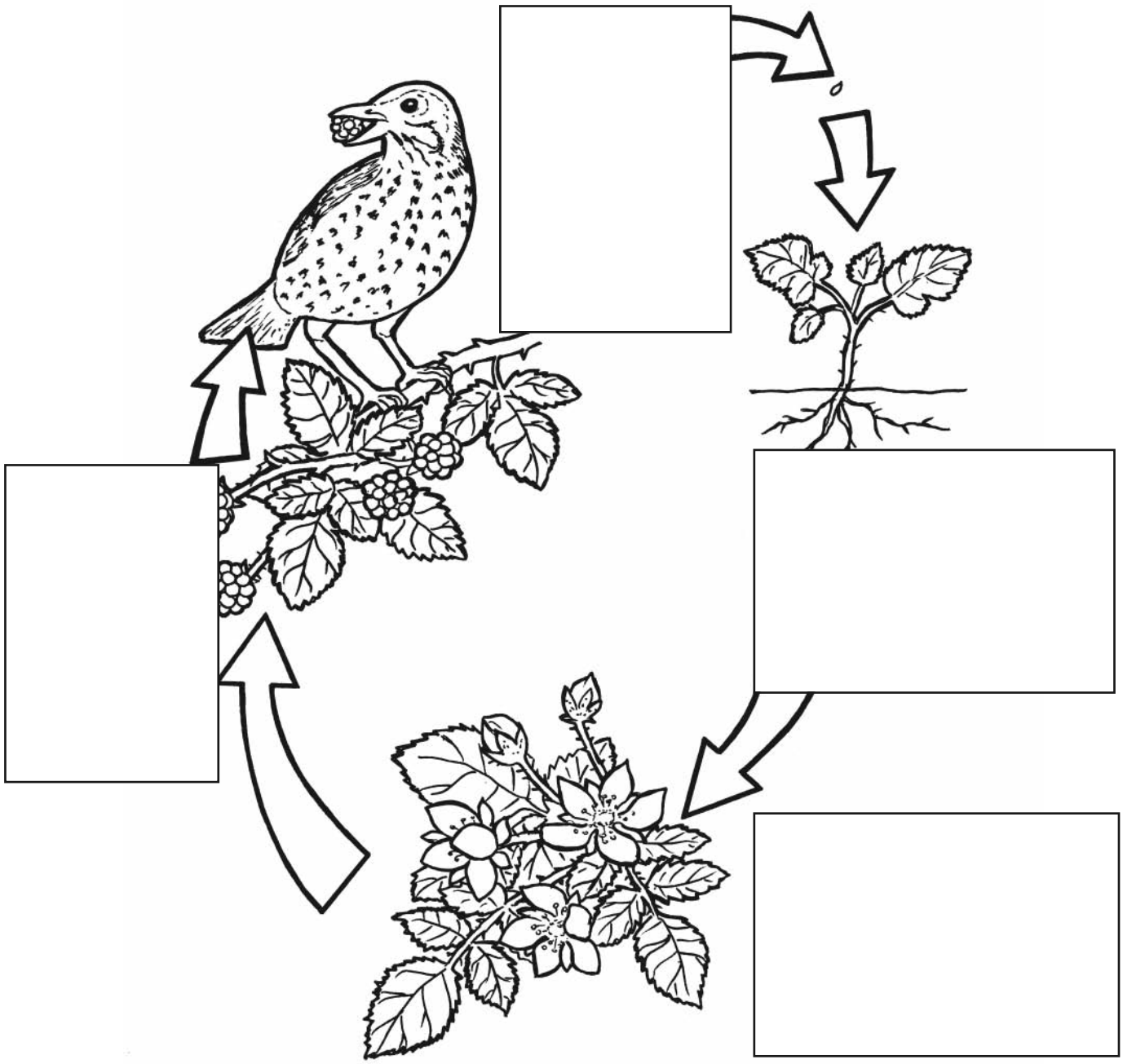
Plant and animal lifecycles

Bramble lifecycle



Choose the title that matches each stage in the lifecycle of the bramble, and write two facts about each stage in the box next to the correct drawing.

- **Flowers and pollination:** three years from seed the bramble plant produces white flowers. Nectar and pollen attract insects such as including bumblebees, honey bees, hoverflies, wasps, butterflies, moths, flies and lacewings. They help to pollinate the plants by passing pollen from one flower to another.
- **Dispersal:** seeds are dispersed by many different types of animals including birds (such as blackbirds, thrushes, chaffinches, starlings, robins and pheasants) as well as mammals (including foxes and mice).
- **Fruit:** by late summer and early autumn, the blackberry fruit is ripe and its seeds are fully developed
- **Germination:** the blackberry seed settles into the soil and usually in the second year after being dispersed, with a little warmth and water, it germinates into a bramble plant.

