



# Woodland Climates

## Key Stage 3 Geography Teachers' notes

This unit investigates the way in which the climate of the local area encourages the development of broadleaved woodland and the way in which woodland affects the climate within.

### Learning Objectives Covered by this Work

- ☉ Carry out fieldwork investigations outside the classroom.
- ☉ Collect, record and analyse statistical evidence.
- ☉ Use a range of geographical skills and resources such as maps and ICT.
- ☉ Select and use appropriate fieldwork techniques and instruments.
- ☉ Use and draw maps and plans.
- ☉ Use secondary sources of evidence, including aerial photographs.
- ☉ Identify, describe and explain patterns of physical features and relate these to the character of places and environments.
- ☉ Investigate how and why aspects of weather and climate vary from place to place.
- ☉ Know the components and links in the water cycle.
- ☉ Understand how physical and human processes influence vegetation, including the characteristics and distribution of one major biome and how the ecosystems of this biome are related to climate.

### Before the Visit

Examine statistics on the local climate, in particular temperature and rainfall. These can be obtained from Weston Park Museum in Sheffield.

Consider why the local climate encourages the development of broadleaved woodland i.e. relatively high rainfall, variation between summer and winter temperatures.

Using the base map, aerial photograph and access and vegetation maps from part 1 of this pack, decide on four points within the woodland and one point in an adjacent area of open ground. Aim to include a variety of different woodland types as well as at least one clearing.

Predict the ways in which the trees and other aspects of the site might affect the climatic conditions within the woodland.

### In the Woodland

Visit the five predetermined points and at each point, record:

- ☉ direction and angle of slope
- ☉ light levels using a light meter or ICT monitoring equipment
- ☉ air and ground temperature using a thermometer or ICT monitoring probe
- ☉ humidity using a whirling hygrometer
- ☉ windspeed using an anemometer

At each point, set up rainfall meters and collect after one week. How much does the rainwater collected vary between the different areas?

At each point, estimate percentage canopy cover and tree height and make notes on the character of the site.

### Follow-up Work

Analyse the climatic data collected in the wood and represent using graphs or by mapping.

Relate each variable to the others e.g. to what extent are temperature and light levels related?

To what extent are the changes recorded accounted for by;

- ☉ short term changes in the weather?
- ☉ changes in aspect of the site?
- ☉ the tree canopy?

How will the effect of the trees on climatic conditions within the woodland vary over the course of a year?

Consider the role of woodlands in the water cycle, for example in reducing run-off and increasing transpiration. What implications might this have for the control of flooding?



## Key Stage 3 Geography

### Pupil sheet

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Visit the four woodland sites and one on an adjacent area of open ground and record the following data.

	Site 1	Site 2	Site 3	Site 4	Site 5
Description of site					
Direction of slope					
Angle of slope					
Dominant tree species					
Percentage canopy cover					
Estimated canopy height (metres)					
Light level at 1 metre above ground					
Air temperature (°C) at 1 metre above ground					
Soil temperature (°C)					
Humidity at 1 metre above ground					
Windspeed at 1 metre above ground					
Rainfall collected after one week (cm)					

