



FSC Outdoor Classroom for Scotland Higher Programmes

FSC programmes are fixed length courses with clearly stated outcomes and links to SQA National Unit Specifications.

Managing Environmental Resources Investigating Ecosystems and Land Use 5 days

Please visit
<http://www.field-studies-council.org/outdoorclassroom/higher>
for alternative Higher programmes

OVERVIEW

This five day course focuses on the *Investigating Ecosystems* and *Land Use in Scotland* units of the National Unit Specification. During the course all students will benefit from expert tuition in a beautiful highland setting, while experiencing, firsthand, the concepts and issues associated with managing environmental resources.

This course packs a lot of fieldwork into a limited amount of time; students will leave with a greater awareness of the ecosystems and landscapes of the Scottish Highlands, and practical skills in critical investigation and the practical conservation of ecosystems.

PROGRAMME LENGTH

5 Days (4 nights with 12 teaching sessions)

Monday-Friday, Wednesday-Sunday

Groups would normally arrive in time to be taught in the afternoon of the first day and would then be taught on that evening and for three and a half days subsequently. Groups depart immediately after the morning session on the day of departure.

Day 1	Day 2	Day 3	Day 4	Day 5
Arrive Afternoon & evening sessions	Morning, afternoon & evening sessions	Morning, afternoon & evening sessions	Morning, afternoon & evening sessions	Morning session Depart after Lunch

PROGRAMME CONTENT

- Investigations into ecosystems - abiotic and biotic factors; energy dynamics and food webs; nature and property of soils
- Investigations into land use and associated issues – uplands and high mountains – past uses, skiing/tourism/conservation, designated sites etc.
- Biological sampling methods, fieldwork techniques and using identification keys
- Data collection - using a range of mapping and fieldwork techniques
- Analysis, presentation and interpretation of data
- Personal, interpersonal, and organizational skills

NATIONAL UNIT SPECIFICATION LINKS:

This course focuses on Unit 2 *Investigating Ecosystems* and *Land Use in Scotland* in the National Unit Specification.

The approach is investigative using fieldwork techniques to observe, measure and record the various elements contributing to the local ecosystems and landscapes under study, and their interrelationships. Students will take back with them a better idea of how they learn best and the importance of fieldwork.

Higher

Unit 2 *Investigating Ecosystems*

- 1 Ecosystems, habitats and communities
- 2 Nature and property of soils
- 3 Dynamics of ecosystems
- 4 Human activities, their effects on ecosystems

Unit 3 *Land Use in Scotland*

- 1 Development of land/water uses – local examples, or
- 2 Current land/water uses – local examples

EXEMPLAR TIMETABLE

DAY	MORNING	AFTERNOON	EVENING
1	<p>Arrival (approx. 12 - 1pm)</p> <p>Welcome and outline the challenges ahead Tour of centre Settle into rooms Allocate kit (i.e. waterproofs)</p> <p>Introduction to Fieldwork Introductory discussion to explore:</p> <ul style="list-style-type: none"> • The importance of firsthand fieldwork experience • Aims of the course 	<p>Soil study Students undertake a guided investigation of contrasting soil profiles:</p> <ul style="list-style-type: none"> • Investigate a variety of sampling techniques – physical characteristics • Use measuring equipment – light, pH, temperature, soil moisture • Use keys to identify plants and animals • Discuss soil processes at work • Discuss the presentation and analysis of their data and draw conclusions 	<p>Animal trapping Students will set Longworth and pitfall traps in order to trap and study small invertebrate and mammal species of the area to:</p> <p>Identify species and release</p> <ul style="list-style-type: none"> • Identify species • Discuss feeding and habitat needs • Discuss the use of traps
2	<p>River Ecosystems Students undertake river investigation to: Identify components affecting the river ecosystem to:</p> <ul style="list-style-type: none"> • Introduce concepts of freshwater ecology • Identify pollution sources • Collect data uses appropriate sampling techniques for both biotic and abiotic factors • Identify water invertebrates using keys • Measure pH and oxygen saturation levels along with river velocity 	<p>Follow up session Use microscopes and keys to identify invertebrates and adaptations to living in water/feeding</p> <ul style="list-style-type: none"> • Identify ways in which organic pollution can affect the distribution of organisms • Identify sources of error in data collection 	<p>Food Chains Students will design and build own activity to demonstrate food chain/web relationships and energy flow to:</p> <ul style="list-style-type: none"> • Reinforce learning about energy flow and interrelationships in an ecosystem • Improve their team and communication skills
3	<p>Grassland Ecosystems Students investigate and improved and unimproved grassland ecosystem to:</p> <ul style="list-style-type: none"> • Discuss grassland ecosystems and sampling methods • Use identification keys and focus on diversity and abundance of species and propose hypotheses • Use appropriate biotic and abiotic sampling methods • Measure and investigate e.g. leaf litter, soil pH, moisture, also light intensity and humidity • Introduce concepts of land management and potential conflicts along the river Ardlie 	<p>Organic Farming and Conservation Students visit the local SEER center/ organic farm and discuss conservation, agriculture and associated conflicts - including the use of pesticides, fertilizers/ rock dust, and the problems associated with different types of pollution</p>	<p>Follow up session Using data gathered during the morning investigation students will:</p> <ul style="list-style-type: none"> • Provide graphical analysis of their results • Discuss the methodology used and its limitations
4	<p>Glenshee Ski Area Futures Role Play The location is introduced and the scenario presented. Groups undertake an investigation to:</p> <ul style="list-style-type: none"> • Research secondary information on the local area – Internet/library/resource box • Complete on site sampling, field measurements and mapping for Environmental Impact Assessment (EIA) • Identify and evaluate the natural and human influences affecting present and future land use 	<p>Follow up session Using all the primary and secondary data collected students will:</p> <ul style="list-style-type: none"> • Produce a plan for the future land management of the area • Provide a EIA to support their proposal • Prepare a group presentation 	<p>Prepare presentations</p> <p>Ropes and Zip Line A series of rope challenges to:</p> <ul style="list-style-type: none"> • Improve their communication skills • Undertake a personal challenge
5	<p>Role Play Presentations Council meeting - presentations and peer review of group performance/displays</p>	Lunch and Depart	

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

FSC KINDROGAN

Located in rural Perthshire, at the edge of the Cairngorms National Park FSC Kindrogan is 11 miles from Pitlochry's mainline train station and close to the A9. The Centre itself is set in wooded grounds on the banks of the River Ardle and lies within easy reach of some of the most inspiring landforms in the Scottish Highlands and a rich range of wildlife habitats.



KD

Kindrogan

Tel: 01250 870150

TO BOOK THIS PROGRAMME, SIMPLY:

1. Choose the time of the year you would like to attend
2. Check availability online or contact FSC Kindrogan

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The FSC prides itself on being flexible. If you can't find a programme to meet your exact requirements a course specifically tailored to meet your needs can be developed. To discuss this, contact the centre of your choice. Fees will depend on what time of year you would like to visit and your length of stay but will be more expensive than FSC programmes at peak periods.