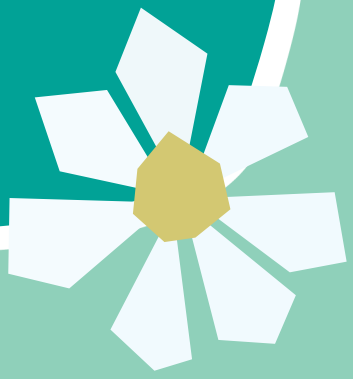
Winchester Science Centre
By Wonderseekers

Marvellous Minibeasts

Pre-visit resources for KS1



Marvellous Minibeasts KS1 Pre-visit Activities

These activities are designed to be completed before you visit for your Marvellous Minibeasts workshop. We recommend working through the activities from 1 to 4 but you are welcome to pick and choose depending on your group's prior knowledge.

Throughout these activities you will be exploring the world of invertebrates or "minibeasts". You will explore what a minibeast is, what different kinds we have, how their anatomy differs from our own and how we humans can support these creatures.

Teacher Guide:

Learning Objectives:

- Identify different types of invertebrates based on their characteristics.
- Describe differences between animals and their structures.

Key Science:

When we say the word "minibeasts" we are generally talking about bugs or creepy crawlies. All these animals are grouped together as invertebrates, which means a creature without a backbone. A vertebra is one of the segments that make up the backbone. We humans have a backbone, so we are grouped as vertebrates. All minibeasts are invertebrates, but this means they need a different method of keeping their body supported. Some invertebrates use an exoskeleton, others might have a shell or a soft body. Invertebrates are have different anatomy to vertebrate animals, having more limbs, antennae and different ways of taking in oxygen.

While invertebrates may be tiny they are very important. We have documented 1.3 million different invertebrate species, and these invertebrates make up 95% of the animal species on Earth. They are one of the oldest groups of animals and the first to move onto land millions of years ago. Invertebrates make up a key part of different ecosystems on Earth. They act as food for bigger animals, decomposers that bring nutrients from dead plants back into the food web and they play key role in pollination.

Over the past 60 years we have seen invertebrate populations across the UK decline massively with a decrease in invertebrate abundance by 37%. This is has been caused by changes to agriculture, especially the use of intensive pesticides, and climate change. It's important we take care of these invertebrates and we have started by providing space for them to live such, as within bee bricks and bug hotels.

Curriculum links:

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Describe and compare the structure of a variety of common animals.

Key Definitions:

Life cycle – The different stages in the life of a living thing.

Invertebrate – A creature without a backbone. They are usually small, like insects, spiders, ticks, slugs, snails, worms. Often called minibeasts.

Microscope – A piece of equipment which helps things to look bigger, so we can see tiny things.

Microscopic – Something so small, you need a microscope to see it.

Mollusc – A type of invertebrate. They have a soft body and some will have a hard shell. They move with a 'foot' along the underside that helps them move. Most live in the ocean, but we have some on land like slugs and snails.

Crustaceans – A type of invertebrate. They will typically have a hard outer shell which they need to moult when they grow too large. They will usually have at least 8 legs but might have more. This group includes crabs, lobsters and woodlice.

Insects – A type of invertebrate. They have six legs, at least 1 pair of antennae and sometimes have wings. They have three parts to their body; the head, the thorax and the abdomen. This group contains ants, beetles, butterflies, flies and grasshoppers.

Annelids – A type of invertebrate. All have no limbs, instead their body is long and made up of segmented rings. They slither and wriggle through the world and can survive having parts of their body removed. This groups includes worms and leeches.

Arachnids – A type of invertebrate. Almost all have 8 legs and only two body parts. They have no antennae or wings and they have fine hairs all over their body. This group includes ticks, spiders, mites and harvestmen.

Activity 1:
Grouping game (classification chaos) main groups of invertebrates

Overview
In this activity you will introduce invertebrates, and start to explore their different groups.

You will need
- Invertebrate images or cards – Activity 1 appendix.

