

## 8D1 Identifying animals and plants

In any habitat, you are likely to find many different species of plants and animals. Many of the animals will be **invertebrates**, of which the **arthropods**, **molluscs** and **segmented worms** will be most common.

### Animals

- Many animals are **herbivores**.
- Many are **decomposers** that feed on dead plant and animal material. They break up leaves and recycle nutrients.
- There are also **predators** that prey on the decomposers.

### CHECKPOINT

Check the meanings of:

Invertebrates: \_\_\_\_\_

Herbivores: \_\_\_\_\_

Predators: \_\_\_\_\_

Decomposers: \_\_\_\_\_

Arthropods: \_\_\_\_\_

Molluscs: \_\_\_\_\_

Flowering plants: \_\_\_\_\_

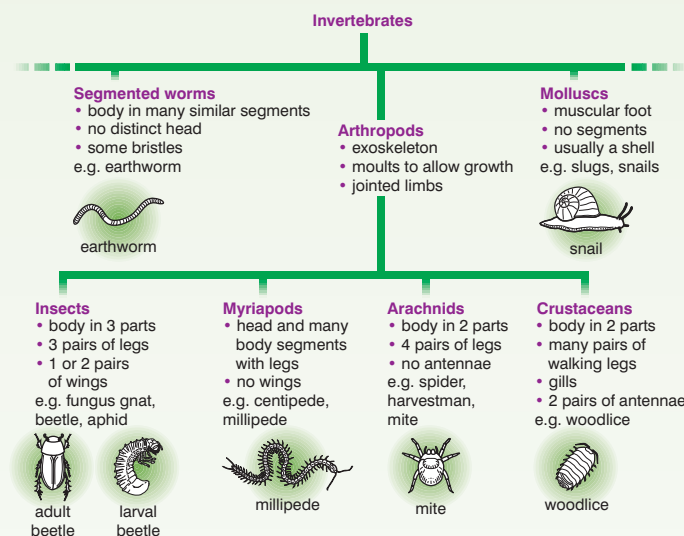
### Plants

Most plants are **flowering plants**, which are divided into two groups:

- Grassy**
- Broadleaved.**

### Arthropods

Arthropods have segmented bodies, a hard outer skeleton, jointed legs; many change their shape as they grow.



## 8D2 Sampling animals

Finding out about the **populations** of animals that live in a habitat needs a bit of ingenuity, since they move about:

- Large animals can be observed, recorded on camera, or caught in traps that do not harm them.
- Small animals can be caught in a **pitfall trap**, or shaken out of trees and bushes and collected in nets.



- To find the number and variety of small animals living on the ground we choose a small area, say 30 cm by 30 cm. The top 10 cm of leaf litter and soil can be removed and taken to the laboratory for investigation. Small brushes and pooters are used to move animals.
- When animals have been identified, large animals can be weighed and measured and small animals counted to find their **abundance**.

### CHECKPOINT

Write out a plan for investigating a habitat.

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Make a list of all the equipment you will need, and how you will record the population of the habitat.

## 8D3 Sampling plants

To find the **distribution** of plants in an area, we could record every plant and where it is growing. It is much simpler to take a **sample**. The sample can be from a small area, chosen at **random**.

A random sample area can be chosen by throwing an object over a shoulder and seeing where it lands, or by dividing up the large area into a grid and choosing a point in the grid using numbers such as birthdays or telephone numbers.

The points that are picked are the centre of the area to be investigated.

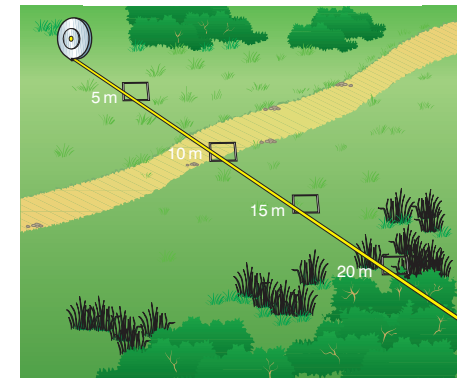
A **quadrat** is a square frame, usually 0.5 m by 0.5 m. They are placed over the random point.

All the plants within the quadrat are identified, counted and the area they cover **estimated**. The **percentage cover** can be worked out. The conditions (temperature, light intensity, moisture) are measured for each quadrat.

A **transect** is a long straight line across an area, and may cover a number of different habitats. Samples can be taken using quadrats at regular points along the line.

### CHECKPOINT

- Why are random samples taken?
- Why should quadrats all have the same area?



- What does sampling a transect show?

## 8D4 Food webs

Animals usually eat more than one type of food. **Food webs** show the relationships between animals and plants in a habitat:

- At the base are the **producers**, which are plants.
- Above are **levels of consumers**.
- First are the **primary consumers**, i.e. the **herbivores** that eat plants.
- Above them are the **carnivores** that are **predators**.

The animals on each level **compete** with each other for sources of food.

**Decomposers** feed at all levels because they eat the dead remains and waste of animals, but they are mainly primary consumers because their main food is bits of dead plant.

### Changes in the web

Changes to a habitat can alter the relationships in a food web and increase competition. Changes in farming methods mean that hedgerows are dug up, or cut down, and fields extended. With fewer flowers providing nectar for insects, there will be less food for birds. Species that depend on one type of plant may disappear completely.

### Alien species

'Alien species' are plants and animals introduced into a habitat from other places, sometimes by gardeners, as pets, or by international trade. Alien species compete with native species. Alien plants may not provide food for native animals. Native species often become endangered.



Threatened by 'alien' plants and animals?

### CHECKPOINT

Sketch the levels of a simple food web, showing where decomposers feed.