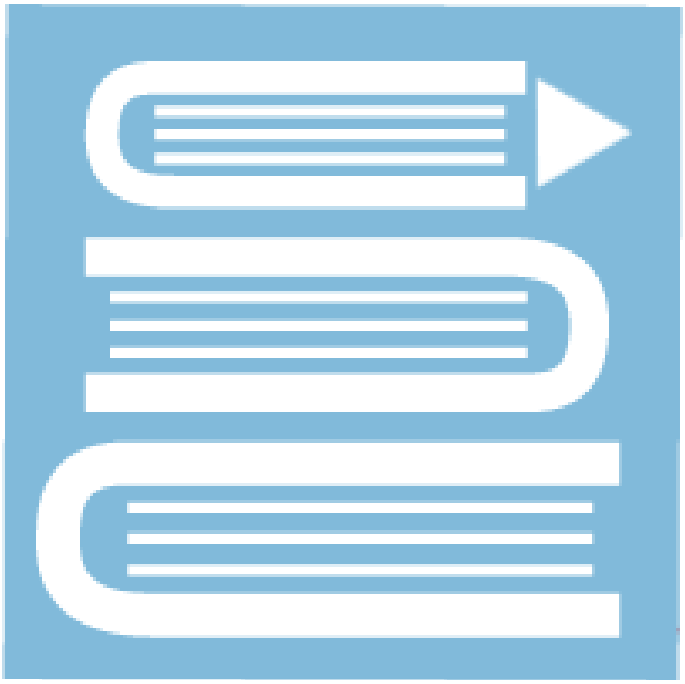
JC-Learn

Science Notes
Habitat Study



Habitat Study

Steps in studying a habitat:

1. Make map of habitat to illustrate main features of the area, eg. trees, shrubs etc.
2. Make a note of environmental factors affecting the habitat.
3. Identify and list the types of plants and animals present.
4. Estimate the number and distribution of the organisms in the habitat.
5. Prepare report on findings.

Environmental factors affecting habitat:

- Factors relating to soil: soil type, soil pH, moisture content. The type of soil present will determine the type of plant and animal that can live in the habitat.
- Weather factors: These include light intensity, rainfall, temperature and wind.
- Physical factors: These include the direction the habitat faces, height above sea level, gradient of ground.
- Biotic factors: These are the living factors such as those caused by competition between plants and animal.

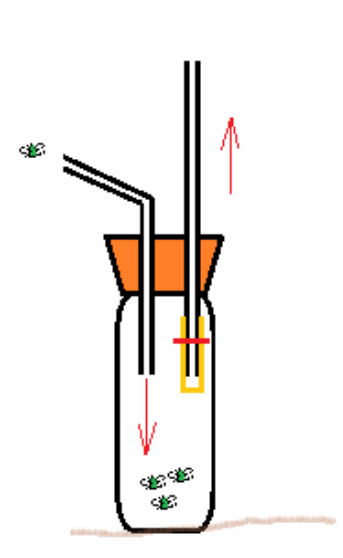
Collecting and identifying plants and animals

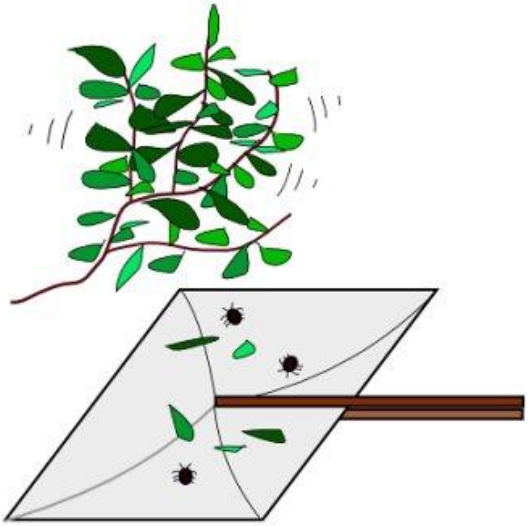
Plants – Do not move around so it is easy to see which ones are present. We can use a key to identify plants.

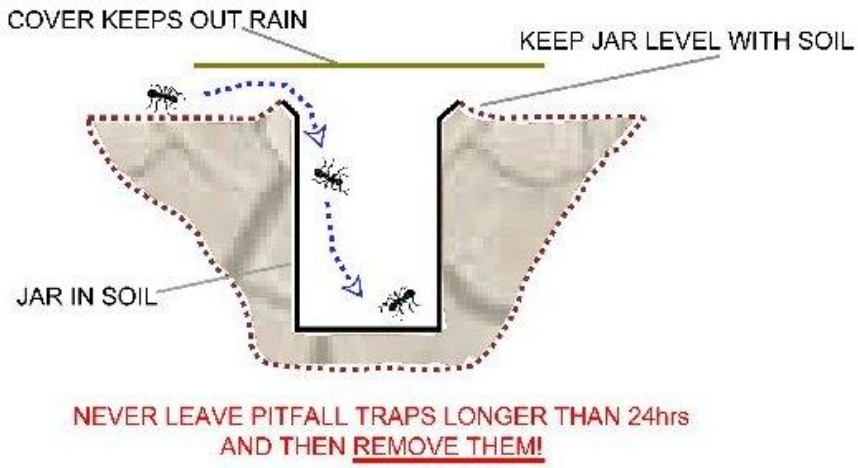
Animals – Three pieces of apparatus used for collecting animals are a pooter, beating tray and a pitfall trap.

