

Marvellous Minibeasts

Activities for children aged 7–11 years

WWT has a well-established and well-loved education programme that we run across the UK at our ten wetland sites. We've designed these short activities based on one of our school activities. We've made it to connect you and your family to the natural world and help you to work with your children to feel great about nature and understand some of the things that WWT love and care about.

Why wetlands?

WWT works across the UK to save, conserve and build wetlands for wildlife and people. Wetlands are one of the most important habitats on earth – storing huge amounts of CO₂, providing a natural way of stopping flooding and serving as a home for huge numbers of different creatures.

For those of you that have been completing the activities week by week, this final session will provide a review of much of the learning that has taken place over the last 12 weeks. For those of you coming fresh to this, it will provide a great overview of a range of topics connected to the natural world. You might want to look back at some of the previous sessions to look at each aspect in more detail.

These activities link to the National Curricula for science in England, Northern Ireland, Scotland and Wales.

Stuff you need:

- Minibeast cards
- Food chain cards
- Butterfly life cycle cards
- Migration map (see last pages)

Note: Where you see a **Q** this indicates a question to ask your child

Indoor activities

(90 minutes – Can be broken down into 6 manageable chunks)

Section 1: Classification

- Those of you that completed it will remember that in the 'Wonderful Wetland Wildlife' session we looked at the difference between vertebrates and invertebrates.
- Take a look at the Minibeast Cards.

Q Are all of the animals on the Minibeast Cards vertebrates or invertebrates?

Reminder if your child is unsure or you didn't do the Wonderful Wetland Wildlife session:

Key word: VERTEBRATE

An animal that has a backbone.

Key word: INVERTEBRATE

An animal that doesn't have a backbone.

- All of the animals on the cards are invertebrates. They don't have a backbone. Some have a soft body (such as the slugs and worms) whilst others have an exoskeleton, a hard covering on the outside of their bodies (like the insects and spiders).

Reminder: Invertebrates can be broken down into the following groups:

Key word: INSECT

- Insects have six legs
- They have three main body parts (a head, a thorax, and an abdomen)
- They have a pair of antennae on top of their heads
- Insects have an exoskeleton - a hard, shell-like covering on the outside of their body

Key word: ARACHNID

- Arachnids have eight legs
- They don't have antennae
- They have two main body parts (a cephalothorax and an abdomen)

Key word: MOLLUSC

- Molluscs don't have legs
- They have a soft body without segments
- Many molluscs have a shell (sometimes this is hidden inside their body!)

Key word: WORM (ANNELID)

- Worms don't have legs
- They have long, narrow bodies
- They have a head and a tail end

