



Teacher and Pupil Resources



Topic Overview

Habitats: Adaptation and Interdependence

In this topic we will learn about:

Habitats

- ✓ Study two different habitats.
- ✓ Compare the plants and animals that live in the two habitats.
- ✓ Use different techniques and equipment to sample the habitats.
- ✓ Record data.

Identification

- ✓ Use a key to identify plants and animals.
- ✓ Create a key.

Adaptation

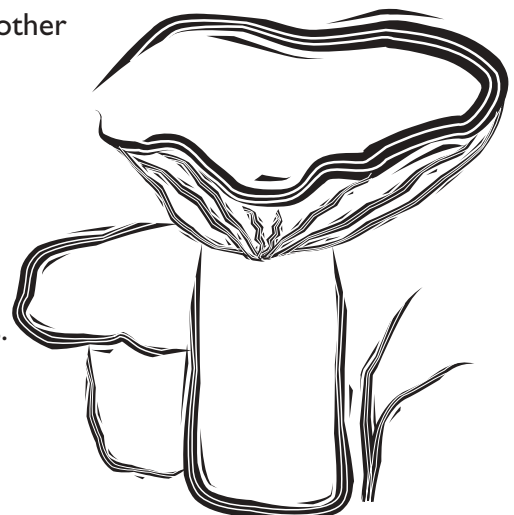
- ✓ Look at how plants and animals are suited to their habitat.
- ✓ Observe adaptations for breathing, moving, feeding and protection.
- ✓ Research using different sources of information.

Interdependence

- ✓ Discover how plants and animals depend on other plants and animals for their survival.

Food Chains

- ✓ Create food chains for habitats.
- ✓ Discover the role of producers and consumers.
- ✓ Make food webs.
- ✓ Learn the importance of green plants.

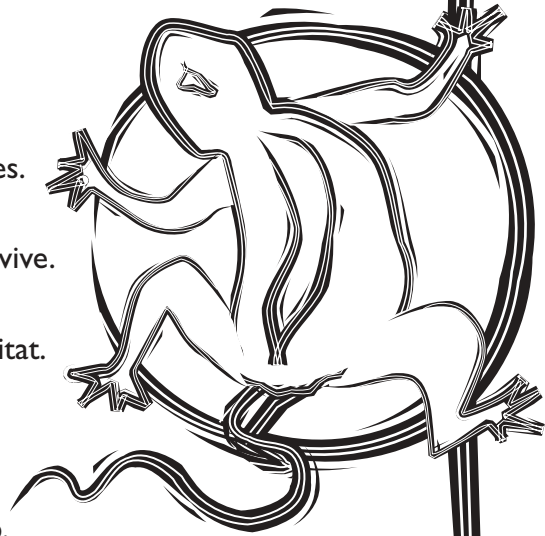


Checklist

Habitats: Adaptation and Interdependence

Put a tick next to these statements when you have learnt them.

- A habitat is a place where a plant or animal lives.
- There are different types of habitats.
- Different plants and animals live in different habitats.
- A key can be used to identify things.
- There are several different ways of catching invertebrates.
- Plants and animals are suited to the habitat they live in.
- Plants and animals have adaptations to help them to survive.
- All living things are interdependent.
- Food chains show the feeding relationships within a habitat.
- Nearly all food chains start with a green plant.
- Green plants are known as producers.
- Animals are known as consumers.
- Food chains can be joined together to make a food web.



Put a tick next to these statements when you can do them.

- I can use a key to identify plants and animals.
- I can create a key for identifying things.
- I can use different methods for collecting invertebrates.
- I can record data I collect.
- I can explain why different plants and animals live in different habitats.
- I can name plants and animals found in two different habitats.
- I can explain how a plant and an animal in two different habitats are adapted.
- I can describe how a plant is dependent on animals for its survival.
- I can describe how an animal is dependent on plants and other animals for its survival.
- I can write a food chain.
- I can write a food chain for two different habitats.
- I can describe how the plants and the animals in a food chain affect the other plants and animals in the same food chain.

Habitats Concept Map

The place where a plant
or animal lives

Animals are suited to
their habitat (adaptation)

- camouflage

A leaf
Under a stone
On a log } **micro-habitats**

Woodland
Grassland
Pond
Stream/River
Hedgerow } **habitats**

Things that affect
the habitat:

- light
- water
- temperature
- soil type

Habitats

Organism

plant }
fungus }
animal }
microbe }

Keys

Used to identify and
classify plants and animals

Food Chains

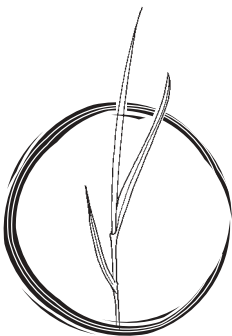
plants }
animals }
herbivores }
carnivores }
predators }
prey }

Different animals live in
different habitats:

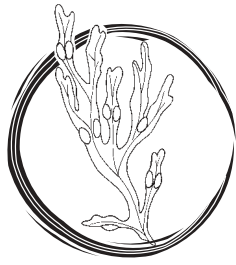
- swans on ponds or lakes
- water boatmen in ponds, lakes or rivers
- squirrels in woodlands
- rabbits on grasslands

Which Habitat?

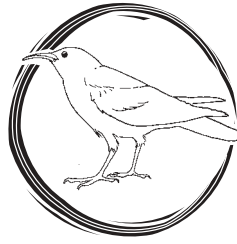
- ✓ Look carefully at the pictures below
- ✓ Decide whether they belong to a seashore or a garden habitat
- ✓ Cut each picture out and stick it under the correct heading in your book