Instructions
1. Begin by introducing the children to the definition of invertebrates. Ask if they have heard the word, or encountered any before. Then briefly explain the 5 groups you will be exploring today: Insects, arachnids and molluscs.
2. Look at an image of an example of each group. As a class come up with an action that represents that group. For example when they see a mollusc, they could pretend to be carrying around a big shell.
3. Hold up the different images of insects and have the whole class work together to act out whether it is a mollusc, insect, or arachnid.

Take it further
Have the children justify what group it belongs to. You could even have a class discussion where they decide how to group it.

Activity 2:
Matching Game – Minibeast Body Parts and their Functions

Overview
A matching game where the children try to match up the body part of the invertebrate to the function it provides for the animal.

You will need
- The invertebrate matching cards – see page 10.

Instructions
1. Split the group into pairs and give each pair a set of the invertebrate matching cards.
2. The pair should try and work together to match up the body part with its purpose. After giving them an opportunity to match them, bring the class back together and go through the different parts and their function.
3. Once everyone is aware of the correct pairing, give the children the opportunity to play a round of snap with the matching cards.

Activity 3: Make your own minibeast

Overview

Children design their own minibeast using different features. Use the split pins to create moveable parts for their minibeast. The pieces could be cut out ahead of time, or this could be part of the activity.

At the end of the activity, discuss with the class why they've chosen certain attributes.

You will need

- Scissors (set-up).
- Holepuncher (set-up).
- Split pins/ paper fasteners.
- *** invertebrate parts resource from this document.

Instructions

1. Have the children collect or cut out the different parts they need for their invertebrate.
2. First have the children make a hole at the top of the body and the bottom of the head. Then have the children attach them together using a split pin.
3. Then the children will need to make holes for their legs to attach, before attaching them with a split pin.
4. The children can then decide to add antennae if they want to. To do this they need to add two holes to the head before attaching their antennae with split pins.
5. They can also then add wings if they want. For the wings they will need to add two holes across the middle of the body and add two holes to the inner ends of the wings. They will then need to attach them with split pins.
6. Have the children name their invertebrate and group it as an insect, crustacean, annelid, mollusc or arachnid.

Activity 4: Design a bug hotel

Overview

To support the invertebrates in the area, the children will create their own bug hotel. Bug hotels provide shelter for invertebrates which gives them a greater chance to survive.

You will need

- Used plastic bottles (kids could collect them).
- Leaves, grass, stones, twigs etc from natural spaces.
- Scissors.

Instruction

1. Give each child a plastic bottle. While supervised get them to cut the neck of the plastic bottle using scissors. This creates an opening for the minibeasts to get through.
2. Then have the children fill their hotels with different materials, To make it an effective bug hotel, make sure they are not a lot of gaps, as invertebrates will be able to navigate the tight spaces whereas their predators won't be able to follow.
3. The children can either take their bug hotel home or they can place them around the school grounds.

Take it further

Once the bug hotels have been made and left outside, the children can monitor them, to see if they have any invertebrates move in.

Activity 1: Example insects

Butterfly

Fly

Slug

Crab

Harvestman

Ant

Ladybird

Worm

Spider

Woodlouse

Snail

Beetle

Activity 2: Matching cards

Protects the soft body

Shell

Antennae

Helps the invertebrate feel things, sense the movement of air, detect heat, pick up vibrations (like sounds), smell and even taste things

Jointed body parts that help the animal move around

Legs

Activity 2: Matching cards

Strong body parts that move side to side, to help chew food, carry things, or fight

Mandible

Wings

Help the animal regulate their temperature, communicate, protect themselves, and fly

Sharp body part which injects venom into another animal

Stinger

Activity 2: Matching cards

Made up of hundreds or thousands of tiny individual eye units. Each point in a slightly different direction to help the animal see a very wide area.