Key word: CRUSTACEAN

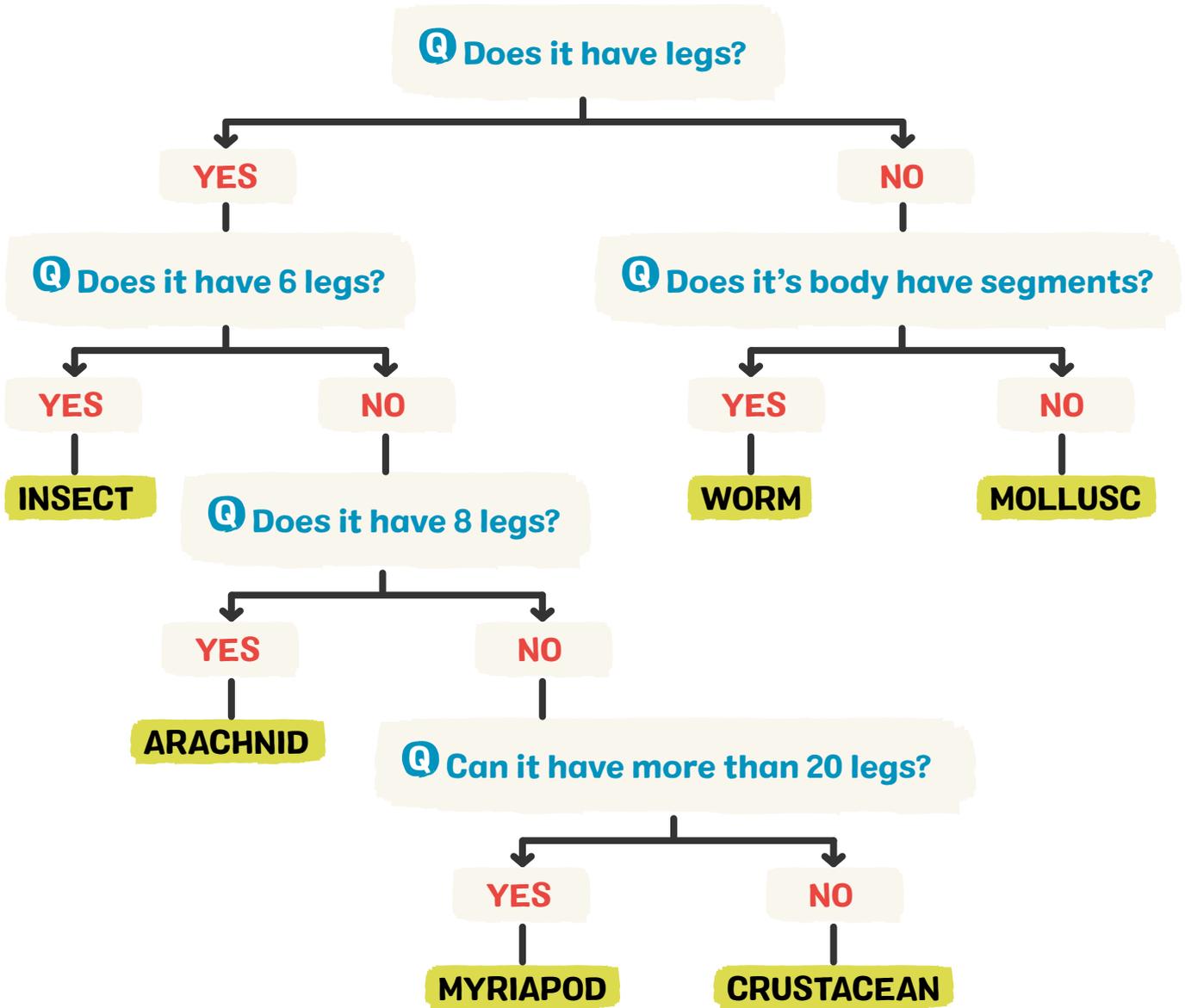
- Crustaceans have a hard exoskeleton or shell
- They breathe through gills, meaning they can live underwater (though not all of them do)