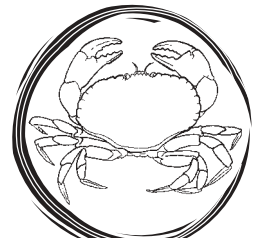
Grass



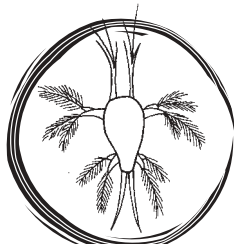
Bladder Wrack



Chough



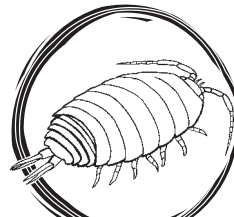
Crab



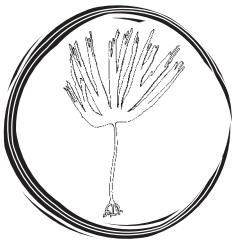
Shrimp Larva



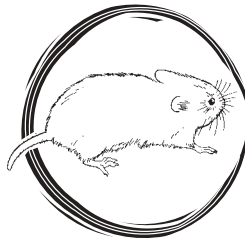
Blackbird



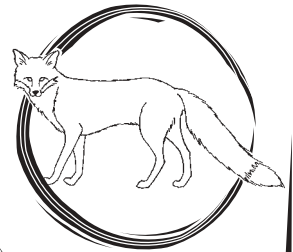
Woodlouse



Kelp



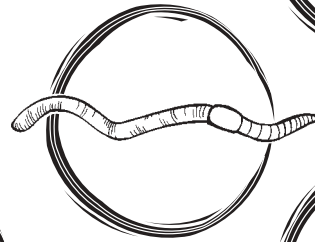
Vole



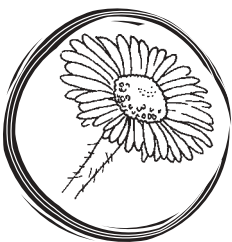
Fox



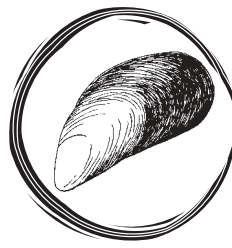
Seaweed



Earthworm



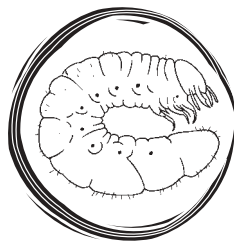
Daisy



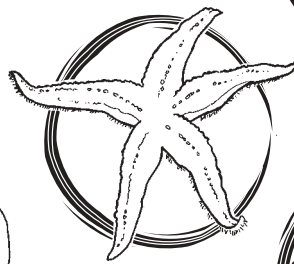
Mussel



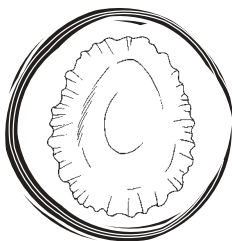
Dandelion



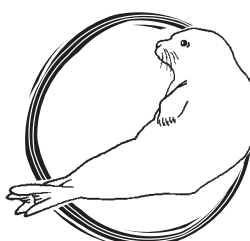
Beetle Larva



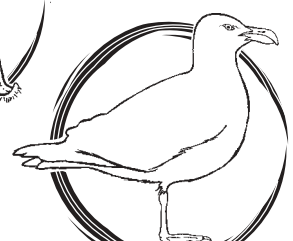
Starfish



Limpet



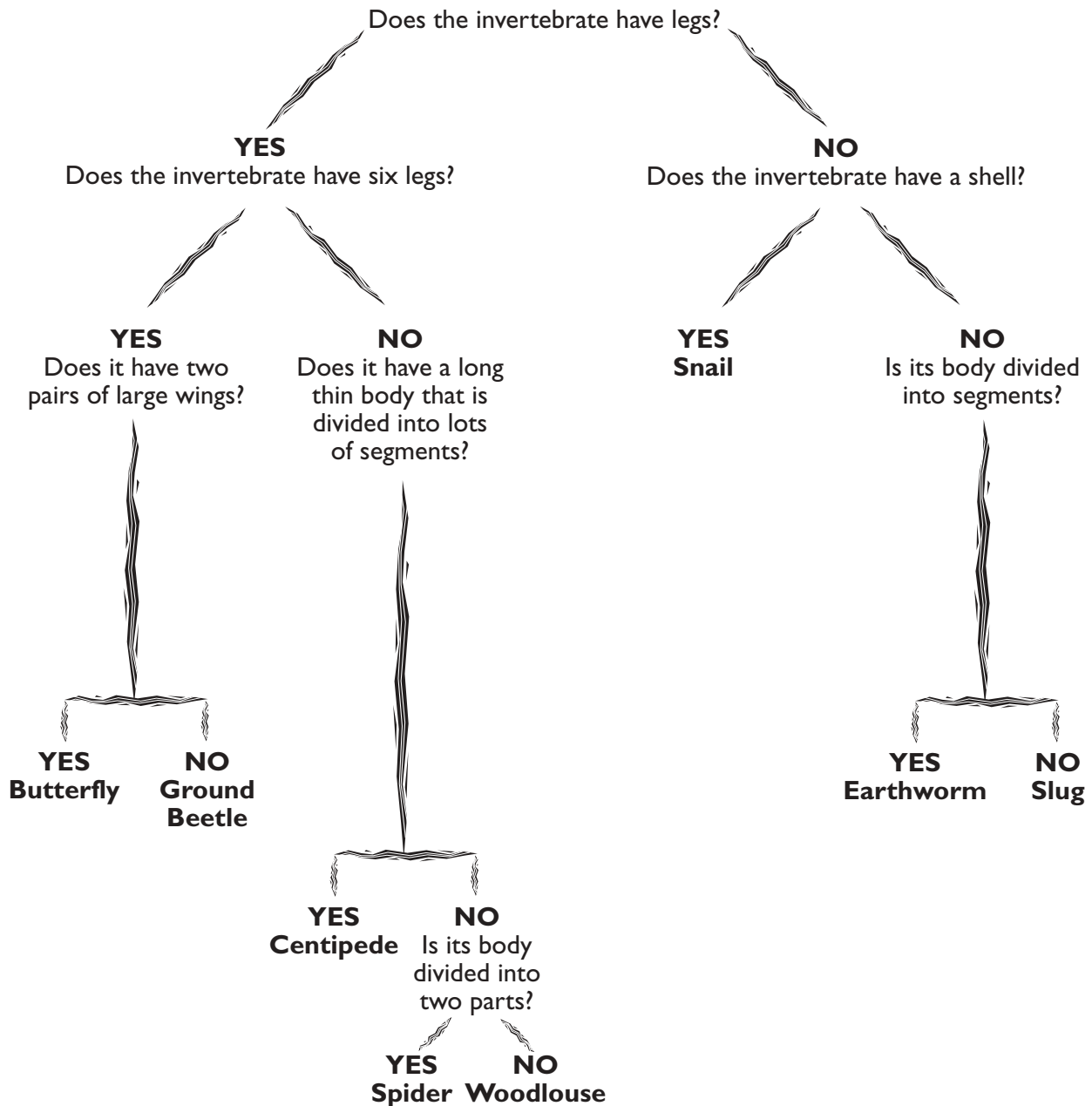
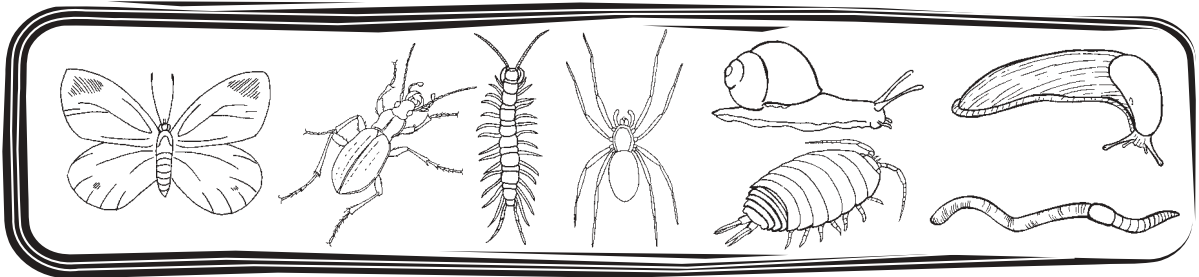
Seal



Seagull

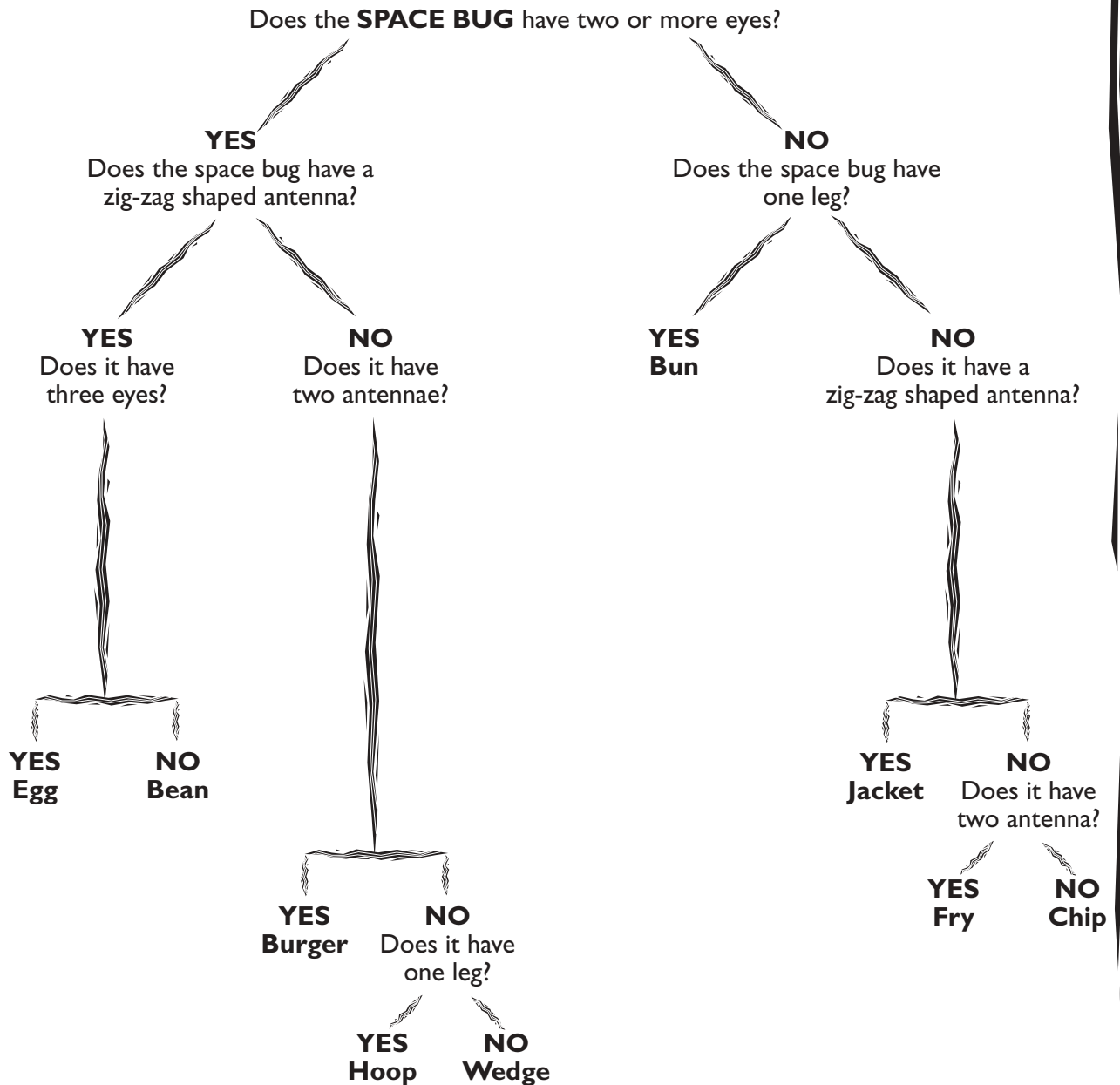
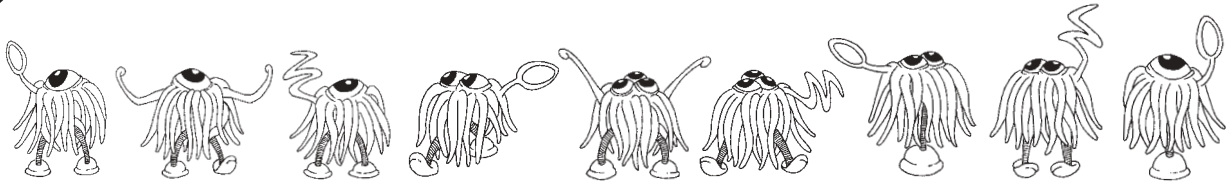
Invertebrate Identification Key

✓ Use the key below to find out the names of these eight creatures.



