

Woodland Planning for Sustainability

Suitable for KS3 students, March to November

This programme is designed to explore the importance of our trees, woodlands and forests for people, wildlife and global ecosystems. Using the arboretum as a focus, students will gather observations about organisms found at different ecological layers, assess the impact of a range of human activities on the environment and design a sustainable woodland for the future.



Key Concepts

Sustainability, forest management, conservation, ecosystem services, tourism

Learning Outcomes

By the end of the programme, students should be able to:

- Name a selection of economic activities associated with trees, woodland and forests
- Explain the importance of trees, woodland and forests to wildlife and global ecosystems
- Understand how human activities can impact on the natural environment
- Understand a range of techniques involved in the sustainable management of the arboretum
- Suggest ways to manage woodlands sustainably and justify their choices

Before you come

What do trees provide for people, wildlife and global ecosystems?

Discuss the statement 'Cutting down trees is always bad'.

Programme Outline

Learning Objectives	Activity
<ul style="list-style-type: none"> • To assess students' knowledge about the importance of trees • To introduce a variety of management techniques 	<p>Woodland wonders <i>An introduction that considers the importance of our trees, woodland and forests</i></p> <p>Whole class discussion about the importance of trees for people, wildlife and global ecosystems, and the need for sustainable woodland management. Different management techniques will be introduced such as mixed species, monocultures, clear felling cycles, selective harvesting and forest gardens.</p>
<ul style="list-style-type: none"> • To identify different organisms within a woodland ecosystem • To consider the importance of each ecological layer to a range of wildlife • To suggest the wildlife value of different types of woodland 	<p>Westonbirt's wildlife</p> <p>In small groups, students explore different ecological layers for signs of the wildlife that depend on it for shelter and food, before discussing the wildlife value of different types of woodland and forests, age structure and species composition.</p>

<ul style="list-style-type: none"> To assess the impact of human activity on the natural environment at Westonbirt To suggest ways to manage these activities sustainably 	<p>Ecological impacts</p> <p>Assessing the ecological impacts of different activities and visitors to Westonbirt. What does this mean for the management of the arboretum? What are the links between Westonbirt /Forestry Commission visitors and sustainability?</p>
<ul style="list-style-type: none"> To discuss a range of management techniques used at the arboretum 	<p>Sustainability search</p> <p>Individually, students are invited to search for objects, and then consider how each is linked to sustainable woodland management. Items may include tree labels, cages, bark mulch, old shotgun cartridges, mower teeth, teeth from stump grinder etc.</p>
<ul style="list-style-type: none"> To design a sustainable woodland To explain how the woodland is sustainable, stating the main focus for the design 	<p>Woodland design</p> <p>In small groups students are invited to design a sustainable woodland, making a model from the natural objects around them. They will need to choose one or more focuses (people, wildlife, timber), select an appropriate management technique and show how their woodland will be sustainable.</p>

Self-guided trails

To complement this half-day programme, we recommend our 'The Value of Trees' challenge. This can be downloaded from www.forestry.gov.uk/westonbirt-education

National Curriculum links

Human geography

- economic activity in the primary sector and the use of natural resources
- understand how human and physical processes interact to influence, and change landscapes, environments and the climate
- how human activity relies on effective functioning of natural systems

Science – relationships in an ecosystem

- the interdependence of organisms in an ecosystem
- how organisms affect and are affected by their environment