New key word: MYRIAPOD

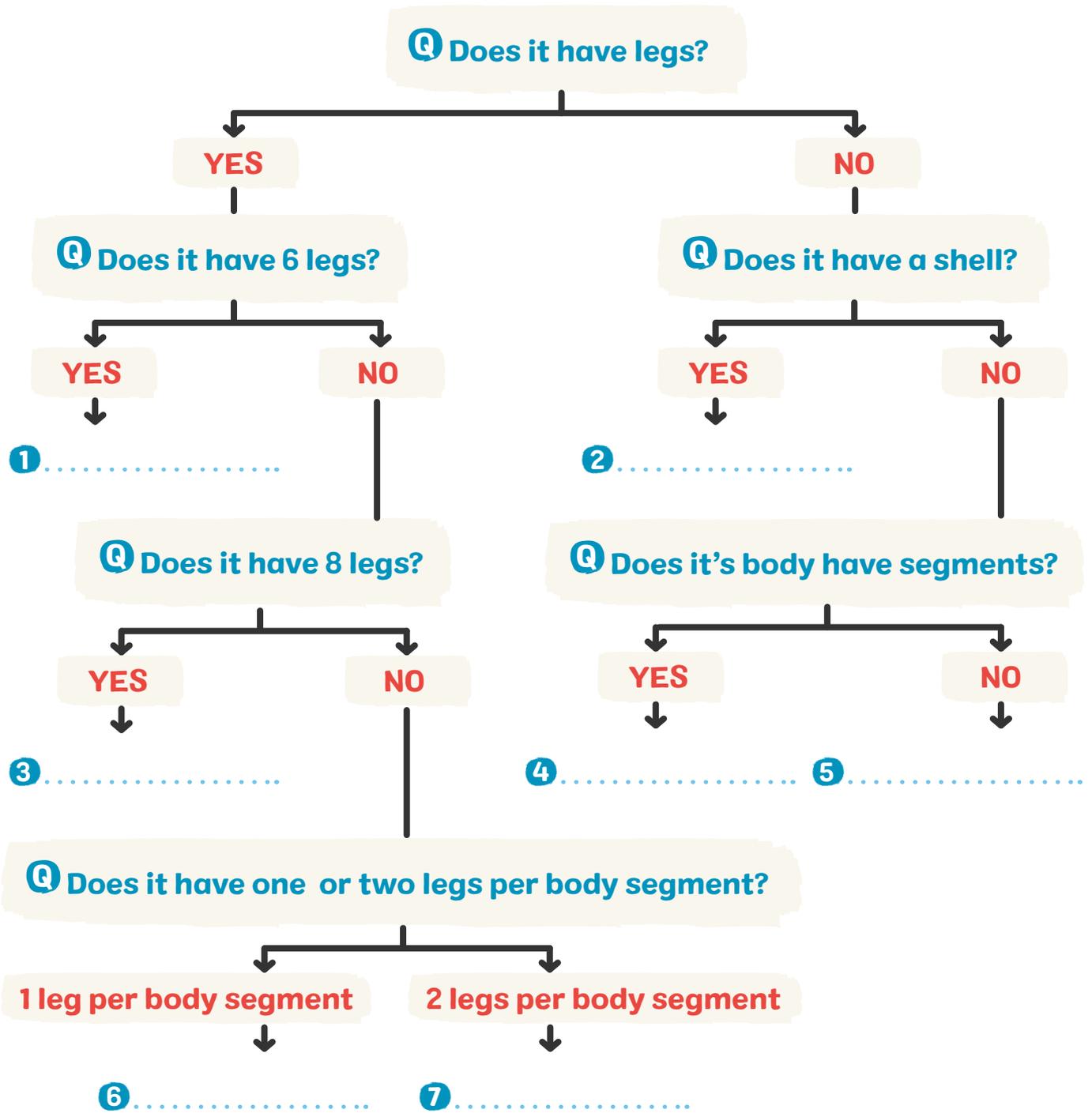
- Myriapods have lots of legs (usually more than 20)
- Their bodies are usually split into segments

- Scientists often use keys to help them to identify the different groups animals belong to. A key is a series of questions each with two possible answers. The answers lead you to the next question and eventually to the group of animals.

Q Can you use the key below to split the animals on the cards into the above six groups?



Insects	Arachnids	Molluscs	Worms (Annelids)	Crustaceans	Myriapods
<ul style="list-style-type: none"> - Butterfly - Ladybird - Aphid - Bee - Ant 	<ul style="list-style-type: none"> - Garden spider - Harvestman 	<ul style="list-style-type: none"> - Snail - Slug 	<ul style="list-style-type: none"> - Earth worm 	<ul style="list-style-type: none"> - Woodlouse 	<ul style="list-style-type: none"> - Centipede - Millipede



Answers

1. Ladybird, 2. Snail, 3. Spider, 4. Earthworm, 5. Slug, 6. Centipede, 7. Millipede

- Play 'guess the animal' (if you have completed the Wonderful Wetland Wildlife session you will have played this before but with a different set of animals):
- 1 Lay out all of the cards picture side up.
 - 2 Get your child to choose one of the animals on the cards without telling you (they shouldn't pick it up - leave it with the other cards).
 - 3 Ask your child a yes / no question about their animal (e.g. Does it have six legs? Can it fly?).
 - 4 Once they have answered, remove all of the animals that are now ruled out (e.g. if you ask has it got six legs and they say no, you can remove all of the insects).
 - 5 Keep asking questions and removing cards until you only have one card left.
 - 6 Is this the animal your child chose?
 - 7 Now swap over so that you choose an animal and they have to guess which you have chosen.

Section 2: Habitats

Q Do you know / remember what we mean by a habitat?

- A habitat is simply a place (or type of natural environment) where plants and animals live.