Space Bug Identification Key

✓ Use the key below to find out the names of these eight creatures.



Creating A Key

- Remember to look carefully at your objects when creating the key.
- Think of characteristics that separate the different objects.
- As you are writing the key, move the objects to the position on the key they belong in. This will stop you getting confused.

Think of a question that separates your objects in to two groups and write it in this first box.

yes

Now you have split the group in to two smaller groups, think of a question to separate the objects on both sides.

no

yes

no

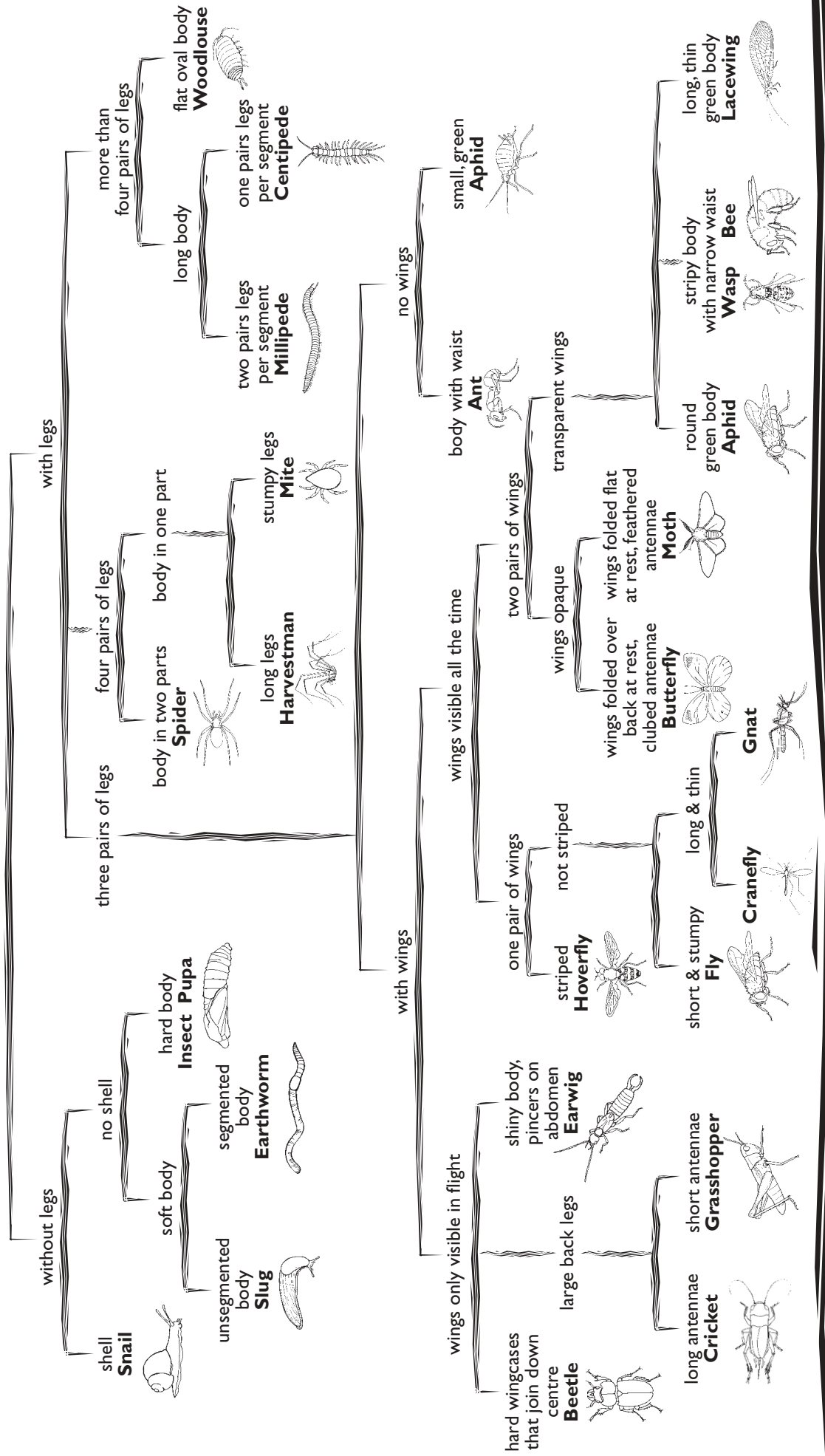
Finally, write the name of the object in the correct boxes below.

