• Deliver two days of fieldwork within an inspiring physical environment.
• Prepare AS level students for Paper 1 Section B: Fieldwork Investigation in Physical Geography worth 10% of their total marks.
• Cover physical specification content for AS fieldwork in Section A – Changing Landscapes; 1.2 Glaciated Landscapes.
• For those going on to A level, this course will contribute two of the four days of fieldwork requirements and provide contextualised learning in inspiring real world environments to develop their geographical understanding for the A level examinations.
### Example Course Timetable

<table>
<thead>
<tr>
<th>DAY</th>
<th>MORNING</th>
<th>AFTERNOON</th>
<th>EVENING</th>
</tr>
</thead>
</table>
| 1   | Arrive Midday  
Students will be greeted by FSC staff, with a welcome talk followed by a brief tour of the Centre and the local area. | An Introduction to Glaciated Landscapes  
Develop a sense of place in an inspiring local environment, getting an idea of glacial systems and their role in shaping the glacial landscape. Explore the chronology of events which have shaped the landscape and the influence of physical factors on these events. | Data Analysis and Evaluation  
Using graphs and presentation techniques to look for orientation patterns within glacial environments. In combination with mapping and GIS learners will extend their understanding of the local landscape through exploring the physical factors influencing the glacial systems of the past. |
| 2   | Erosional and Depositional Landforms  
A full fieldwork day where learners explore an awe inspiring post-glacial environment, following the path of a former ice flow and piecing together the processes and chronology that have created the landscape they see today. Learners will explore the impact of ice on the landscape, observing landforms such as corries, arêtes and moraines, which have resulted from interactions between geology and erosional and depositional processes. They will investigate characteristics of sediments deposited by glacial and fluvioglacial processes. Through direct observation and use of maps or aerial photos, learners will gain knowledge of a number of glaciated environment landforms, including the processes that led to their creation. | Data Analysis and Evaluation  
Learners will explore the link between the impact of former glaciers and ice sheets on the UK landscape and the consequences of ongoing deglaciation in other global settings. The analysis of their local primary data and global secondary data through GIS will give meaning to the fieldwork on a local and global scale. |  |
| 3   | Post-Glacial Landscape Modification  
A choice of enquiry into processes at work since glaciers retreated: either measurements to determine the active or relic nature of a scree slope or an investigation of succession in a kettle hole or lake. | Depart at Midday  
A final farewell from FSC staff as the students depart at midday. |  |

Please note: to ensure safe and quality learning experiences for students, the timetable may alter depending on weather conditions and local factors at Centres.

"The Cairngorm Mountains...[have been]...planed down by the ice cap, and split, shattered, and scooped by frost, glaciers and the strength of running water. Their physiognomy is in the geography books, [but this is] a pallid simulacrum of their reality, [...] which is a reality of the mind" – Nan Shepherd, The Living Mountain

The post-glacial landscapes of the UK are stimulating and evocative environments in which we are offered a glimpse into both the past and the future. Through immersion in this awe-inspiring scenery, learners will begin to explore the chronology and causes of change, both spatial and temporal, in these environments. Fieldwork, asking geographical questions and observation will develop learners’ understanding of the evolution of these landscapes. Such explorations will forge links between the UK landscape and the consequences of ongoing deglaciation in other parts of the world, giving meaning to learners’ fieldwork on both a local and global scale.

Please visit [http://www.field-studies-council.org/outdoorclassroom/](http://www.field-studies-council.org/outdoorclassroom/) for alternative courses.
Learning Opportunities

‘From what has actually been, we have data for concluding with regard to that which is to happen thereafter.’ - James Hutton 1788

In engaging with a glaciated landscape, we look back in time. Unpicking the palimpsest layers of the past involves looking at what is not there as well as what is; interpreting subsequent modification as well as initial formation. Exploration of this environment brings us face to face with the interconnected nature of the landscape system within space and time.

This session will encourage learners to develop a framework for questioning and interpreting how and why the landscape has changed and evolved throughout the Quaternary period. Getting outside into the environment will provide a backdrop to interpret the landscape chronologically, and as a system with inputs, processes and outputs. Learners will use first hand observation and measurements alongside maps and GIS imagery to explore physical factors such as climate, geology, latitude and altitude, relief and aspect, which influence the formation of landforms within the landscape system.

Fieldwork, measurements and analysis may include:

- Corrie surveys: size, shape, orientation, altitude.
- Striation surveys: orientation, cross-cutting.
- Rose diagrams to present orientation data.