Q Do you know / remember what we mean by a micro-habitat?

- A micro-habitat is a much smaller habitat that forms part of a larger habitat. For example, a log pile may be a micro-habitat in a garden (the main habitat).

Q Look at the habitats visual. How many different micro-habitats can you see?

Microhabitats shown include:

- Pile of stones
- Stone wall
- Log pile
- Compost heap
- Plants
- Bushes
- Flowers
- Leaves
- Grass / lawn

Q Look at each of the Minibeast Cards. For each minibeast, can you use a piece of wool or string to connect it to one of the micro-habitats where it might live?

- Turn over each card and look at the micro-habitats listed under 'where to find them'. Were you correct? If not, you can always move the wool or string.

Section 3: What do animals eat?

If you completed the 'Who eats who?' session you'll remember that we looked at food chains and what different animals eat. Your child learnt the difference between herbivores, carnivores and omnivores. If you didn't complete this session, or if your child has forgotten, talk through the key words below with your child:

Key word: **CARNIVORE**

An animal that eats other animals.

Key word: **HERBIVORE**

An animal that eats plants.

Key word: **OMNIVORE**

An animal that eats both animals and plants.

Key word: **DETRITIVORE**

An animals that feeds on dead plants and animals.

- Turn over the cards and look at what each animal eats.

Q Can you group the animals into carnivores, herbivores and omnivores?

(Some of the animals that are detritivores could also fit into one of the other groups but for the purposes of this activity place any animal that could be considered a detritivore in this group.)

Herbivores	Carnivores	Omnivores	Detritivores
- Butterfly - Snail - Aphid - Bee	- Centipede - Spider - Ladybird - Beetle	- Harvestman - Ant	- Woodlouse - Millipede - Earthworm - Slug

Q Why are detritivores so important?

- If we didn't have detritivores, the dead stuff would just stay there and would start to pile up. Detritivores are vital to a healthy natural world. They're the earth's natural recyclers.

Food chains

Q Do you know / remember what we mean by a food chain?

Key word: **FOOD CHAIN**

A food chain shows how each living thing gets food and how energy is passed from creature to creature. They are displayed using arrows. To get the arrows the right way round, you can think of the arrow as meaning 'is eaten by'.

e.g. **PLANT > SLUG > CENTIPEDE**

The plant is eaten by the slug. The slug is eaten by the centipede.

- Look again at what each animal on the Minibeast Cards eats.

Q Can you construct a food chain from these animals using the Food Chain Cards and the picture of the plant?

Remember, think of the arrows as meaning 'is eaten by' to help you to get them the right way round.

Q Can you use the labels to show whether each animal is a herbivore, carnivore, omnivore or detritivore?

Q Do you know / remember what we mean by the following words: producer, consumer, predator, prey?

Key word: PRODUCER

A living thing that makes its own food. The main producers are plants. They make their food from the sun.

Key word: CONSUMER

A living thing that eats other plants or animals.

Key word: PREDATOR

An animal that catches and eats other animals.

Key word: PREY

An animal that is caught and eaten by other animals.

Q Can you use the labels to show whether each living thing is a producer, consumer, predator or prey?

Remember, some animals can be both predator and prey.

Section 4: Life cycle of a butterfly

Q Do you know / remember what we mean by a life cycle?

- A life cycle shows how a living thing is born, grows into an adult and then has babies of its own. All living things have a life cycle, although they can be quite different.
- Look at the butterfly life cycle cards. This shows the four stages of a butterfly life cycle.

Q Can you cut out the pictures and arrows and stick them onto a separate piece of paper in the correct order to show the life cycle?

Answer

The butterfly in the life cycle is a painted lady butterfly.

The egg stage:

- The female lays many pale-green eggs in a row on a leaf.
- After seven days the baby caterpillars start to hatch.
- They eat their way out of the egg and then eat the shell.

The caterpillar stage:

- Caterpillars are examples of larvae.
- The Caterpillar spends its life eating; as it grows bigger it sheds its old skin and emerges with its new body.
- After two weeks of being a caterpillar, it attaches itself with silk and hangs upside down on a leaf.
- Then the caterpillar's skin splits exposing the chrysalis.