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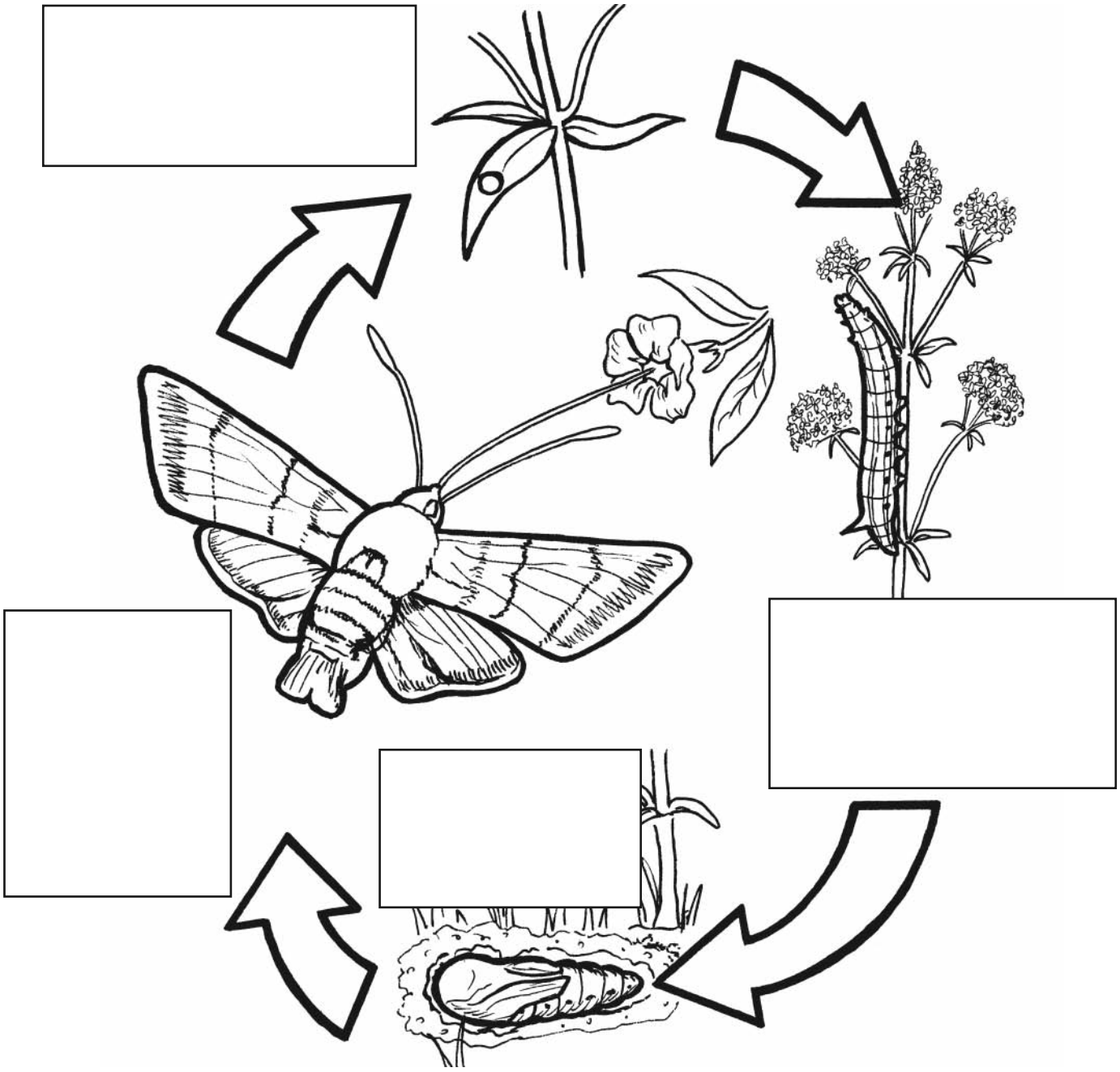
Plant and animal lifecycles

