

WJEC Wales Biology GCSE

SP2.1: Field investigation

Practical notes



Field investigation

Aim

Investigation into factors affecting the abundance and distribution of a species

Equipment

- Frame quadrat (1m by 1m)
- 20 m tape measures
- Clipboard
- Pen
- Paper

Method

1. Set up 2 tape measures at right angles along the edge of the site to be investigated.
2. Roll 2 20-sided dice to obtain 2 numbers, which are to be used as coordinates to find a location on the 2 tape measures set up.
3. Set down the quadrat at the coordinates.
4. Count and record the number of the required plant species (eg. daisies) in the quadrat.
5. Repeat steps 1-3 to take at least 24 more samples.
6. Estimate the population size using this formula:
$$\text{total area} / \text{area of quadrat} \times \text{mean number of individuals in a quadrat}$$
7. Repeat steps 1-6 at a different time of the year, or at another site with a different environmental factor (eg. mown vs unmown land).

Controlled variables

- Size of quadrat
- Number of samples taken at a site
- Coordinate system

Risk assessment

Certain plants may cause allergic reaction or cuts, wear gloves when handling and wash hands after.

