



## Carbon and Water Cycles – A study of peatlands

**Age Range:** A level  
**Duration:** 5.5 hours (10:00am – 3:30pm), September – March only  
**Locations:** North Lees Estate, Goyt Valley

An investigation into the role peat and moorland play in the global carbon and water cycles and the way in which they help to mitigate the effects of climate change. Students will:

- Have a safe, fun and enjoyable experience in the Peak District National Park and understand that, the Peak District National Park exists because of its special, valued characteristics.
- By the end of the visit students will understand, how peat is a significant carbon and water store and how carbon and water flow in and out of a peatland and how to calculate their importance.
- Students will have an experience of different data collecting techniques, using quadrats, line transects, ID keys, using various meters and pH tests. They will collect data for statistical analysis, limitations and evaluation of techniques

We strive to make our visits accessible to all. Days can be tailored to your group’s needs. This day is over rough ground but some adjustments may be possible, it is recommended to discuss your particular needs with us before booking.

### Main Curriculum Links:

Geography fieldwork investigation and geographical skills - provides contextualized learning in inspiring real world environments to develop geographical understanding.

- AQA - 3.1 Physical geography; 3.1.1 Water and carbon cycles.
- OCR - 1.2 Earths Life Support Systems – the importance of water and carbon to life on Earth.
- Edexcel – Topic 6 The carbon cycle 6.2,6.3 climate change, 6.9 role of peatlands.
- Eduqas – 2.1 Global systems water and carbon cycles

Key Learning Objectives Students should learn ....	Learning Outcomes
<ul style="list-style-type: none"> <li>• How peat is a significant carbon and water store</li> <li>• Carbon and water flow in and out of a peatland and how to calculate their importance.</li> <li>• The physical and chemical factors affecting the distribution of moorland plants and they role they play in maintaining the health of the ecosystem</li> <li>• The concept of carbon and water cycles on a local and global level through an ecosystem</li> <li>• That ecosystems are affected by human activity and are carefully monitored and managed.</li> <li>• Different data collecting techniques, using quadrats, line transects, ID keys, using various meters and pH tests.</li> <li>• Collecting data for statistical analysis, limitations and evaluation of techniques</li> </ul> <p>Thinking Skills – All activities promote independent enquiry, creative thinking, team working and effective participation</p>	<p><b>All</b> students will be able to:</p> <ul style="list-style-type: none"> <li>• Using various data collection techniques for practical fieldwork, transects, quadrats, measuring tapes, ID keys etc</li> <li>• Using meters and Apps to measure abiotic parameters</li> <li>• Have opportunity to discuss and understand the importance of peatlands an there role in the carbon cycle.</li> </ul>
	<p><b>Most</b> children will be able to:</p> <ul style="list-style-type: none"> <li>• Sampling methods, random, systematic or stratified</li> <li>• Discuss that sustainable management is needed to conserve and enhance peatlands.</li> </ul>
	<p><b>Some</b> children will be able to:</p> <ul style="list-style-type: none"> <li>• Understand the connection between the local and global carbon cycle and links to climate change.</li> </ul>

**Note:** Lunch will be taken enroute at a suitable location. There are **no toilets available** so a toilet stop is advised before arrival. The terrain for this day is rough in places, and weather can change quickly in an upland environment. All participants must have sturdy footwear/wellingtons and warm clothing. See our pre-visit guidance for more details.

### Ideas for Extending Learning Before/After the Visit

- Before your visits have a look at these short film clips: [The Peak District and South Pennine moors - remarkable places on your doorstep](#) and [Peak District National Park Authority – Corporate Strategy: Landscape](#)
- Face sheets and free ID guides at [moorsforthefuture.org.uk/our-resources](http://moorsforthefuture.org.uk/our-resources)