Compound Eyes

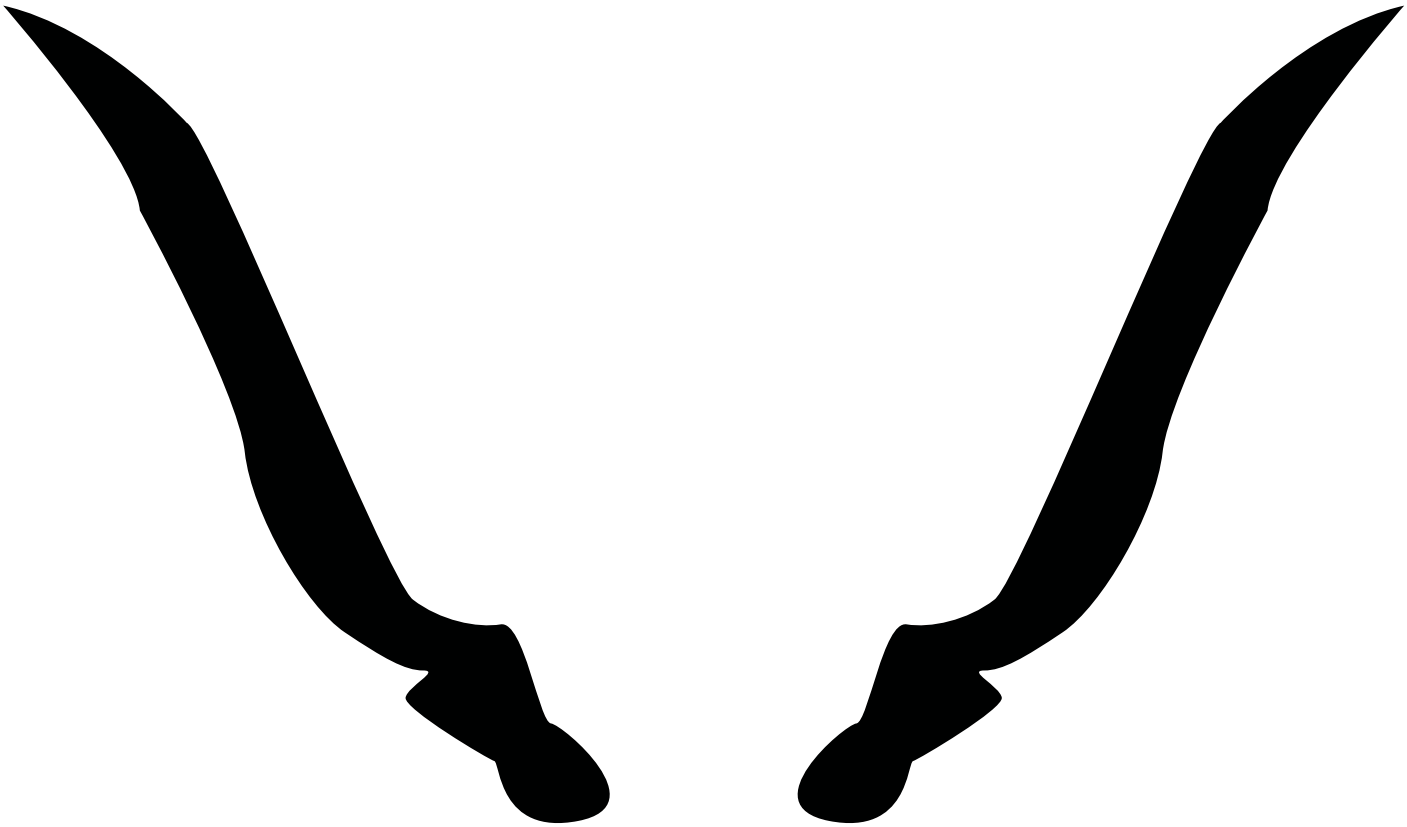
Proboscis

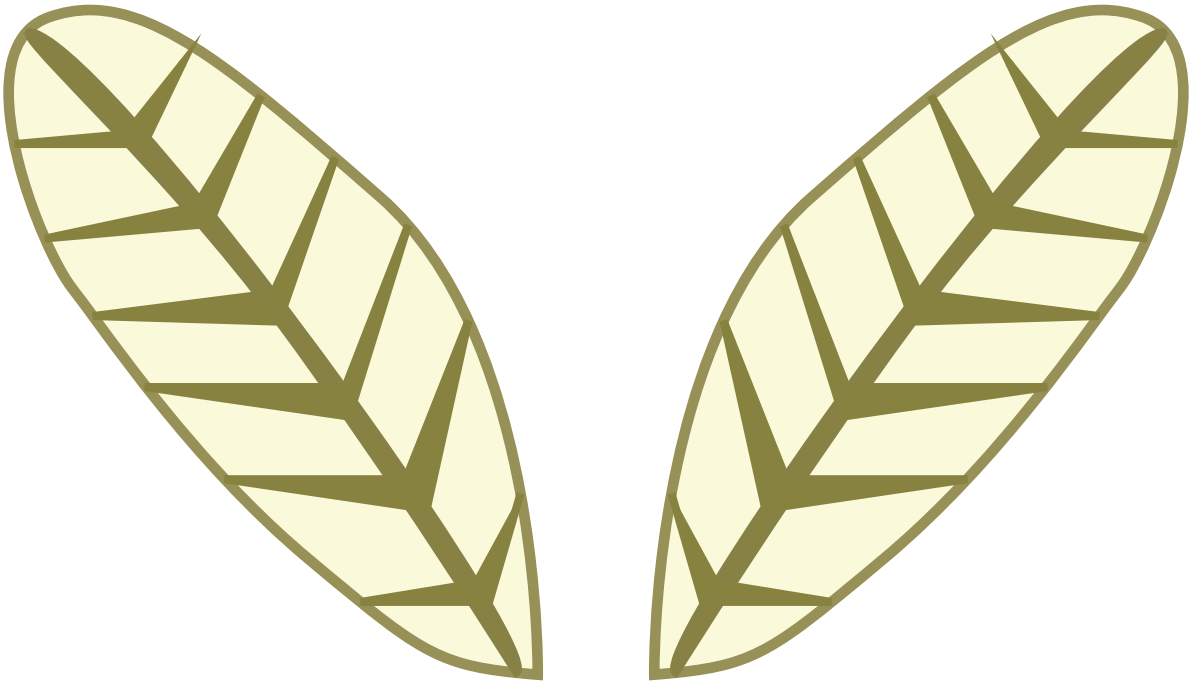
A hard outer skeleton that supports and protects the bodies of many invertebrates.