The chrysalis stage:

- A chrysalis (or pupa) hangs on the leaf for one week.
- Inside the chrysalis the caterpillar is changing its body into a butterfly.

The butterfly stage:

- After one week the chrysalis splits open and the butterfly emerges.
- The creature has changed from egg to caterpillar to chrysalis to butterfly in just four weeks - what an amazing transformation!



Q Do you know / remember what we mean by metamorphosis?

Key word: **METAMORPHOSIS**

When an animal's body changes completely as it goes through its life cycle. For example, a tadpole looks very different to an adult frog, so we say the animal has gone through metamorphosis. A baby otter looks like a smaller version of the adult otter. Otters don't go through metamorphosis.

Q Does a butterfly go through metamorphosis?

Yes, the adult butterfly looks very different and is a different shape to the caterpillar.

Section 5: Migration

In the Migration Challenge session we looked at the migration of wetland birds. Although it's hard to believe, some insects also migrate. One of these is the painted lady butterfly.

- Painted lady butterflies migrate from the Sahal in Africa all the way to the UK and back again (they migrate in steps).

Step 1:

From the Sahal (the area just below the Sahara desert) to the coast of North Africa (just above the Sahara desert).

Step 2:

From the coast of North Africa to mainland Europe.

Step 3:

From mainland Europe to the UK.

- Often the life cycle takes place at each new location and it's the new generation of butterflies that make the next step of the migration.
- These tiny butterflies that weigh less than gram and have a brain the size of a pinhead can travel up to 100 miles per day. They can fly at speeds of up to 30mph and at a height of over 500 metres. Nature really is amazing!

- If you completed the Migration Challenge session, you could use your migration map from that session. If not, print a new copy of the map (see final pages of this document).

If you are starting with a new map, label:

- the seven continents and five oceans
- the equator
- the northern and southern hemispheres
- the Sahara desert
- the Mediterranean Sea

Q Can you plot the three-step migration of the painted lady butterfly onto the Migration Map?

NOTE: It doesn't have to be exact so long as step one takes it over the Sahara, step 2 takes it over the Mediterranean and step 3 takes it from the European mainland to the UK.

Q Imagine you are a painted lady butterfly completing one of these migration steps. How do you feel?

What challenges or obstacles might you face on your journey? Nature really is amazing!

Section 6: Adaptations

In the Amazing Adaptations session we looked at the adaptations different birds had developed to enable them to live in a wetland. The creatures on the Minibeast Cards have developed different adaptations to protect themselves from predators. Some have become camouflaged so that predators can't see them whilst others taste bad to put predators off. Some have developed venomous bites or stings while others have a shell to protect themselves.

Q Can you find an animal on the Minibeast Cards that you think might protect itself using camouflage?

- The aphid and rose chafer beetle, among others, use camouflage to help protect them from predators. Perhaps more surprisingly, so does the painted lady butterfly. Although brightly coloured on the tops of their wings, the underside is really well camouflaged.

Q Which do you think might taste bad to predators?

- The harvestman, earthworm, millipede and ladybird produce nasty tasting chemicals to put predators off eating them. Slugs produce a mucus (a slimy substance) that can be distasteful as well as making it more difficult for predators to pick them up. Many creatures that are unpleasant to eat are brightly coloured like the ladybird to warn predators that they either taste bad or are poisonous.

Q Which do you think might have a venomous bite or sting?

- The centipede and spider have venomous bites. Ants either have a venomous bite or spray an acid called formic acid to deter predators. Bees have a venomous sting.

Q How do you think woodlice and snails protect themselves?

- Snails retreat into their shell when they feel threatened and woodlice roll into a ball.

Q Imagine you were a minibeast. What defence mechanism would you use to protect yourself from predators?

Take it outside:

(15 minutes+)

- Go on a mini-beast hunt.

Q How many different micro-habitats can you find?

- Look in all of the different micro-habitats you can find. Good places to look include under stones and rocks, under logs and twigs, in the grass and on plants, bushes and flowers.