yes

no

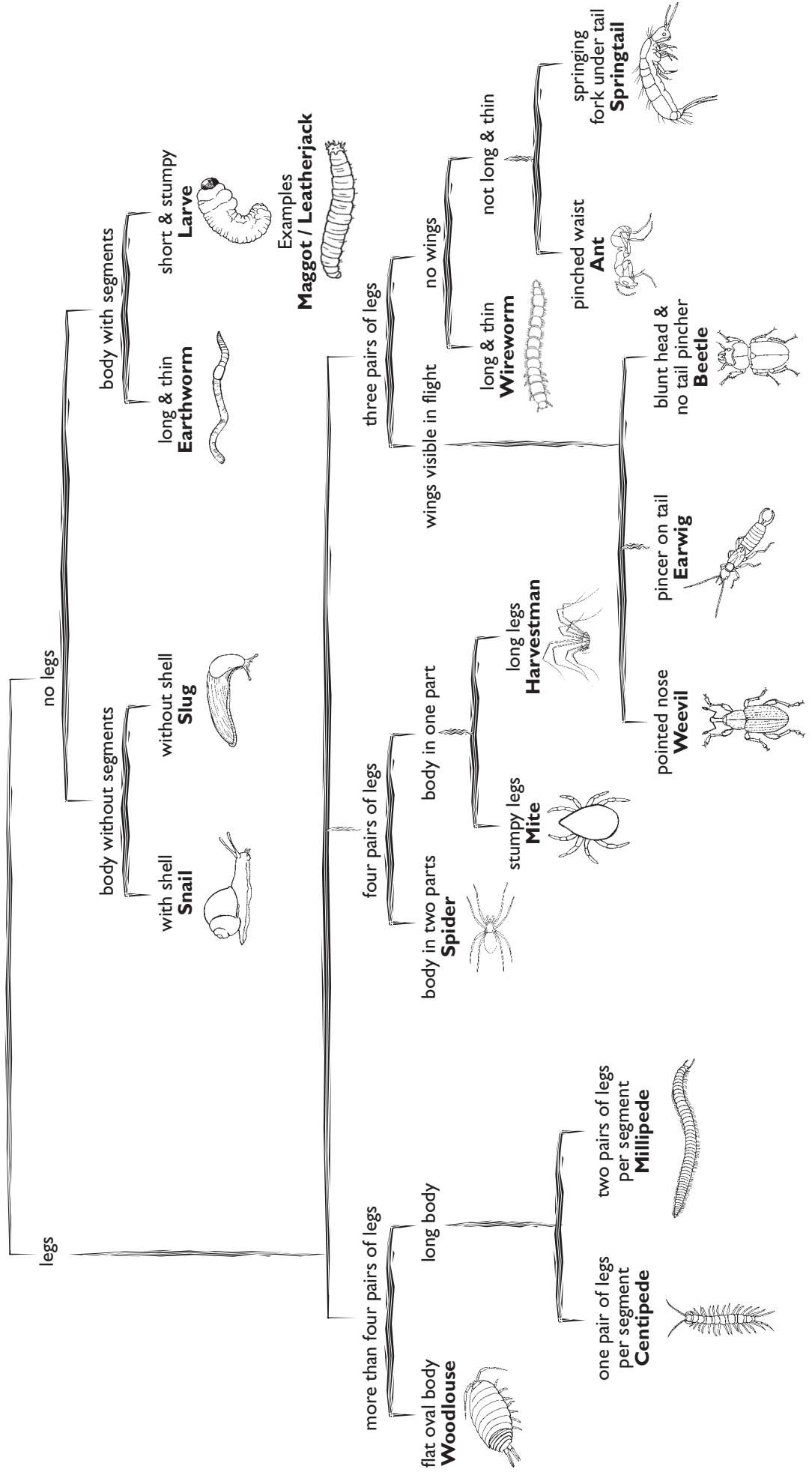
Key for Grassland Invertebrates

Invertebrate

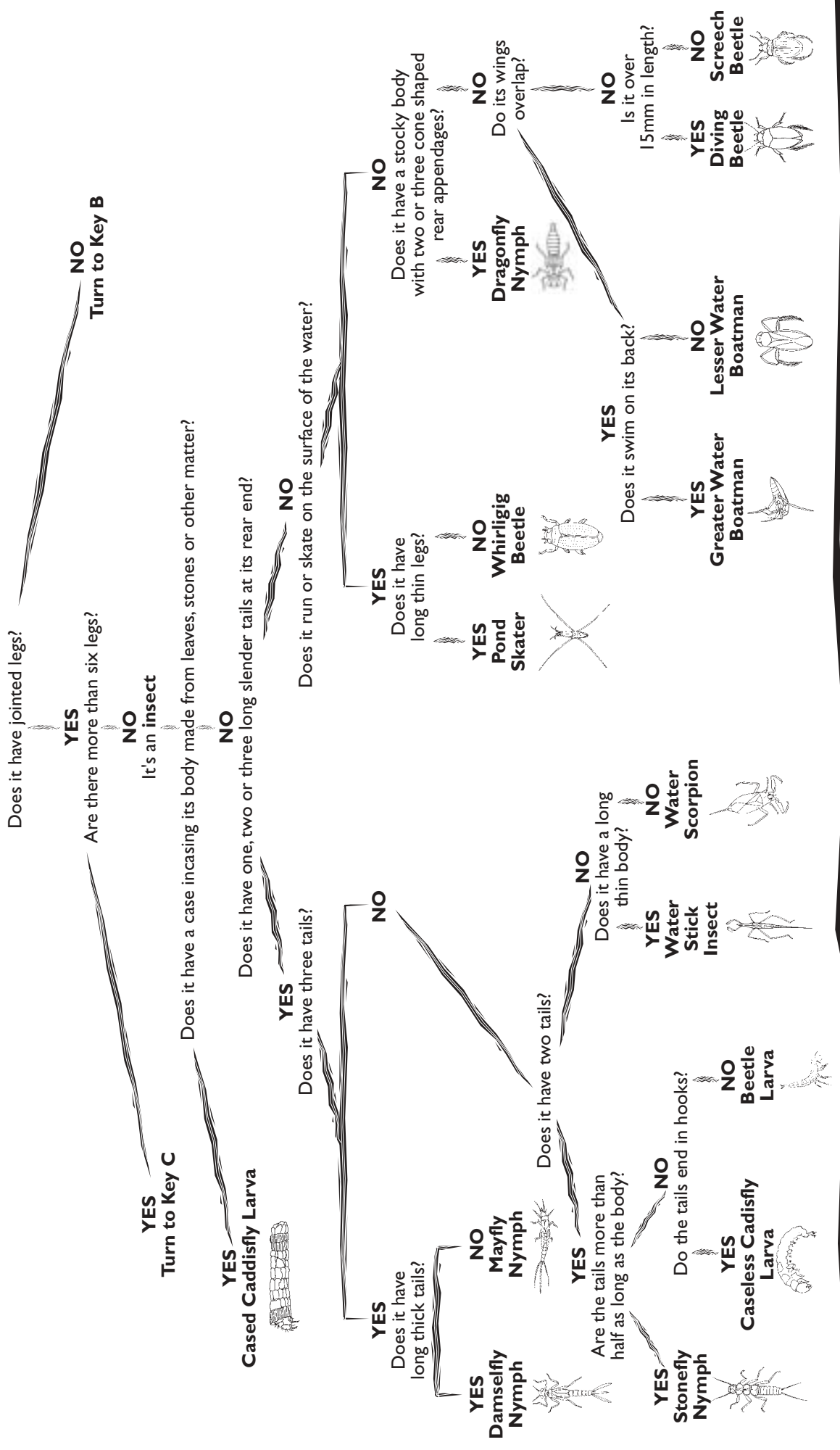


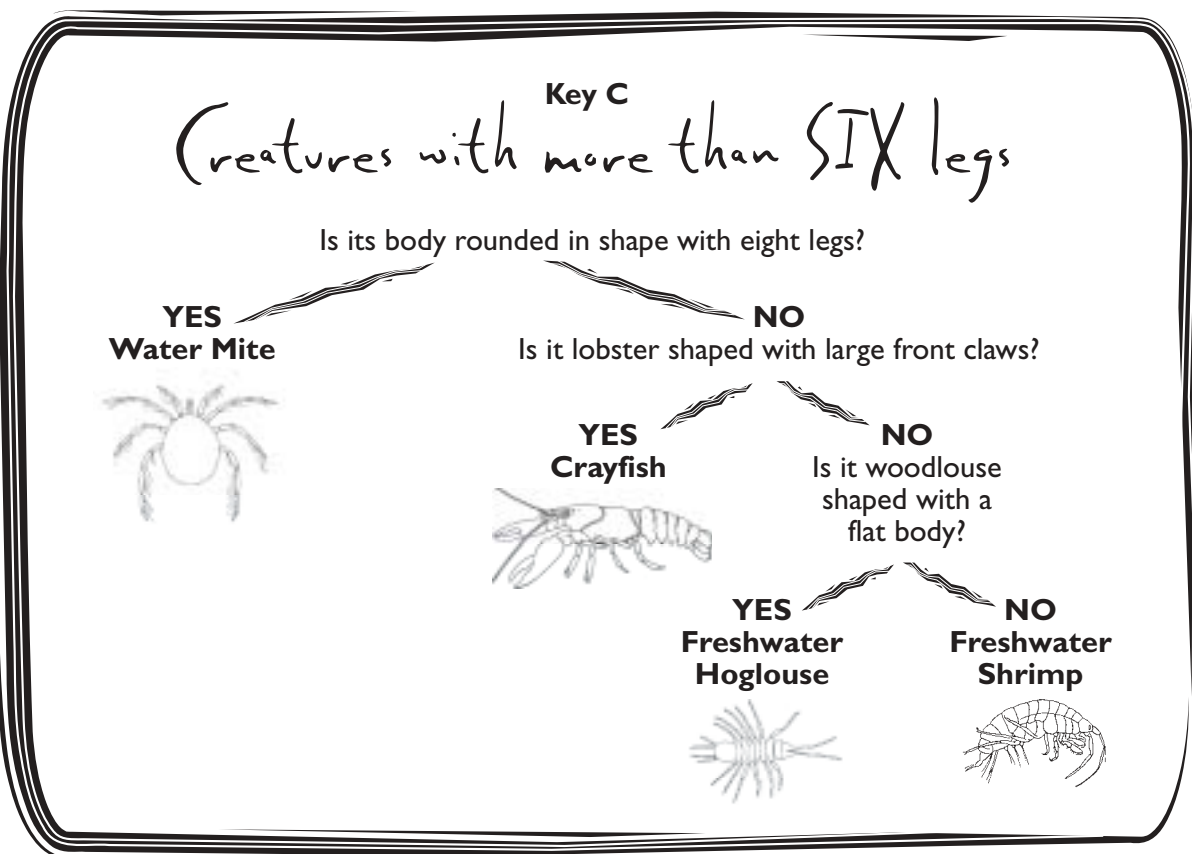
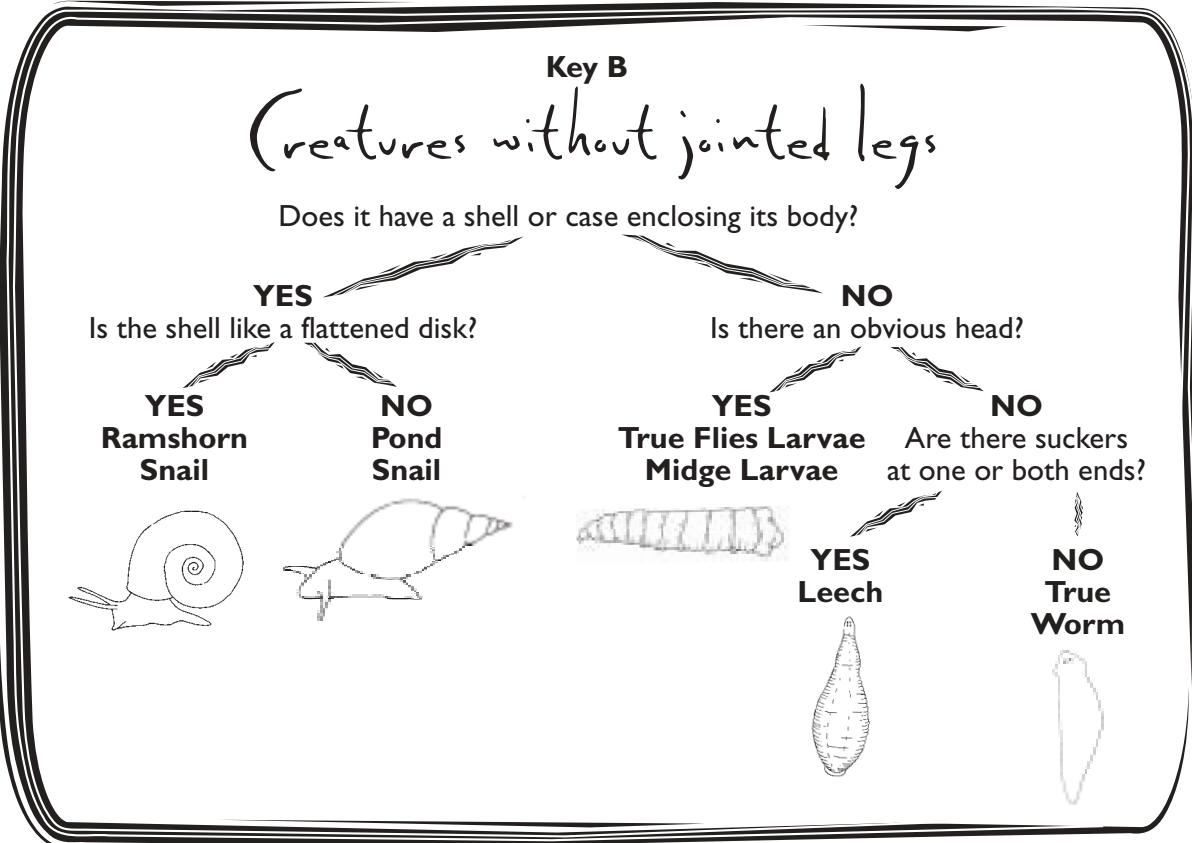
Key for Woodland Invertebrates

