

Marvellous Mini-beasts

Background info for teachers



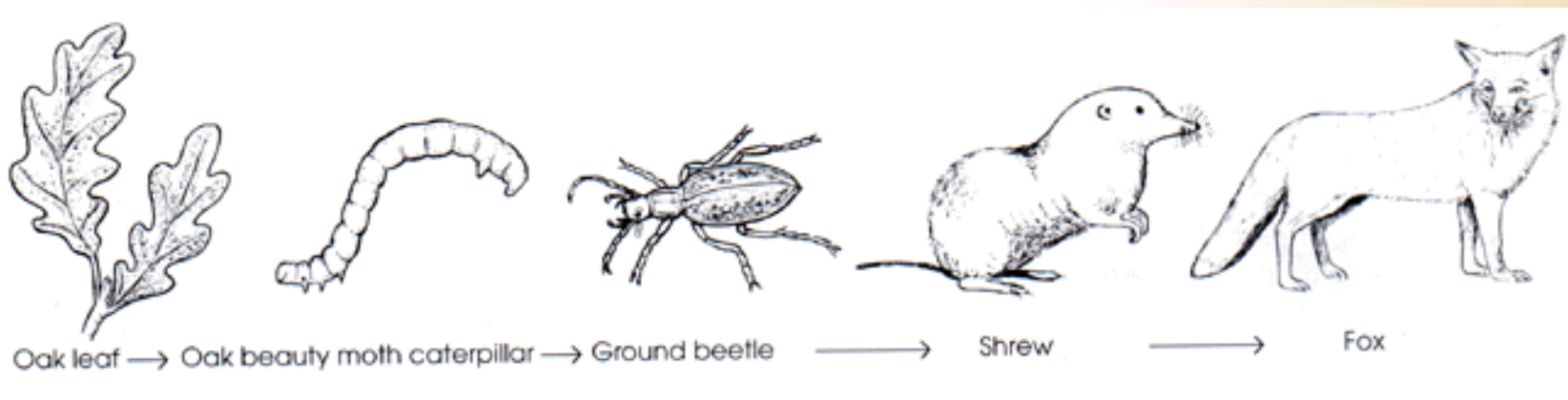
Introduction to Minibeasts

- Minibeasts are Invertebrates
- Invertebrates have no backbone.
- Around 95% of all animal species are invertebrates
- Huge diversity of Invertebrates on Earth



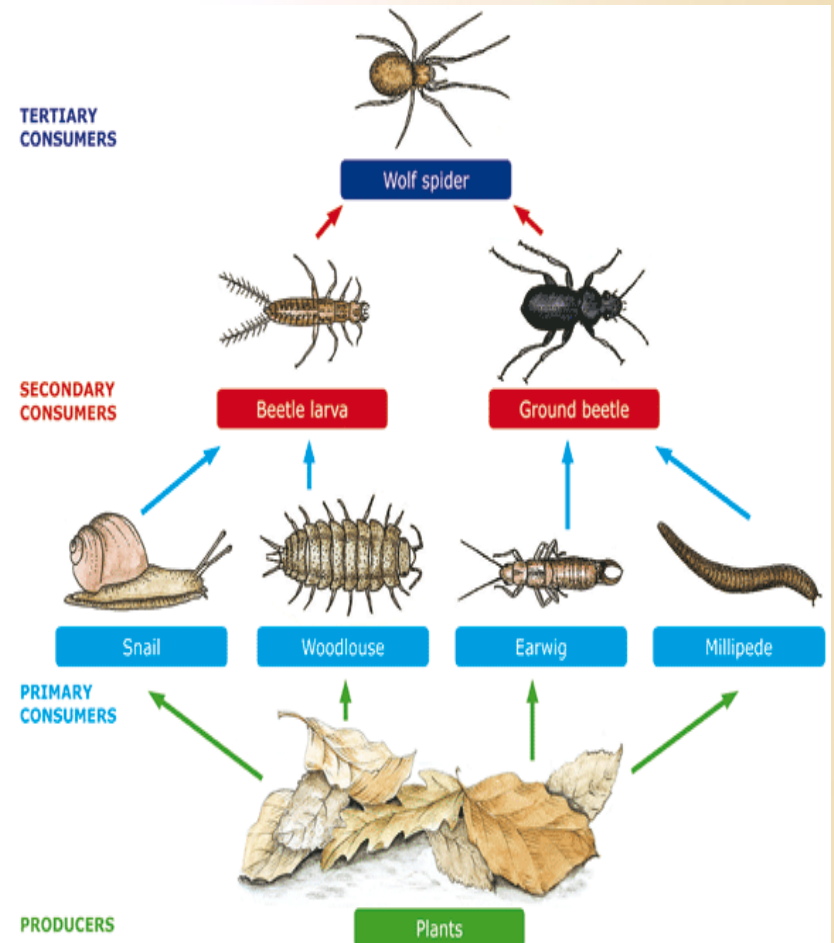
Importance of Minibeasts

- Minibeasts as food
 - Minibeasts form the base of many food chains



Food chain terminology

- Producer: plants convert energy from the sun
- Consumers: primary, secondary, tertiary
 - Herbivore: eats plants
 - Carnivore: eats other animals
 - Detritivore: eats dead plants and animals
 - Omnivore: eats plants and animals
- Note: this may depend on life cycle stage



