

## Forests for the Future – Climate Change

Suitable for KS3 students, March to November

This programme is specially designed for KS3 students to explore the global issues of climate change and sustainable development, with a focus on the role trees and forests can play. It encourages the students to consider a range of forest management choices and the impact these may have before suggesting positive action that they and other people can take.



### Key Concepts

Sustainable development, climate change, citizenship and positive action, photosynthesis

### Learning outcomes

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

- Understand that climate change is a natural process but that the rate at which it is changing now is faster than normal
- Understand the rising levels of greenhouse gases in the atmosphere, such as carbon dioxide, contribute to climate change
- Recognise that growing trees is one way of removing some of the carbon dioxide from the atmosphere
- Explain the process of photosynthesis and how this results in carbon being stored in the wood
- Identify the impacts of different forest management techniques
- Suggest ways in which people can help both locally and globally

### Programme activities

Learning objectives	Activity
To introduce the concept of climate change To assess students prior knowledge	<b>Introduction</b> What is climate change? What will climate change look like? How may climate change affect plant and animal communities, and us?
To introduce trees as one way of removing carbon dioxide from the atmosphere To explore the process of carbon capture and storage	<b>Photosynthesis Game</b> An interactive role-play activity that helps students to explore the process of photosynthesis. Includes exploring the production of $C_6H_{12}O_6$ Introduces the concept of trees as a carbon store.

<p>To discuss the global importance of sustainable forestry</p> <p>To be aware of positive action that people can take</p>	<p><b><i>Tree Product Search</i></b></p> <p>In pairs, armed with a map, students search the tree collection for a variety of products and the trees that they are made from before discussing the items they find. This activity explores the concept of sustainable forest management, FSC accredited products, the benefits of wood products, the importance of wood fuel and the impacts of monoculture. It presents students with choices and action they can take to help.</p>
<p>To explain how sustainable forestry can also help combat climate change</p> <p>To assess students learning during the day</p>	<p><b><i>Forests for the future</i></b></p> <p>A conclusion activity that brings together much of the session's learning and discoveries.</p> <p>How would you plan a forest for the future? What would you do to ensure your forest is managed sustainably and can help combat climate change? Will your plans help or hinder biodiversity?</p>

## National Curriculum links

### ***Science - biology***

Gas exchange systems

- The role of leaf stomata in gas exchange in plants

Photosynthesis

- The reactants in, and products of, photosynthesis
- The dependence of almost all life on Earth on the ability of photosynthetic organisms to ... maintain levels of oxygen and carbon dioxide in the atmosphere

### ***Science - chemistry***

Earth and atmosphere

- The composition of the atmosphere
- The production of carbon dioxide by human activity and the impact on climate change

### ***Geography***

- The use of natural resources
- Understand how human and physical processes interact to influence and change landscapes, environments and the climate