Invertebrate



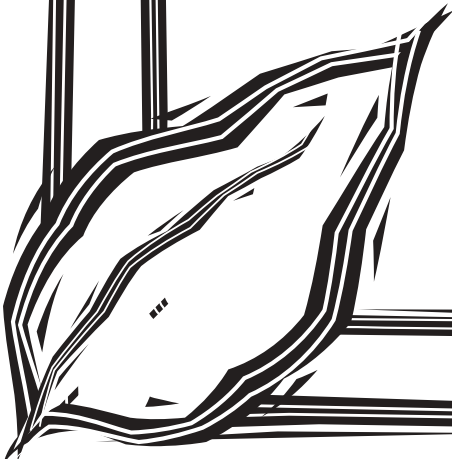
Pond Identification Chart





Plant Recording Sheet

✓ Write the names of all the different plants you find in the box below.



My Plant Recording Sheet

Name: Habitat:

Draw a picture of your plant here.

What is the plant called?

Draw one of the plants leaves here.
What colour is it?

How is your plant adapted to
where it lives?


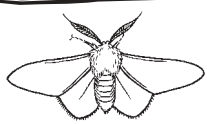
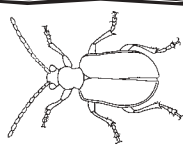

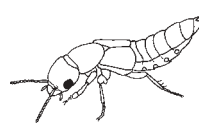

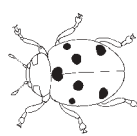
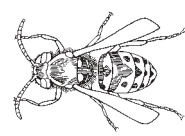
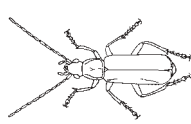




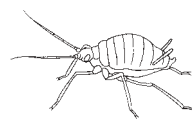
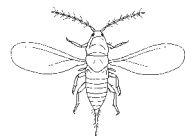
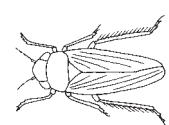
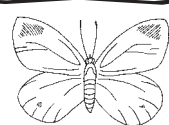
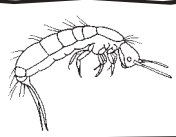
What might eat your plant?

Further information, eg: colour, flowers,
shape of stem, hairs or thorns

Invertebrate Recording Sheet

Use the table to record the number of invertebrates that you found.

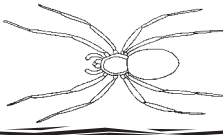
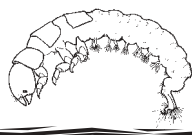


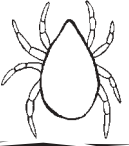


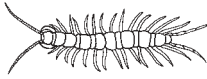
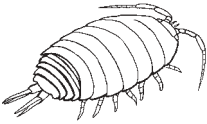

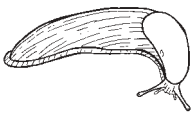

insects

Invertebrate	Number found	Invertebrate	Number found
Ground Beetle 		Moth 	
Leaf Beetle 		Fly 	
Rove Beetle 		Bee 	
Ladybird 		Wasp 	
Soldier Beetle 		Ant 	
Earwig 		Grasshopper or Cricket 	
Shield Bug 		Aphid 	
Bug (any type) 		Leaf Hopper 	
Butterfly 		Springtail 	

Invertebrate Recording Sheet



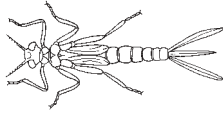








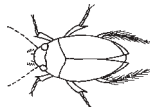



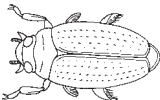
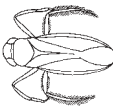

non insects

insect larvae

non insects		insect larvae	
Invertebrate	Number found	Invertebrate	Number found
Spider 		Fly Larva 	
Harvestman 		Caterpillar (Butterfly or Moth Larva) 	
Mite 		Beetle Larva 	
Millipede 		other	
Centipede 			
Woodlouse 			
Earthworm 			
Slug 			
Snail 			







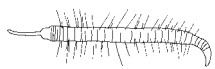




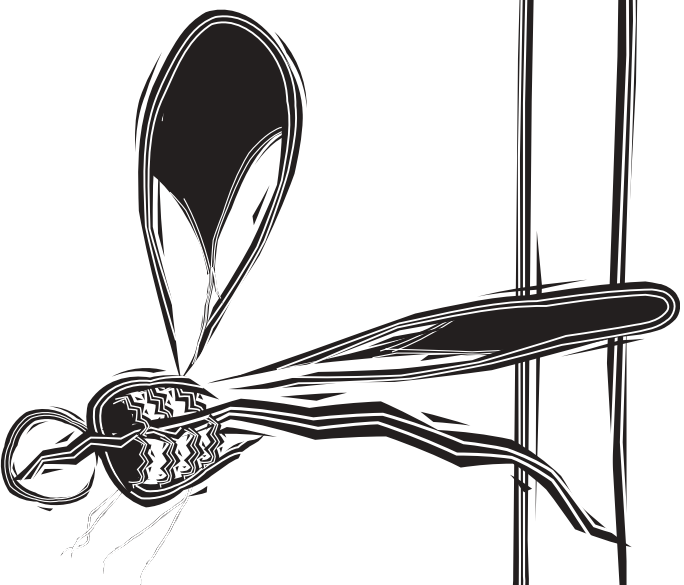



Pond Creature Recording Sheet

Use the table to record the number of creatures that you found.

Pond Creature	Number found	Pond Creature	Number found
Mayfly Nymph 		Water Stick Insect 	
Damselfly Nymph 		Water Scorpion 	
Dragonfly Nymph 		Pond Skater 	
Mosquito Larva 		Water Flea 	
Cased Caddisfly Larva 		Cyclops 	
Phantom Midge Larva 		Diving Beetle 	
Beetle Larva 		Great Diving Beetle 	
Greater Water Boatman 		Whirligig Beetle 	
Lesser Water Boatman 		Freshwater Shrimp 	

Pond Creature Recording Sheet

Use the table to record the number of creatures that you found.