For each animal you find:

- **What do you think it is?**
- **What group of animals do you think it belongs to?**
(insect, arachnid, mollusc, worm / annelid, crustacean, myriapod)
- **Can you see any adaptations that might make it suited to this micro-habitat?**
- **What do you think this creature might eat?** Watch it carefully and you might find out!
- **Do you think it is herbivore, carnivore, omnivore or detritivore?**
- **Can you think of a food chain that might include this creature?**
- **Think about the creature's life cycle. Do you think it goes through metamorphosis?**

Q Imagine you are the animal you found. What might you be thinking and feeling?

Q What is your favourite animal you found? Why? What is it you love about this animal?

Q What could you do to help protect this animal or provide it with a home to live?



@WWTWorldwide



Have fun and do share your work to our social media accounts –
we'd absolutely love to see it!

Food chain cards p13-16

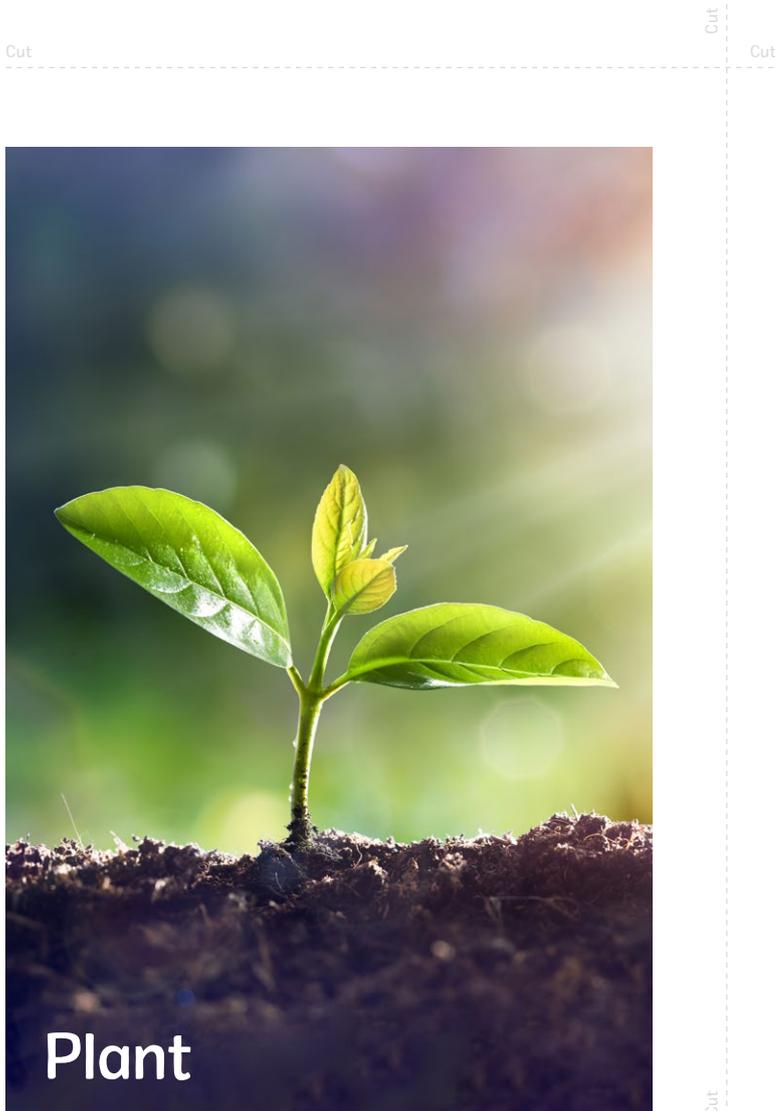
- To make the cards, cut along the dotted lines.

Minibeast cards p17-23

- To make the cards, cut the line across the width of your paper then fold each half in half again so you end up with a picture on one side and the information on the other. Stick the two sides together with glue.
- Include the Plant picture at the bottom of this page.

butterfly life cycle cards p24

- These are not in order. Cut out the cards and rearrange in the correct order and tick onto another piece of paper.



