



AS & A2 Biology for Edexcel

Tailored Courses

Slapton Ley

Please visit

<http://www.field-studies-council.org/outdoorclassroom/biology/edexcel/>
for alternative A-level AQA programmes

OVERVIEW

A variety of habitats can be studied to allow students the opportunity to practise a variety of practical data collection techniques, graphical and statistical analysis and cover the specification content of Unit 4 – The Natural Environment and Species Survival.

OPTIONS

Ecological Introduction

A basic introduction to the key ecological concepts and terminology that will be used for the rest of the course. Introduction to sampling techniques and strategies.

Freshwater Ecology

Students will use Slapton Ley to investigate variations in distribution and abundance of freshwater invertebrates. Alternatively Slapton Wood stream may be used depending on time of year and antecedent weather conditions. The study will also allow students to study trophic levels and energy flow within an ecosystem.

Rocky Shore Ecology

Students will carry out several investigations on the rocky shore at Gorah Rocks, Prawle, to allow them to collect and analyse data relating to the distribution and abundance of rocky shore organisms. Students will have the opportunity to interpret data relating to species distribution and global warming.

Succession

An investigation into the process of plant succession, which is occurring on the shingle ridge at Slapton Sands. Students will collect and analyse data on the vegetation, climate and soil factors along a transect line. Discussion of management strategies used on the shingle ridge will take place.

Woodland Ecology

Students will use a variety of techniques and sampling strategies to investigate variations in distribution and abundance of woodland flora and invertebrates in Slapton Woods, part of the Slapton Ley NNR. The use of dendrochronology to assess changes in the climate.

Conservation

A walk round the NNR discussing management techniques used, with implications of global warming and changes in plant and animal populations.

Content of each topic

Topic	Definitions & Concepts	Sampling and Experimental Techniques	Data Analysis and Presentation Skills	How Science Works
Ecological Intro		Random and systematic sampling. Quadrats and transects. Percentage cover and frequency.	Dendrochronology	Global warming
Freshwater Ecology	Niche and adaptation to environment. Net and gross primary production. Efficiency of energy transfer.	Abiotic factors. Quantitative data on energy transfer.	Null Hypothesis. Mann Whitney U-test. Box and whisker. Interpretation of climate data.	Risk assessment.
Rocky Shore	Niche and adaptation to the environment. Biotic and abiotic factors and their effect on the distribution and abundance of plant and animal species.	Random and systematic sampling.	Null hypothesis. Mean, median, mode. Standard deviation.	Risk assessment. Global warming and changing distribution of plants and animals.
Succession	Niche and adaptation to the environment. Succession to climax community.	Abiotic factors – climatic and edaphic. Systematic sampling. Quadrats.	Null Hypothesis. Kite diagrams. Spearman's Rank.	Risk assessment.
Woodland Ecology	Biotic and abiotic factors and their effect on the distribution and abundance of plant and animal species	Random and systematic sampling. Quadrats and transects. Percentage cover and frequency.	Null Hypothesis. Mann Whitney U-test. Box and whisker.	Risk assessment. Global warming and changing distribution of plants and animals.
Conservation	Niche and adaptation to the environment. Succession to climax community.			Scientific conclusions Global warming and changing distribution of plants and animals. Global warming