Pond Creature	Number found	Pond Creature	Number found
Freshwater Hologlouse 		Freshwater Limpet 	
Flatworm 		Tadpole 	
Leech 		Frog 	
Water Worm 		Toad 	
Rat Tailed Maggot 		Newt 	
Water Mite 			
Water Spider 			
Pond Snail 			
Ramshorn Snail 			

My Invertebrate Recording Sheet

Name: Habitat:

What is it called?

Where did you find it?

How many legs does it have?

My invertebrate looks like this:

How does it move?

What does it eat?

How is it suited to this habitat?

What might eat it?

My Pond Creature Recording Sheet

Name: Habitat:

What is it called?

How does it breathe/get oxygen?

How many legs does it have?

My pond creature looks like this:

How does it move?

What does it eat?

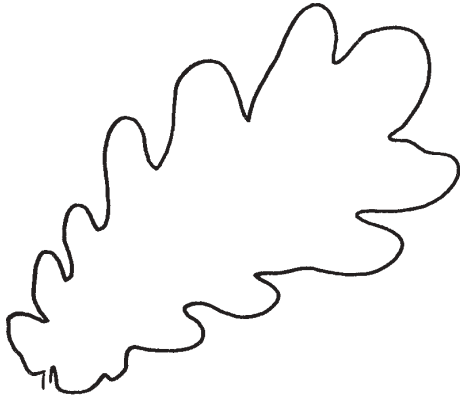
How is it suited to this habitat?

What might eat it?

Leaf Bingo

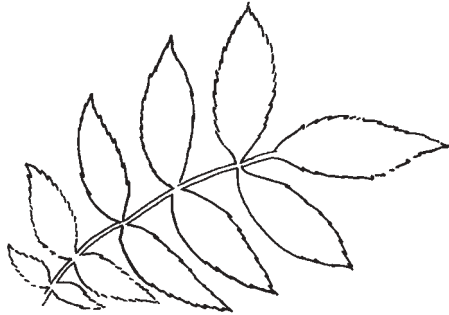
Copy the pictures on to card and cut out each individual card.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



When you have found it use a key to identify the plant.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



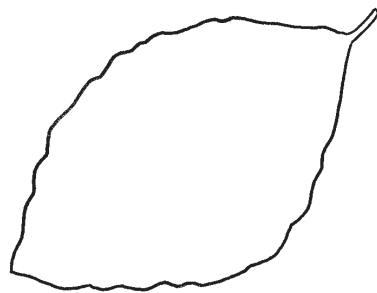
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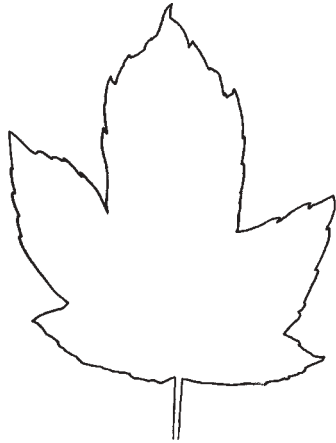


When you have found it use a key to identify the plant.

Leaf Bingo

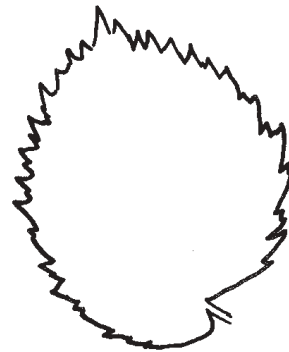
Copy the pictures on to card and cut out each individual card.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



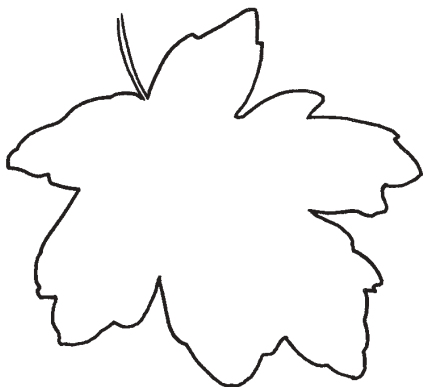
When you have found it use a key to identify the plant.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



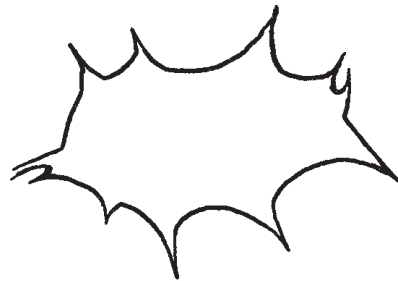
When you have found it use a key to identify the plant.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



When you have found it use a key to identify the plant.

Look at the plants in the habitat and try to find a plant with a leaf that matches the shape below.



When you have found it use a key to identify the plant.

Who Am I?

Animal Clues

Badger



I spend a lot of time cleaning my home and myself.

I am called a boar if I am male and a sow if female.

I like to eat bluebells and hedgehogs.

I live in tunnels underground called a sett.

I am nocturnal.

I have black and white fur.

Squirrel



I can be one of two colours.

My home is called a drey.

Foxes like to eat me.

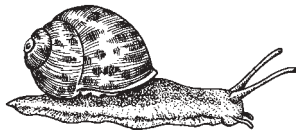
I have sharp teeth and claws.

I am a mammal.

I eat nuts and berries.

I am very good at climbing trees.

Snail



I eat by rasping.

I have one foot.

I live in grass, hedgerows and walls.

Hedgehogs and birds love to eat me.

I eat all kinds of plants.

I like to be cool and damp.

I have a shell.

Centipede



I can be red, orange or yellow.

I am a fierce predator.

I make my home in dead wood.

Badgers and shrews eat me.

I have one pair of legs on each segment of my body.

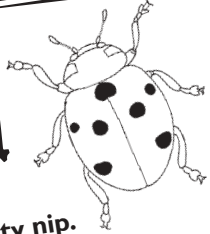
I am long and thin.

I have many but not 100 legs.

Who Am I?

Animal Clues

Ladybird



I can give you a nasty nip.

Gardeners like me.

There are 44 different types of me.

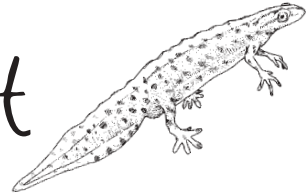
I eat small insects.

Birds and shrews eat me.

I can be blue, red, yellow, orange or black.

The number of spots I have does not show my age.

Newt



I change colour in spring.

One type of me is very rare.

I am a good swimmer.

I live in damp places.

I eat slugs and snails.

When I am young I have gills.

I look a bit like a lizard.

Greater Water
Beetman



I can fly.

I shed my skin so I can grow.

I have a short beak.

I suck the insides out of fish and tadpoles.

I have hairy legs.

One of my pairs of legs is very long.

I like doing backstroke.

Dragonfly



You will only see me flying in the summer.

I have a mask which helps me catch food.

My larva jet propel themselves along in the water.

I have very large eyes.

I start my life in the water.

I can be red, green or blue.

I'm not a fire breather!

Interdependence

Look carefully at the words below and then write them in the correct box.

Carbon Dioxide	Nutrients	Food	Fertiliser
Oxygen	Disperse Seeds	Shade	
Transport Pollen	A Place To Hide	Shelter	

Plants



We help animals to survive because we provide them with:

Animals help us survive because they:

Animals




We help plants to survive because we provide them with:

We help other animals to survive because we provide them with:

Interdependence

Use the words below to complete the gaps in the sentence below.

Seeds	Predators	Nutrients	Carbon Dioxide	Pollen
Shade	Food	Oxygen	Waste Products	Food
Carbon Dioxide	Food	Homes	Bad Weather	



Plants


We use up that animals breathe out and make when we photosynthesise. Animals need this gas to survive.

On a hot, sunny day we provide that helps keep animals cool.

Many animals make their within us or from us. Animals need shelter to be protected from and

We make our own Without us there would be no animals. Many animals like to eat us.

We use from the soil to make food. When animals eat us they are passed on to them. Animals need them to live healthily.



Animals

We breathe out Plants need this gas for photosynthesis.

We are for other animals. Without us, other animals would starve.

When we go to the toilet our are broken down and returned to the soil for plants to use.

Some of us carry from plant to plant. Without us some plants would not be able to reproduce. We also help disperse If we did not do this many new plants would not grow.