Cut



Cut

Cut



Cut

Cut



Carnivore

Cut

Cut

Carnivore

Carnivore

Cut

Cut

Carnivore

Carnivore

Cut

Omnivore

Cut

Omnivore

Cut

Cut

Omnivore

Cut

Omnivore

Cut

Omnivore

Cut

Herbivore

Cut

Herbivore

Cut

Herbivore

Cut

Herbivore

Cut

Herbivore

Detritivore

Detritivore

Detritivore

Detritivore

Detritivore

Producer

Producer

Producer

Producer

Producer

Cut

Predator

Cut

Predator

Cut

Cut

Predator

Cut

Cut

Predator

Cut

Prey

Cut

Prey

Cut

Prey

Cut

Prey

Cut

Prey



Cut

Painted lady butterfly

Classification: Insect

No. of legs: 6

Diet: Thistle plants as caterpillars; nectar as adults.

Where to find them: On plants as caterpillars; Anywhere there are flowers as adult butterflies.

Did you know? Painted ladies do not hibernate like most other butterflies. Instead they migrate.

Cut



Harvestman

Classification: Arachnid

No. of legs: 8

Diet: Smaller insects, snails, worms, plants and fruit

Where to find them: In leaf litter, among leaves and in grass

Did you know? Harvestmen aren't spiders but they are related to them. They don't spin webs and aren't venomous.



Cut

Garden spider

Classification: Arachnid

No. of legs: 8

Diet: Insects and woodlice

Where to find them: On bushes and plants

Did you know? Spider silk is as strong as the material used to make bulletproof vests.

Cut



Earthworm

Classification: Worm / Annelid

No. of legs: 0

Diet: Decaying plant matter

Where to find them: In soil

Did you know? It's not true that if you cut a worm in half it makes two new worms. Although they can regenerate to a small degree, usually both halves die.



Cut

Slug

Classification: Mollusc

No. of legs: 0

Diet: Plants, decaying animals and plants, fungi and earthworms

Where to find them: On plants

Did you know? Slugs can stretch their bodies to make them 20 times longer when they need to squeeze through tiny holes!

Cut



Snail

Classification: Mollusc

No. of legs: 0

Diet: Leaves and fungi

Where to find them: On plants, under rocks and logs

Did you know? The world's smallest land snail could fit through the eye of a needle.



Cut

Ladybird

Classification: Insect

No. of legs: 6

Diet: Aphids and small insects

Where to find them: On plants

Did you know? Ladybirds are brightly coloured, warning predators of their bitter taste.

Cut



Aphid

Classification: Insect

No. of legs: 6

Diet: Sap from plants

Where to find them: On plants

Did you know? Ants 'milk' aphids for the honeydew they produce!



Cut

Bee

Classification: Insect

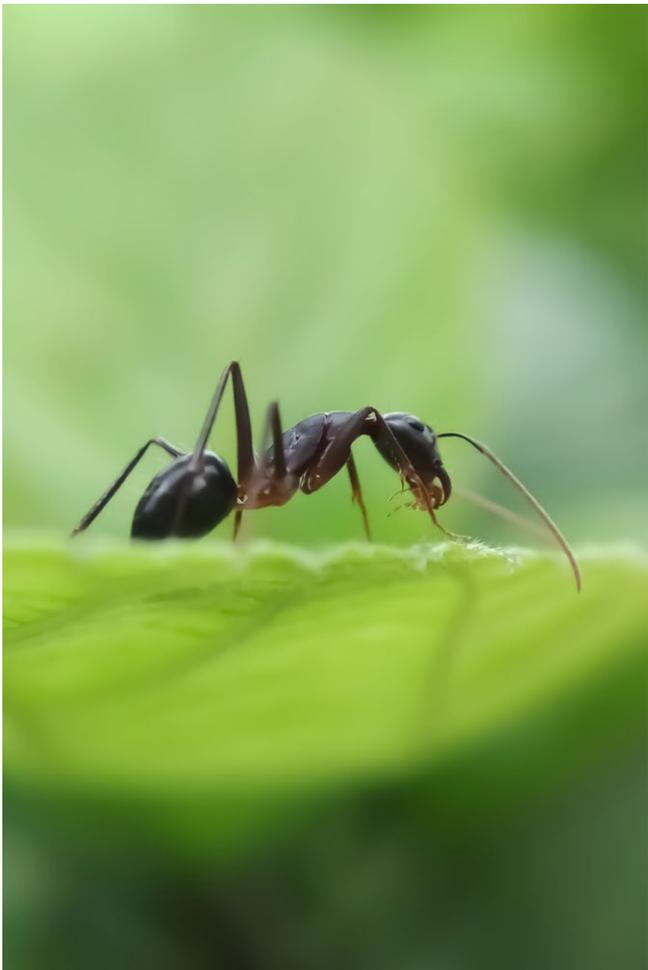
No. of legs: 6

Diet: Nectar and pollen

Where to find them: On plants

Did you know? Bees are not aggressive and will only sting if they feel threatened.