Minibeasts as Recyclers

- Many of the minibeasts are classed as decomposers.
- As well as feeding on dead leaves, some of them also eat dead trees and the droppings and dead bodies of animals.
- This releases nutrients into the soil. The plants soon absorb these nutrients, and so the cycle continues.

Minibeasts as pollinators

- Many minibeasts (particularly insects) are important as pollinators
- It is almost impossible to over-emphasise the importance of pollinators to us.
- 1 in every 3 mouthfuls of food we eat relies on pollination.
- Pollinating insects include honey bees, bumblebees, solitary bees, flies, butterflies, moths and beetles.
- Without these insects pollinating plants we would not have:
 - Fruit (apple, pear, cherry, strawberry, blueberry, plums, grape etc)
 - Lots of vegetables (pumpkin, tomato, cucumber, carrot, peas etc)
 - Other foods like chocolate, nuts, olives
 - Most flowers
- Pollinators are very important, and need us to care for them!

Why teach about minibeasts?

- What knowledge can children gain from mini-beast handling ?
 - The variety of life – simple classification.
 - Food chains - herbivores, detritivores, carnivores. Recycling in nature.
 - Life cycles (both of the minibeasts themselves, and the plants they pollinate)
 - Adaptations - physical and behavioural (different minibeasts are adapted to different habitats)

- What skills can children gain from mini-beast handling ?
 - Observation skills.
 - Respect for living things, natural cycles and environment.
 - Duty of care for live animals.

Woodlice

- These detritivores are useful in the environment as they recycle dead leaves.
- They are crustaceans and are related to crabs and lobsters but physically and behaviourally adapted for life on land.
- To preserve water they are only active if conditions are damp and/or at night.
- Woodlice are even found in deserts where they live in burrows.
- They have 7 pairs of legs.
- There are 35 species of woodlice in Britain (more than 3000 worldwide!)



Snails

- Snails are herbivores as they eat plants. They are an important food source for birds and mammals.
- They tend to be nocturnal and have a well developed homing instinct.
- Their two eyes are on the long stalks above their feelers.
- You should be able to see their breathing pore under the right edge of their shell.
- The muscles of the snails foot ripple as it moves and it secretes mucus to reduce friction on dry surfaces.
- There are about 150 species of snails and slugs in Britain.



Worms

- These invertebrates are nature's recyclers – they feed on decaying matter in the soil and bring minerals to the surface. The tunnels they make help water to drain and allow air into the soil.
- The dark end is the head end and you can see its gut spiralling down towards its tail
- If you stroke the worm under its head you will be able to feel the little hairs that help the worm move through the soil.
- There are 27 species of earthworm in Britain



Bees

- Three kinds of bees live in Scotland :
- Solitary bees (includes mason bees)
- Bumblebees which live in small colonies of 50 - 200
- Honeybees which live in large colonies with over 100,000 workers (+ 60,000 larvae) and drones

- All are good pollinators. Bumblebees especially so, because they are very hairy, buzz and are active for a long season.
- Bees have a long proboscis (mouthpart) which is ideally adapted to reach the nectar in flowers.



Mason Bee



Bumblebee



Honey Bee

Introduction to outdoor session

Woodland habitats

- Broad leaved, coniferous and mixed woodland
- Native Atlantic oak, Caledonian pine, ash or birch woods
- Integral areas of grasslands, shrubs (hedges and walls)



Minibeast habitats within woodlands

- Under logs
- Leaf litter
- In the grass
- On a flower
- On a tree
- In the air



Different ways to sample minibeasts

- Direct observation
- Scavenger hunt
 - Collecting in boxes + spoon
 - No slugs or snails – slime!
 - One species per box – food chains
 - Return to habitat
- Nets
- Beating

Lots of factors will affect what you find!

- Seasonality – some minibeasts are only around at certain times of year
- Temperature
- Light levels
- Surrounding habitat
- Cover
- Leaf fall
- Forest floor

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with greater knowledge
and learning*