Pack contents

- **Minibeast wallchart and Minibeast fact file**
- **Classification cards:**

1. Mollusca
2. Annelida
3. Arthropoda (Arachnida)
4. Arthropoda (Crustacea)
5. Arthropoda (Insecta)
6. Arthropoda (Myriapoda)

- **Discovery booklet containing:**

Discovery Card 1
- Catch your own minibeast

Discovery Card 2
- "There's no place like home!"

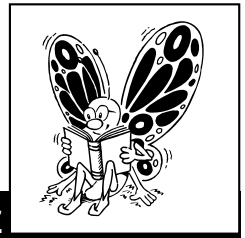
Discovery Card 3
- Classification

Discovery Card 4
- My insect

Discovery Card 5
- Food chains and webs

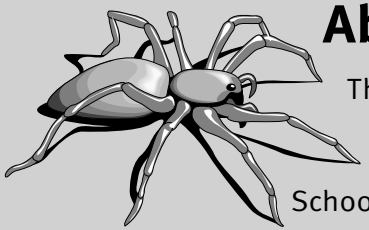
Discovery Card 6
- Looking at life cycles

ICON GUIDE



Children's Worksheets **Teacher Information**

minibeast discovery pack



About this pack

This pack has been created by the Biotechnology and Biological Sciences Research Council with advice from the BBSRC Primary School Consultant and BBSRC supported scientists.

Through the activities suggested in this pack, children can be introduced to the world of invertebrates. Invertebrates are often referred to by primary school teachers as **minibeasts**. The Discovery cards in this pack reflect this trend. It is up to the teacher whether they use the correct term - **invertebrate** from the outset or whether they introduce the correct terminology as teaching progresses.

Yes you can photocopy this pack!

The contents of this pack may be photocopied for use within an educational institution.

Acknowledgements

BBSRC would like to thank all those who contributed to this pack, particularly: Mrs Trish Fenton - Science Coordinator for Wanborough Primary School, Wanborough, Wiltshire; Mr Kieren Pitts - AES Bug Club President; Mr Gordon Ramel - IGER North Wyke and Dr John Bater - IACR Rothamsted. Many of the photographs used in this pack were kindly supplied by Dr Roger Key - English Nature. Photographs were also supplied by Dr Ian Henderson - IACR Rothamsted and Ms Lorraine Lin - Oxford University.

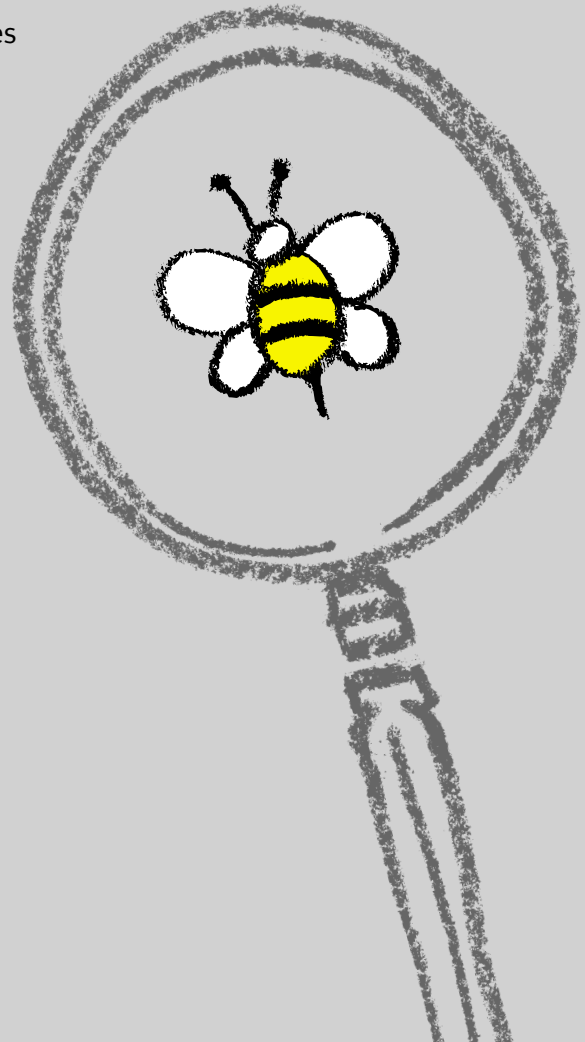
curriculum links

Science activities

- catching minibeasts
- habitat preference investigation using bug boxes
- classification activities
- anatomy of a butterfly (butterfly dot-to-dot)
- life cycles and metamorphosis
- food chains and food webs
- concept mapping

English activities

- speaking and listening - using the large colour wallchart to talk about minibeasts and their environment
- role play
- story telling



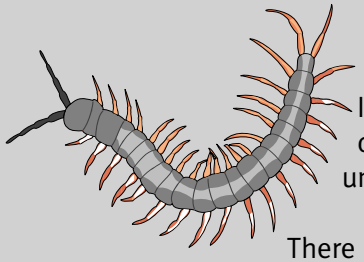
Design and technology activities

- designing/making an insect
- constructing a mobile to show the elements in food chains

Cross curricular themes

- ladybird maths puzzle
- designing and making a bug box
- observational drawing and painting
- thematic study of the school's environment or local area
- orienteering/woodland walks
- minibeast welfare/appreciation of the environment

assessment opportunities



It is possible to select any Discovery Card from the pack and use your own teacher assessment to determine how much the children have obtained from doing the activity. Children can be encouraged to write down three things they know from undertaking the task and younger children can draw a picture to summarise their conclusions.