Specification Links

SECTION A Changing Landscapes

1.2 Glaciated Landscapes

1.2.1 The operation of a glacier as a system

1.2.2 Climate change and the glacier budget over different time scales

1.2.4 The range of glacial environments and their distribution
Learning Opportunities

During these evening sessions students will draw together the fieldwork completed over the day and start to present and analyse their data. They will:

- Interpret the data and information from both primary and secondary sources to start to describe patterns, trends and relationships.
- Apply their knowledge of concepts, processes and the locations they have studied to start to understand their field observations.
- Synthesise their findings to draw conclusions based on the evidence and research that they have carried out.
- Reflect on the enquiry process to start to understand the strengths and weaknesses of their investigation.
- Use geospatial technologies (GIS) to analyse, present and communicate findings.
- Use a range of geographical skills, including statistics to process and present qualitative and quantitative data sets, drawing on past data and/or other location data.
Learning Opportunities

‘A house burnt down by fire did not tell its story more plainly than did this valley. If it had still been filled by a glacier, the phenomena would have been less distinct than they now are.’ - Charles Darwin 1842

For developing an understanding of landscape there is no substitute for direct observation. The post-glacial landscapes of the UK are awe-inspiring places that connect us with their geological and climatological past, present and future. It is through engaging with this environment that we can begin to question the how and the why of what we see, and through awareness that we can begin to answer these questions.

Learners will assemble evidence of glaciation on a local scale through first-hand observation and measurements. Through immersion in an inspiring post-glacial environment, learners explore the impact of ice on the landscape, observing features and landforms from millimetre to kilometre scale and interpreting the chronology of interactions between ice and geology over hundreds of thousands of years. In addition to qualitative techniques, primary data from glacial and/or fluvioglacial sediments will be used to examine the characteristics of depositional features. Through unearthing sediments which were last moved by glacial ice over 10,000 years ago, learners will extend their thinking around sharing the present with the past and into the future. Learners will use secondary data, GIS and statistical tools to explore the link between the impact of receding glaciers on the UK landscape and the consequences of ongoing deglaciation in other parts of the world, giving meaning to their fieldwork on both a local and global scale.

Fieldwork surveying glacial erosional, depositional and fluvioglacial features of a glaciated environment may involve:

- Identification and interpretation.
- Field sketching.
- Geomorphological mapping.
- Valley surveys: long and cross sections, slope angle, distribution.
- Survey of distribution and formation of sediments within depositional features (size, shape, stratification).
- Chronological interpretation.

Specification Links

SECTION A Changing Landscapes

1.2 Glaciated Landscapes

1.2.5 Processes of glacial weathering, erosion and the characteristics and formation of associated landforms and landscapes

1.2.6 Processes of glacial and fluvioglacial transport and glacial and fluvioglacial deposition and the characteristics and formation of associated landforms and landscapes

1.2.7 Periglacial processes and the formation of associated features and landscapes
Learning Opportunities

“Learn how to see. Realise that everything connects to everything else” - Leonardo da Vinci

“When we tug at a single thing in nature, we find it attached to the rest of the world.” - John Muir

Time has not stood still since glaciers retreated from this environment; thousands of years of time are concealed in a few centimetres of sediment or the frost-shattered crack of a rock. The processes which continue to work and rework these landscapes speak to us not only about the past, but the future. We are not passive observers in this landscape; although our individual presence in it may be transitory, our footprint on the earth is not

Learners will develop their understanding of the constantly changing nature of the environment through exploration of an ongoing process within a post-glacial landscape. They will consider the timeframe over which these processes have occurred, and the conditions (such as climate, aspect, geology, sediment source, vegetation succession, and disturbance) required for their development and modification. Thresholds within these systems and discussion of ongoing change in nature will be used as a catalyst for learners to develop their thinking around how they are part of a larger system of anthropogenic change, and how this is likely to affect glacial and post-glacial landscapes in the future.

Fieldwork will involve either:

- Scree slope measurements (gradient, sorting, source mapping, vegetation analysis) to determine whether the slope is an active or fossil feature.
- Kettle hole or lake succession investigation (plant ID, species richness, sediment depth, moisture content, discussion of the use of pollen records) to get an idea of time since glaciation.

Specification Links

SECTION A Changing Landscapes

1.2 Glaciated Landscapes

1.2.8 Variations in glacial processes, glacial landforms and landscapes over different time scales

1.2.9 Glacial processes are a vital context for human activity
To book this course, simply:
Choose the time of the year you would like to attend
1. Pick the Centre(s) of interest
2. Check availability online, contact head office to check availability across multiple Centres or contact the Centre(s) of your choice directly

To book this course the minimum size of your group must be 12 students and one member of staff.

Head Office contact details:
Tel: 01743 852100   Email: enquiries@field-studies-council.org