Hummingbird hawk moth lifecycle

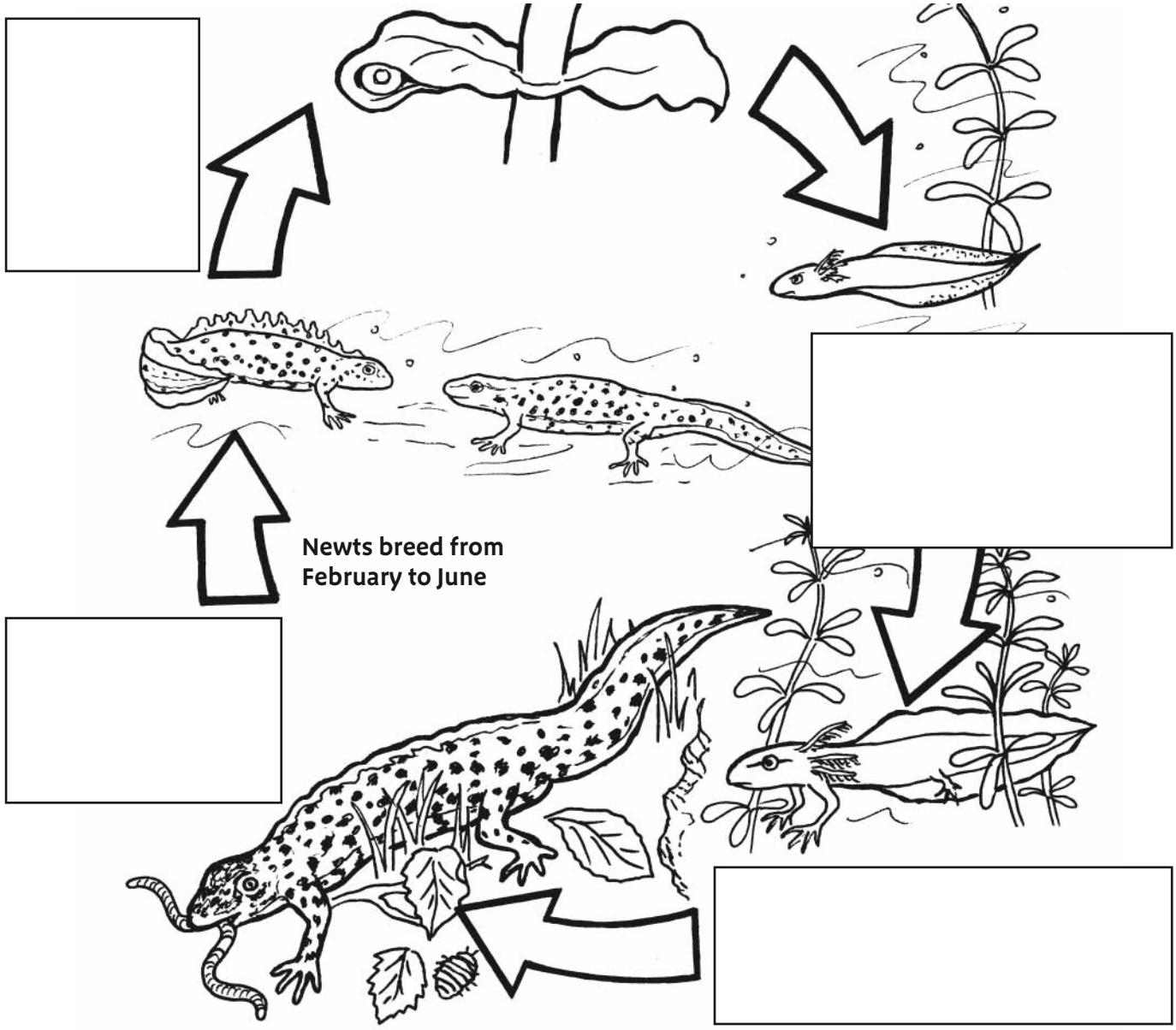


Choose the title that matches each stage of the lifecycle of the hummingbird hawk moth, and write two facts about each stage in the box next to the correct drawing.

- **Chrysalis**: the caterpillar turns into a chrysalis which can be found in a loose cocoon on the ground near lady's bedstraw.
- **Eggs laid by adult**: up to 200 eggs are laid by each adult female on lady's bedstraw. Each egg is laid on a different plant.
- **Adult emerges**: after metamorphosis is complete an adult hummingbird hawk moth emerges from the chrysalis. They feed by hovering in front of flowers.
- **Caterpillar:** the caterpillar feeds on lady's bedstraw in July and August. They hatch yellow, turn green after they shed their skin the second time, then turn brown once they are fully grown.

Plant and animal lifecycles

Great crested newt lifecycle



Choose the title that matches each stage of the lifecycle of the great crested newt, and write two facts about each stage in the box next to the correct drawing.

- **Maturing larva:** Gills remain almost until metamorphosis. Front legs develop before back legs. Some newts remain as larvae over the winter.
- **Eggs laid by adult**: a female newt lays up to 300 eggs. Each egg is individually folded into a leaf and sealed with a fluid she makes.
- **Mating:** newts return to ponds to mate. The male attracts the female with pheromones – special chemicals he sends to her by waving his tail. He leaves a sack of sperm on the pond floor and guides the female to take it into her body.
- **Larva:** larvae hatch from the eggs. They have three pairs of feathery gills to breathe under water. They eat small water animals such as water flea.
- **Juvenile newt:** after metamorphosis, young newts leave the water from August to October. Newt hibernate on land under logs, stones or under ground.

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These worksheets form part of a pack containing a series of National Curriculum linked activities suitable for Key Stage 2 pupils. Some activities are adaptable for younger or older age groups, if necessary.

The worksheets support activities suitable for use in the classroom and on Ham Street Woods National Nature Reserve.

A detailed map of the site is included within the pack to help you find your way around. The worksheets and information sheets in this booklet can be printed from the CD included with the pack, which also contains the main pack folder pages and a hazard identification sheet as pdf documents.

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