Cut



Ant

Classification: Insect

No. of legs: 6

Diet: Small insects, spiders, fruit and honey

Where to find them: In soil, under stones

Did you know? Some species of ants can bring 100,000 insects a day back to their nest each day.



Cut

Woodlouse

Classification: Crustacean

No. of legs: 14

Diet: Dead plant and animal matter.

Where to find them: Damp places such as under stones and logs, in wall crevices and in compost heaps.

Did you know? Woodlice actually have gills like fish and need water on their gills to breathe. This is why they can only survive in damp places.

Cut



Centipede

Classification: Myriapod

No. of legs: 30-354 (1 pair of legs per body segment)

Diet: Earthworms, spiders, slugs, worms, woodlice and insects.

Where to find them: Centipedes need moist habitats as they rapidly lose water. They can be found in soil and leaf litter, under stones and dead wood, and inside logs.

Did you know? Most centipedes are venomous!

Fold



Cut

Millipede

Classification: Myriapod

No. of legs: 24-750 (2 pairs of legs per body segment)

Diet: Decaying leaves and other dead plant matter.

Where to find them: In leaf litter, dead wood, or soil.

Did you know? Millipedes were among the first-ever land animals, which means they have been around for about 400 million years!

Cut



Fold

Rose chafer beetle

Classification: Insect

No. of legs: 6

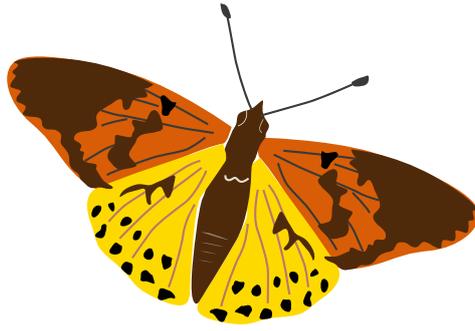
Diet: Slugs, snails, worms and insects.

Where to find them: Under logs and stones.

Did you know? There are over 350,000 different kinds of beetles in the world!

Cut

BUTTERFLY



Cut

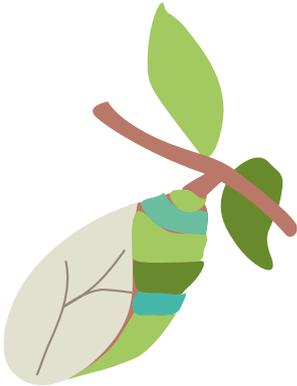


Cut



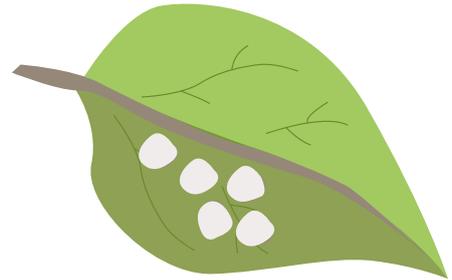
Cut

CHRYSALIS (pupa)



Cut

EGGS

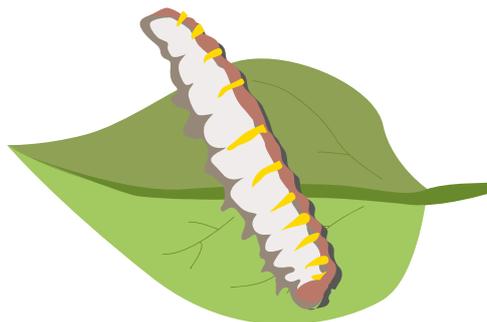


Cut



Cut

CATERPILLAR (larva)



Cut



Migration Map



A garden habitat