There are also many ways of introducing the topic of minibeasts to the children. Floor-books can also provide opportunities to discuss and share thoughts and ideas in small groups. They can also serve to provide a record of achievements or ideas suggested by each child and can be referred to throughout the topic.

In this pack there are three specific tasks which provide assessment opportunities.

1. Discovery Card 2, 'There's no place like home!' Teachers can assess children's science process and investigative skills as they; i) devise a fair test to determine the best habitats for their chosen minibeast, ii) make suitable predictions and iii) record and interpret the results they obtain.

2. Discovery Card 4, 'My insect'. This design and technology task requires children to analyse specific characteristics of four given insects and make use of this information to design and make their own insect. Teachers may find it helpful to give children a suitable paper or plastic model or toy insect to study and possibly disassemble.

3. Minibeasts concept map. Concept maps are useful tools for children to express a number of key ideas. They can provide a valuable assessment tool at the beginning, middle or end of the topic. They can also be adapted to suit specific ages and abilities. Children can be presented with a collection of key words associated with their science theme or area of study - they then try to link these words together using their own ideas (for example: 'woodlouse' and 'damp, shady places', the connection might be, 'woodlice make their homes in damp, shady places'). The children can then develop their own ideas and write them on to their map.

Younger children might draw a series of pictures in the style of a flow diagram. This approach is very useful for children who find it difficult to write down all their ideas. Alternatively, they might like to set their concept map out like a brainstorm and either draw or write their ideas.

Concept mapping

1. Draw lines between words that link.
2. Write along the line what the link is.

Soft body

Hard shell

Legs

A centipede has lots of legs

Number of body parts

Butterflies undergo metamorphosis

Centipede

Metamorphosis

Butterfly

Wings

Snail

Aphid

Minibeasts

Feeding

Woodlouse

Worm

Spiders

Worms live in the soil

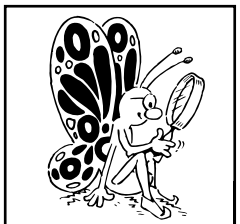
Damp, shady places

Eats small animals including insects

Flowers

Leaves

Soil



Name _____

what is safe to collect?

Almost every UK invertebrate is 'safe' to collect - if it is collected in the correct way. There are however a number of organisms which are capable of biting, stinging or causing irritation and these are listed below:

- Bees and wasps
- Ants
- Dragon flies and dragonfly larvae
- Caterpillars which have long hairs can cause irritation e.g. Garden tiger moth.
- Greater water boatmen
- Locusts
- Ladybirds (which have small poison glands on their knees)
- Some species of spider
- Some species of centipede

Advice

The best solution is, where possible, to study the invertebrate in situ (in its natural environment). This also has benefits for the invertebrates many of which are fragile and may become stressed with prolonged handling. If invertebrates are collected and removed from their natural environment for short periods of study, it is important that children understand that the animals must be returned to their place of origin as soon as possible and that the animals habitat should be left as it was found (stones should be put back after being overturned and so on).

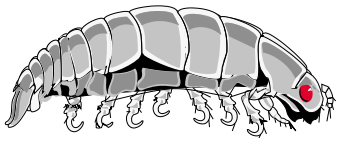
If invertebrates are kept overnight (which is the absolute maximum amount of time they should be kept) it is important that they are held in a secure, moist, (but not wet) environment and that food is provided if available.

The ASE 'Be Safe!' booklet which covers aspects of safety in school science and technology for key stages 1 and 2 lists the following invertebrates as being **suitable** for study:

- Earthworms
- Slugs and snails
- Woodlice
- Land crabs
- Indian stick insects, Pink winged stick insects, Australian spiny stick insects
- Meal worm beetles
- Chafer beetles
- Brine shrimps
- Some butterfly and moth larvae where their food is available (but not those which are hairy)

The safety booklet also gives the following advice:

- Before keeping any animal, consult a reliable reference book such as those produced by the RSPCA.
- Obtain animals from reputable suppliers.
- Teach children to wash their hands before and after handling animals.
- Consider the safety and the well-being of the animals and teach the children to handle them with due care.
- Keep housing clean and disinfect cages at regular intervals.
- Do not allow animals to wander freely on floors or tables unless these are cleaned immediately afterwards.



For further information on insects, advice on suitable species to study, study activities and so on contact:
The AES Bug Club, PO Box 8774, London SW7 5ZG.