A special long, straw-like body part which acts like a mouth, and helps the animal feed

Exoskeleton

Activity 3: Invertebrate templates
Heads and Antennae





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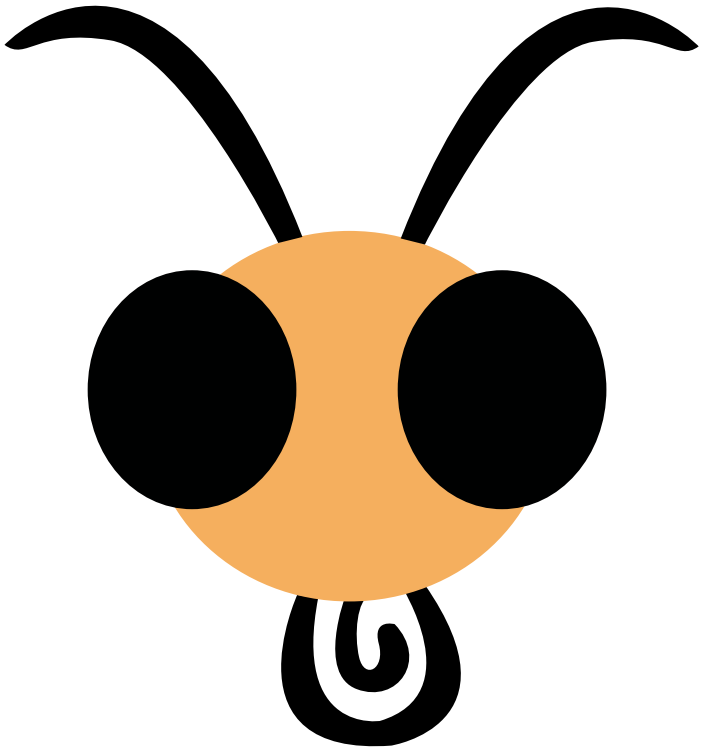