Interdependence Answers

Carbon Dioxide	Nutrients	Food	Fertiliser
Oxygen	Disperse Seeds	Shade	
Transport Pollen	A Place To Hide	Shelter	

Plants



We help animals to survive because we provide them with:

- Food**
- Oxygen**
- Shade**
- A Place To Hide**
- Shelter**

Animals help us survive because they:

- Disperse Seeds**
- Transport Pollen**

Animals



We help plants to survive because we provide them with:


- Carbon Dioxide**
- Nutrients**
- Fertiliser**

We help other animals to survive because we provide them with:

- Food**

Interdependence Answers

Seeds	Predators	Nutrients	Carbon Dioxide	Pollen
Shade	Food	Oxygen	Waste Products	Food
Carbon Dioxide	Food	Homes	Bad Weather	



Plants


We use up **CARBON DIOXIDE** that animals breathe out and make **OXYGEN** when we photosynthesise. Animals need this gas to survive.

On a hot, sunny day we provide **SHADE** that helps keep animals cool.

Many animals make their **HOMES** within us or from us. Animals need shelter to be protected from **PREDATORS** and **BAD WEATHER**.

We make our own **FOOD**. Without us there would be no animals. Many animals like to eat us.

We use **NUTRIENTS** from the soil to make food. When animals eat us they are passed on to them. Animals need them to live healthily.



Animals

We breathe out **CARBON DIOXIDE**. Plants need this gas for photosynthesis.

We are **FOOD** for other animals. Without us, other animals would starve.

When we go to the toilet our **WASTE PRODUCTS** are broken down and returned to the soil for plants to use.

Some of us carry **POLLEN** from plant to plant. Without us some plants would not be able to reproduce. We also help disperse **SEEDS**. If we did not do this many new plants would not grow.

Food Chains

Blackberry Bush → **Mouse** → **Owl**

I am a plant.	I am a herbivore.	I am a carnivore.
I get my energy from the	I only eat plants.	I eat other animals.
I use it to make my own food.	I get my energy from eating the	I get my energy from eating the

Look at these different types of plants and animals.
Which of them are consumers and which of them are producers?

Caterpillar	Deer	Daisy	Buttercup	Sparrow
Seaweed	Crab	Cabbage	Whale	Rose Bush

Producers	Consumers
.....
.....
.....

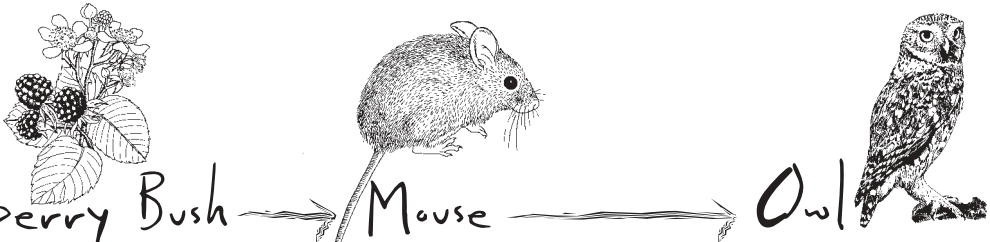
Put these organisms into the correct order for a food chain and draw in the arrows

Blue Tit			
Sunflower Seeds	→	→	
Cat			

Snail				
Sparrowhawk	→	→	→	
Cowslip				
Thrush				

Insect Larva				
Greenfly	→	→	→	
Rosebush				
Coal Tit				

Food Chains Answers



Blackberry Bush → **Mouse** → **Owl**

I am a plant.	I am a herbivore.	I am a carnivore.
I get my energy from the <u>SUN</u> .	I only eat plants.	I eat other animals.
I use it to make my own food.	I get my energy from eating the <u>BLACKBERRY BUSH</u> .	I get my energy from eating the <u>MOUSE</u> .

Look at these different types of plants and animals.
Which of them are consumers and which of them are producers?

Caterpillar	Deer	Daisy	Buttercup	Sparrow
Seaweed	Crab	Cabbage	Whale	Rose Bush

Producers	Consumers
DAISY, BUTTERCUP, SEAWEED,	CATERPILLAR, DEER, SPARROW,
CABBAGE and ROSEBUSH	CRAB and WHALE

Put these organisms into the correct order for a food chain and draw in the arrows.

Blue Tit
Sunflower Seeds
Cat

Sunflower Seeds → Blue Tit → Cat

Snail
Sparrowhawk
Cowslip
Thrush

Cowslip → Snail → Thrush → Sparrowhawk

Insect Larva
Greenfly
Rosebush
Coal Tit

Rosebush → Greenfly → Insect Larva → Coal Tit

End of Topic Concept Map

Habitats

Different plants and animals live in different habitats.

Woodlands: trees, bramble, nettle, bluebells
woodlice, millipedes, centipedes, ground beetles.

Pond: reeds, sedge, marsh marigold, water weed,
algae, newts, water beetles, freshwater shrimp,
water boatman.

Grassland: grass, daisies, ragwort, poppies,
cranes bill, grasshoppers, ladybirds, soldier
beetles, crane fly.

Adaptation

Plants and animals are adapted to their environment (suited to where they live).

Adaptations for:

feeding eg: extending mouthparts, pincers

breathing eg: straw like tail, damp skin

protection eg: hard exoskeleton, camouflage



Interdependence

Plants and animals are dependent on other plants and animals for their survival.

Plants: produce oxygen & carbon dioxide
provide food
give shelter
create dead matter
take in carbon dioxide

Animals: produce carbon dioxide
provide food
create dead matter
take in carbon dioxide

Food Chains

- Show what eats what.
- Nearly always start with a plant – uses sun's energy to make its own food.
- Without plants animals would not survive.
- Plants are producers – produce own food.
- Animals are consumers – eat/ consume other plants and animals.
- Arrows show a flow of energy.
- Joining together food chains can make food webs.

Topic Evaluation

Name:

Date:

Topic:

Complete each of the sentences below thinking carefully about what you have learnt during this topic.

At the start of this topic I already knew that...

I now know that...

My favourite part of the topic was...

I liked this part because...

Topic Evaluation - Page two

I did not enjoy...

I did not enjoy it because...

I have not understood...

I would like to learn more about...

Pupil Assessment

Habitats: Adaptation and Interdependence

Name of pupil: Date:

At the end of this topic the above named pupil was able to:

- Recognise that different plants and animals live in different habitats.
- Describe how animals in two habitats are suited to the conditions.

- Recognise that some animals feed on other animals and some on plants.
- Represent feeding relationships in food chains beginning with a green plant.
- Recognise that green plants are the source of food for all animals.

- Use keys to identify some animals and plants.
- Use keys to identify animals and plants.
- Create keys to be used to identify objects.

- Understand and use words such as habitat, organism and food chain correctly.
- Understand and use words such as adapted, predator, prey, consumer and producer correctly.
- Understand and use words such as interdependence, food web and photosynthesis correctly.

- Make relevant observations and measurements and record these appropriately.
- Make a series of observations or measurements appropriate to the task and record these appropriately.

- Suggest explanations for their observations and communicate these using scientific language
- Interpret their data and relate this to scientific knowledge and understanding.
- Suggest limitations of the data collected.

Further comments:
.....
.....
.....
.....

This pupil assessment sheet is based on the expectations set out in the QCA science Scheme of Work for Unit 6A and 6H. The class teacher should complete a pupil assessment sheet for each child. Completed record sheets should be filed so that they can be referred to in the future.

Abiotic Factors Recording Sheet

Name: Date:

Habitat:

Abiotic Factor (eg. temperature)	Measurement Recordings			Average $= \frac{1st+2nd+3rd}{3}$
	First	Second	Third	

Habitat:

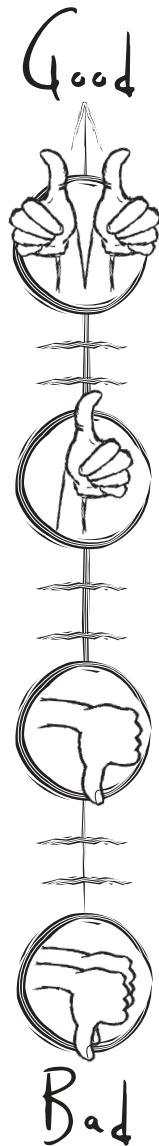
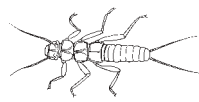
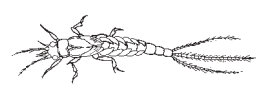




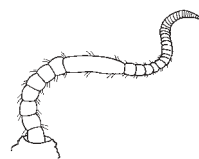

Abiotic Factor (eg. temperature)	Measurement Recording			Average $= \frac{1st+2nd+3rd}{3}$
	First	Second	Third	

Pollution Detective Worksheet

You can assess the quality of the water you have been dipping in simply by looking at the pond creatures you have found. The higher the quality of the water the less polluted the water is.

Follow the steps below.

- Once you have finished pond dipping identify the creatures you have found.
- In the table below put a tick next to those creatures that you have caught.