Apparatus	How It Is Used	Used To Collect
Pooter	Tube put over organism and you suck through it with gauze (so you don't swallow organism)	Small insects and spiders
Beating tray	Tray held under shrub, branches beaten with stick to	Insects and small animals that live on tree leaves

	dislodge animals.	
Pitfall trap	Jar sunk into ground till top is level with soil. A flat stone supported by small stones forms lid (prevents rain entering).	Animals (ground beetle) that walk on surface



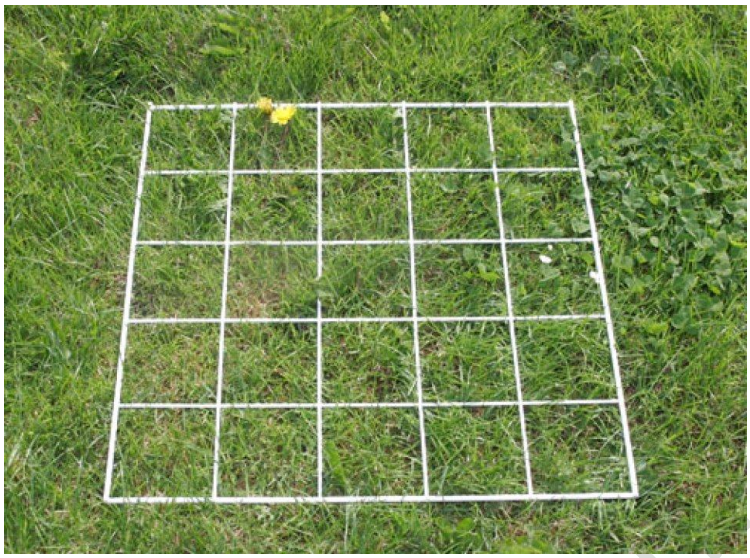




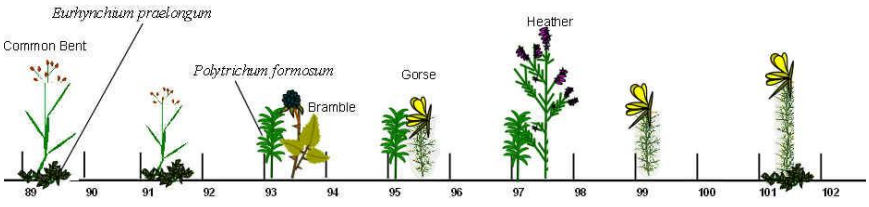
Estimating number of organisms in habitat

We take a random sample to give us an idea of the overall numbers. Two methods of sampling are to use a quadrat and a line transect.

Quadrat: Square frame used to estimate plant numbers, which is thrown at random in the habitat.



Line transect: Rope marked out at regular intervals across a habitat. It is used to investigate the distribution of organisms. The types of plant or animal found touching each station are recorded.



Mandatory Experiment

* (a) To study a local habitat

Method

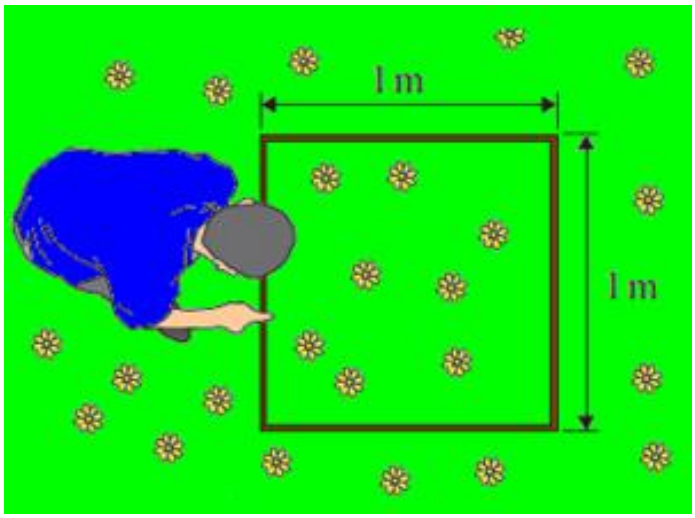
1. Make map of habitat.
2. Record environmental factors affecting habitat.
3. Collect and identify plants and animals in habitat.
4. Use quadrat to examine variety of organism present.
5. Use line transect to investigate distribution of organisms across habitat.
6. Use the information to find examples of food chains, food webs, competition, adaptation and interdependence in the habitat.

*(b) To show the variety of plants in habitat using a quadrat.

Apparatus required: quadrat, pen, recording sheet, and plant key

Method

1. Throw pencil over shoulder at random
2. Place quadrat where it lands
3. Record plant types inside quadrat boundary
4. The quadrat should be thrown ten times to get accurate results
5. Use information gathered to calculate percentage frequency of particular plant
6. Use results to draw bar chart, to make your results easier to understand



* (c) To investigate the distribution of plants using line transect.

Apparatus required: length of rope marked off at intervals, recording sheet, pen, plant identification book and key

Method

1. Lay marked rope across area of change in the habitat. Mark this line on your map of the habitat.
2. Record name of any plant which touches/ is under the rope at each station.