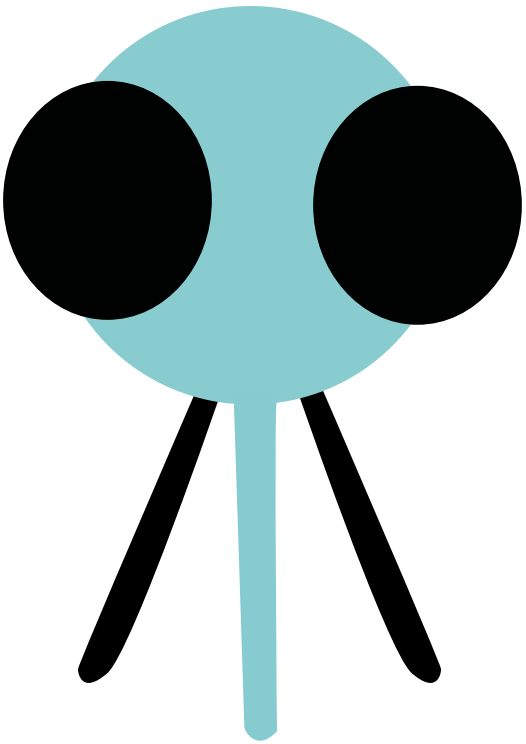

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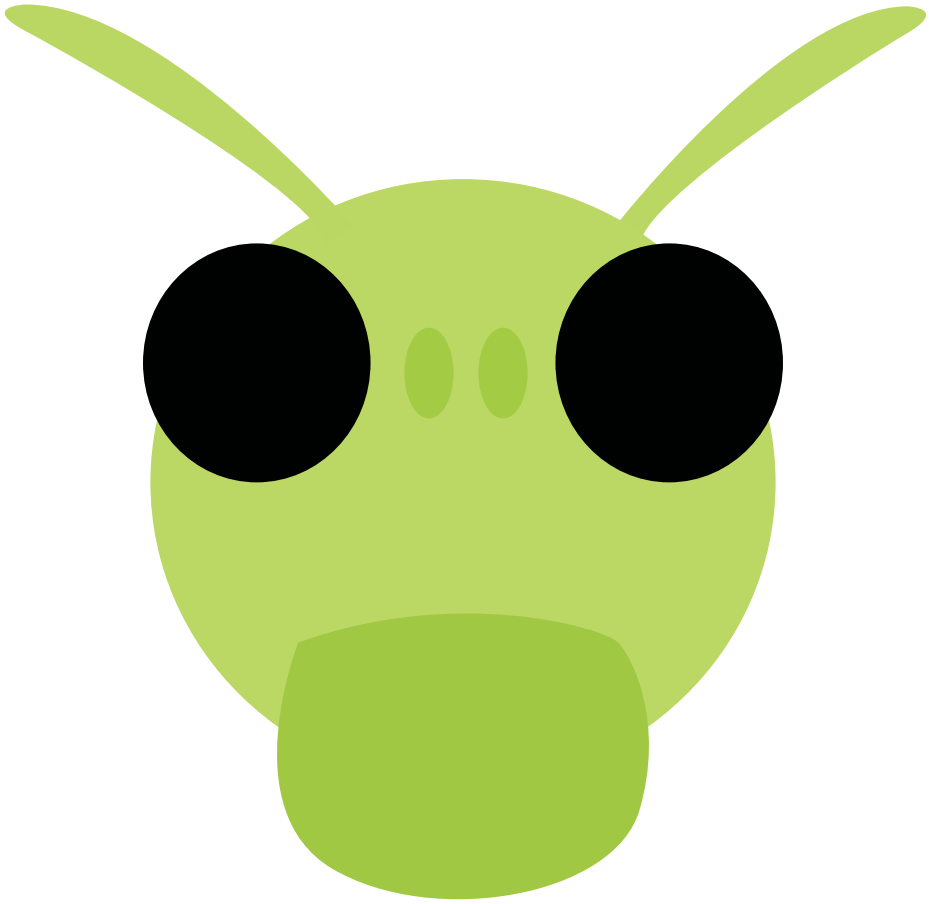

