

Making the most of your visit: MINIBEASTS

MARVELLOUS MINIBEASTS

The words **minibeast**, **invertebrate**, **creepy crawlies** and **bug** are used interchangeably in this leaflet. Please choose the word that best suits the age of your group and the subject you are teaching.

Cat fleas are the champion jumpers of the flea world and can jump up to 33cm in a single leap. This requires an acceleration more than 20 times greater than that needed to launch a space rocket.

A black widow's venom is 15 times more poisonous than a rattlesnake's.

Spider silk is the strongest of all natural and man-made fibres - even stronger than steel.



The most acute animal sense of smell belongs to the male emperor moth which can detect the smell of a female moth at the amazing range of 11km.

One in every five species of animal on Earth is a beetle.








See it. Sense it. Save it

Before your visit

-  Why not take advantage of the **free pre-visit deal** for group leaders. You can familiarise yourself with the Zoo layout, and locate species related to your topic.
-  98% of all the animals on earth are invertebrates; they are found in all parts of the world. Find out about the **different kinds of invertebrates and the habitats they live in**. Use globes, maps and websites to find out more (see back page).
-  Many species of insect pollinate plants - great for plants but also great for people. Without their actions we would lose one third of all the food we eat. Find out about these **insects** and what types of food they help to produce.
-  Invertebrates are an integral part of many food webs. See if you can **construct food webs** for a range of habitats in this country and around the world. Do any invertebrates eat the same food as we do?



In the Zoo

-  Visit **Bug World** and see invertebrates that live in habitats all over the world, from rainforests to deserts, the sea to our homes! Think about how invertebrates differ in design and how these differences help them to survive in their habitats.
-  Check out the new coral display in the **Aquarium**. Not all invertebrates jump, fly or wriggle. Some, such as coral and anemones don't move around very much at all. How do they find their food?
-  Insects are a very important food source for many animals. Watch some of the Zoo residents hunting for live insects including **meerkats** digging in the sand, **squirrel monkeys** snatching insects from the leaves, **poison dart frogs** catching ants with their sticky tongues.
-  See the **Native Species exhibit** near the main entrance; a very rare British insect, the mole cricket, is being bred here at the Zoo. Why do animals such as mole crickets become rare?
-  See the Native Species Exhibit near the main entrance where a very rare British insect, the mole cricket, is being bred in the Zoo to be reintroduced into the wild. Why do these and other insects become rare?

After your visit



Have a discussion about **ecosystems**. Think about the different roles invertebrates play and why they are so important. Use the Partula snail story to illustrate how human activity can upset the balance of nature. (Read in Bug World or on Zoo's website)



Find examples of **symmetry in invertebrates**. Draw pictures, make 2D and 3D models and then use mirrors to test the symmetry.



Make a minibeast motel. A melon or a grapefruit makes a great home for slugs, snails and lots of other bugs. Cut in half, scoop out the insides, make a door in one side, and then place it in a damp place out of the sun. Each morning have a look inside and see how many 'guests' are staying in the motel. How can you tell the difference between species?



Not all invertebrates are helpful to humans and other animals. Find out which species are **parasites and pests**, and which ones spread disease. What are the best (most natural) ways to control these 'offenders'?



Create a nature area at school or in the corner of your garden. Plant flowers, such as Buddleia, honeysuckle and red clover to attract insects, and add stones, rotting logs and a mini-pond.

For more information

- 1) Check out the Zoo's website – we have factsheets on many of the Zoo's species and wildlife-related issues. You can also download this and other leaflets.
www.bristolzoo.org.uk
- 2) Visit the Arkive website, an audio-visual record of life on Earth.
www.arkive.org
www.planetarkive.org
- 3) Set up a minibeast nature garden:
www.teacher.scholastic.com

If you would like to know more about the Education Department and its work please contact us:

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Minibeasts:

Get up close to some extraordinary invertebrates

A chance to meet some truly unusual minibeasts. Spikes, hairs, armour plating, poison, claws: our minibeasts have the lot. You may even have the chance to hold and stroke a rainforest cockroach or a giant beetle larva... or be meet a tarantula from Mexico or a stick insect from Australia. Images of all these invertebrates can be projected onto a giant screen, giving you intimate views of mouthparts, mites and minibeast movement.

You may also be able to feel your way around our collection of minibeast biofacts - invertebrate homes, exoskeletons and preserved specimens.

We offer four sessions for you to choose from:

Minibeasts - investigating the diversity of invertebrate shapes, sizes and habitats.

Minibeast senses and defences - find out how to survive when you're bottom of the food chain.

Munching minibeasts - exploring mouthparts, investigating how feeding strategies change with different diets and working out who eats who.

Minibeasts and me - comparing ourselves to minibeasts - we're more alike than you think!

If you haven't booked an education session this time, but are interested in finding out more, please contact the Education Department on 0117 974 7369, or education@bristolzoo.org.uk