<p>Good</p>  <p>Bad</p>	Water Quality	Indicator Animals	Tick if present
	Extremely Good	  Stonefly Nymph Mayfly Nymph	
	Very Good	  Freshwater Shrimp Caddisfly Larva	
	Fair	  Water Louse Bloodworm	
	Poor	  Sludge Worm Rat-tailed Maggot	
	Very Polluted	None found	

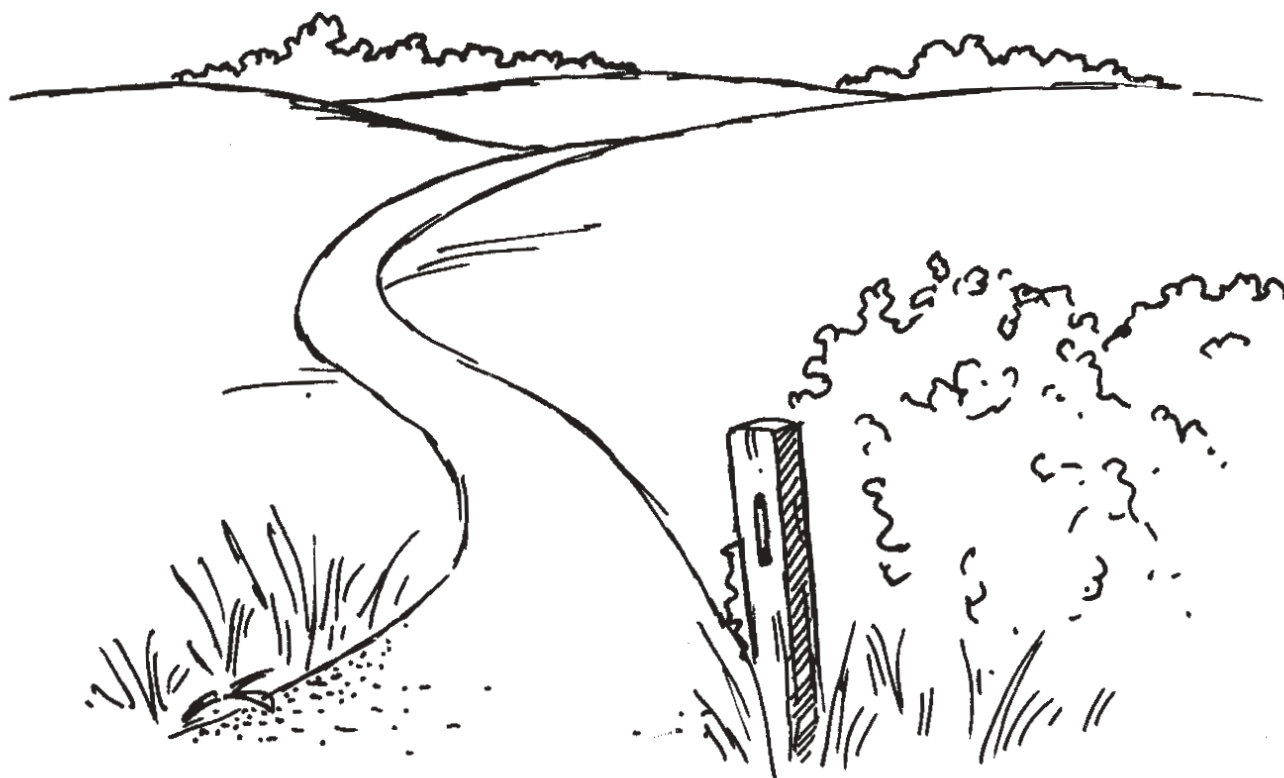
The highest tick in the table tells you the quality of the water. Ignore any ticks that you have below this.

The quality of the water is:

Wise Water Ways

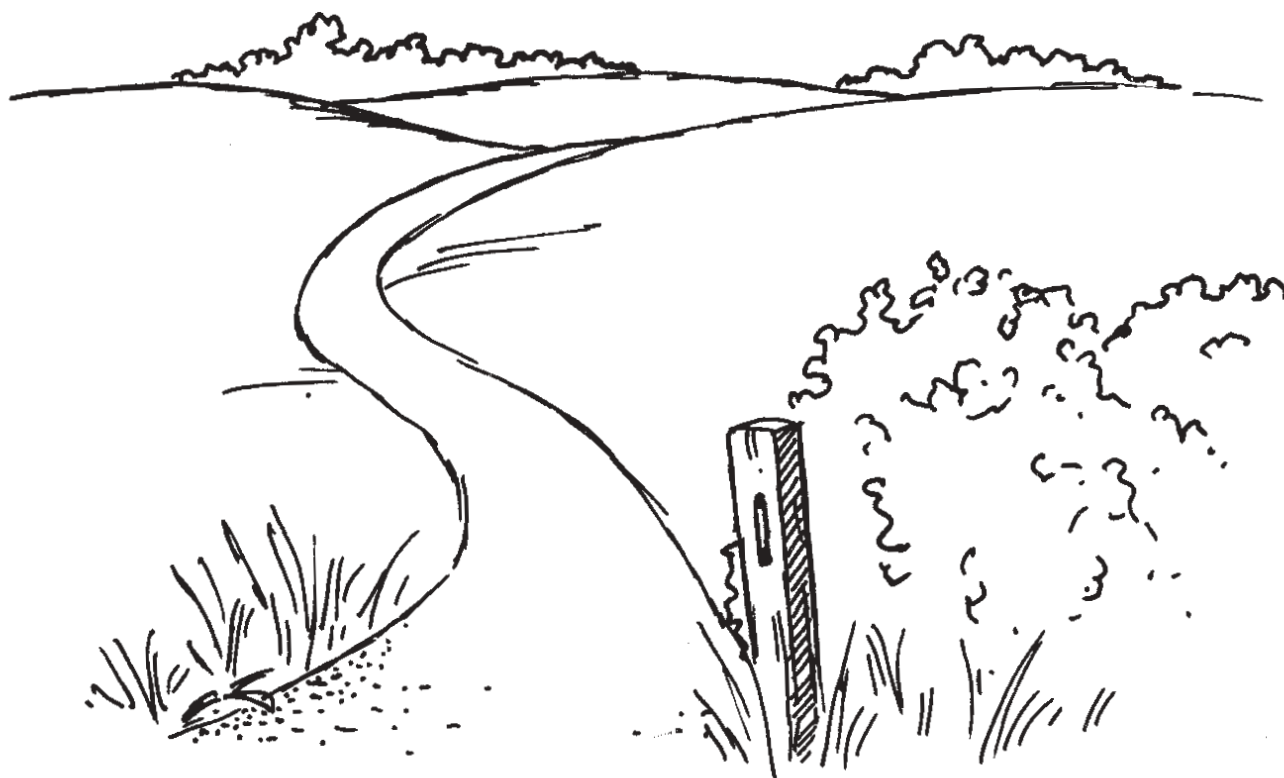
- Cover any cuts and scratches with waterproof plasters and rubber gloves before you start any water activities.
- Keep your eyes and ears open for danger at all times.
- Stay out of the water unless you can see the bottom and close supervision from a responsible adult is available – **NEVER** go deeper than wellie depth.
- Stay away from steep banks, keep close to the rest of the group and in sight at all times.
- Don't splash water at other people or push them over.
- Wash your hands with soap and tap water afterwards, and before you have anything to eat or drink.
- Don't get river water or wet objects in your mouth.
- Know what the safety procedures are in the event of an accident.

Source: Wildlife WATCH, Freshwater Activity Book



The Country Code

- Enjoy the countryside and respect its life and its work.
- Protect wildlife, plants and animals.
- Help to keep all water clean.
- Keep to the paths.
- Make no unnecessary noise.
- Use gates and stiles to cross fences, hedges and walls where permitted.
- Fasten all gates.
- Take your litter home.
- Leave wildlife, livestock, crops and machinery alone.
- Keep your dog under close control.
- Guard against risk of fire.
- Take special care on country roads.



A Recount Writing Frame

Name: Date:

MY VISIT TO:

The place we visited is...

When we first arrived...

In the morning...

I discovered that...

At lunchtime...

In the afternoon...

I learned that...

The best bit was...

A Report Writing Frame

Name: Date:

THE WOODLAND HABITAT

The woodland is...

It feels and looks...

The plants that live there...

The animals that live there...

At night...

During the winter...

An Explanation Writing Frame

Name: Date:

A POND CREATURE

A..... lives in the water. It has to be adapted to the habitat so that...

It breathes or gets oxygen by...

It moves through the water by...

It eats...

It is eaten by...

To help it catch its food and escape predators it...

An Instruction Writing Frame

Name: Date:

HOW TO POND DIP

Pond dipping allows us to...

You will need:

How to pond dip:

1.

2.

3.

4.

5.