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Heads and Antennae

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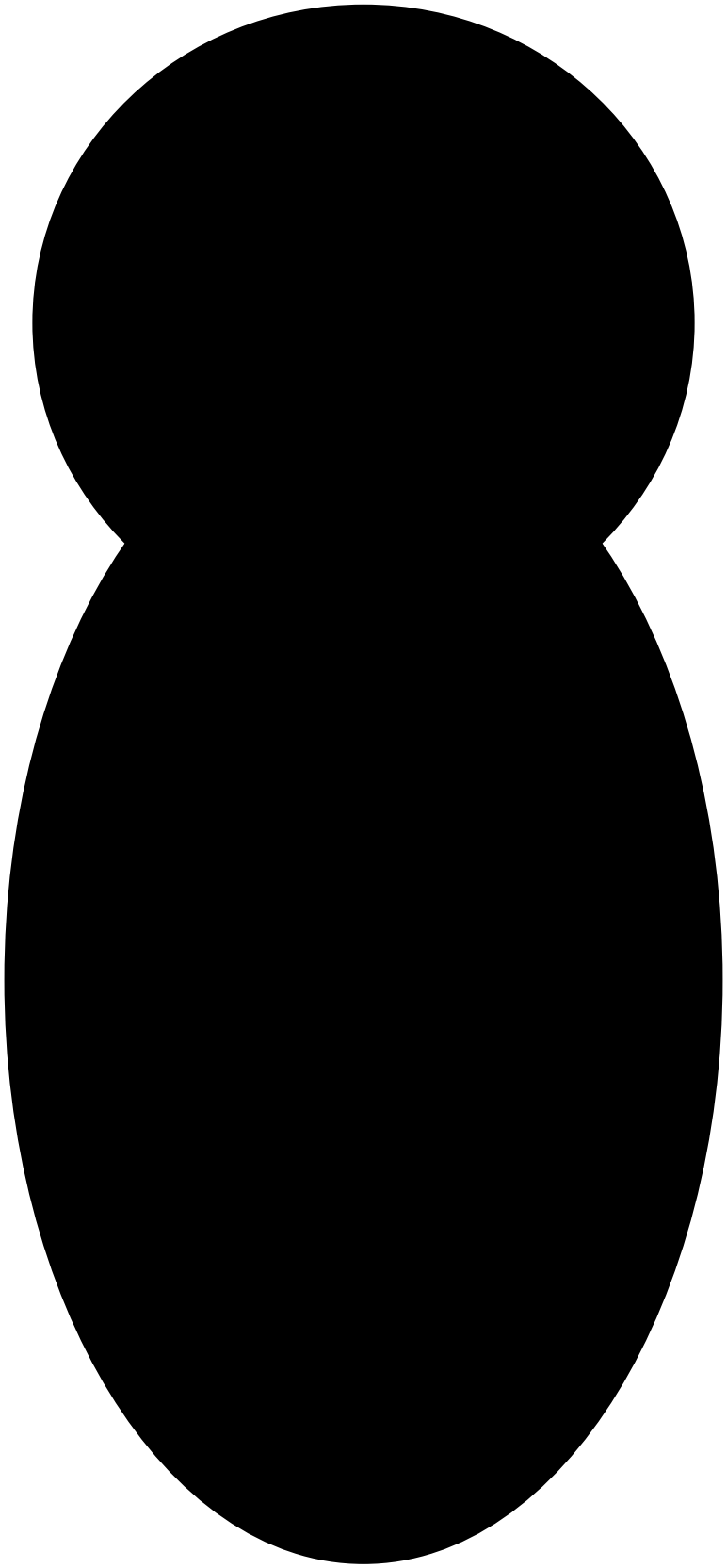
Activity 3: Invertebrate templates
Body



Activity 3: Invertebrate templates
Legs