



Are all woods the same?

Key Stage 3 Science

Teachers' notes

This unit of work is based on **QCA Science Unit 8D 'Ecological Relationships'** It leads into 'Tree of Life', based on the same unit.

Learning Objectives Covered by this Work

- ☉ Know that animals can be divided into vertebrates and invertebrates and these groups can be further subdivided.
- ☉ Know that plants can be subdivided into those with vascular tissues and leaves with a waterproof cuticle, and those without.
- ☉ Know that different habitats support different living things and that organisms only survive in a habitat where they have all the essentials for life and reproduction.
- ☉ Know that organisms show adaptations to environmental conditions in order to ensure the survival of the species.
- ☉ Use ICT to measure, record and describe environmental factors.
- ☉ Record the organisms comprising the living community in a habitat, working safely with and showing sensitivity to living things in their environment.

Before the Visit

Revise the ways in which animals can be divided into vertebrates and invertebrates, and in which these can be subdivided into groups. Consider examples of each of these, concentrating on those found in local woods.

Examine a range of green plants, showing how these can be subdivided into those with and without waterproofing layers. Use this and reproductive features to group the plants into mosses and liverworts, ferns, conifers and flowering plants (which might be divided into monocotyledons and dicotyledons).

In the Woodland

Choose two contrasting areas, such as:

- ☉ An area with large old trees and one with densely packed younger trees.
- ☉ Areas dominated by different trees e.g. conifers and broadleaves, oak and beech.
- ☉ A glade or recently felled area and an area of dense woodland.
- ☉ A dry area and a streamside.
- ☉ The centre of the wood and a wood edge.
- ☉ A wooded area and an open space.

In each of the areas, use dataloggers or other methods to collect environmental data e.g. light, temperature, windspeed, soil pH, soil moisture content and percentage canopy cover.

Use keys, field guides, pooters, etc to record the presence or absence of each of the animal and plant groups defined previously in the classroom. It is not necessary to record at species level. Record using two copies of the pupil sheet, one for each area.

Follow-up Work

Search secondary sources for information about the animals and plants found, including the ways in which these are adapted to the environmental conditions recorded.

Ask groups to produce a report, including graphs, about ways in which the two environments are different, as either a wall display or an OHT or PowerPoint presentation. Encourage them to make associations between the presence or absence of each of the plant and animal groups and the environmental conditions. For example, 'What difference is there between places in which plants without waterproof cuticles are found and those in which they are not?' If possible, compare results with those from a previous year.



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Pupil sheet

Description of area e.g. woodland edge,
area of dense young trees

Light level at 1m above ground

Air temp. at 1m above ground

Soil temperature

Windspeed

Soil pH

Percentage tree canopy cover

Fungi & lichens

Non-flowering plants e.g. mosses,
liverworts, ferns

Trees and shrubs

Other flowering plants

Invertebrates e.g. slugs & snails, worms,
ants, beetles, earwigs, spiders, woodlice,
centipedes & millipedes, butterflies and
moths, flies, bees & wasps

Vertebrates e.g. birds, mammals

