

# Session Outline

## National 3/4/5 Ecological Fieldwork Techniques

Biology: Life on Earth (National 3) Learners will develop their scientific skills and carry out practical learning activities related to the investigation of ecosystems and biodiversity. Learners will investigate the key areas of sampling and identifying living things from different habitats to compare their biodiversity and suggest reasons for their distribution.

Biology: Life on Earth (National 4) Learners will develop their skills of scientific inquiry, investigation and analytical thinking, along with knowledge and understanding in the context of life on Earth. Learners will investigate how animal and plants species depend on each other, the impact of population growth and natural hazards on biodiversity.

Biology: Life on Earth (National 5) Learners will investigate biodiversity and the distribution of life; energy in ecosystems; sampling techniques and measurement of abiotic and biotic factors; adaptation, natural selection and the evolution of species and human impact on the environment.

Learning objectives	Session structure	Assessment for learning
<p>Investigate the relationship between organisms and their environment.</p> <p>Use appropriate fieldwork techniques to collect data.</p> <p>Understand the effects of abiotic factors on an ecosystem</p> <p>Assess the limitations of the techniques used.</p> <p>Understand where and when to apply the appropriate technique</p>	<p><b>Introduction</b> Welcome to the RSPB. Students will be introduced to the inspiring location of our nature reserves and explore the need of ecologists to understand the biodiversity of the world around us.</p> <p><b>Practical Fieldwork</b> Students will investigate the distribution and abundance of organisms using a range of ecological fieldwork techniques such as random sampling with quadrats and belt transects. They will use first hand data to estimate population sizes, and determine the affect of biotic and abiotic factors on the inspiring ecosystems of our amazing nature reserves.</p> <p>By collecting this data students will have to opportunity to consider how environments change and how conservation organisations act locally and globally to manage landscapes for humans and wildlife.</p> <p><b>Plenary activity</b> Using their experiences in the field students will evaluate and consider the limitations of their methodology and present their findings</p>	<p>RSPB Learning staff will use a variety of teacher and student led individual and group activities throughout the session to assess for learning.</p>
Before your visit	After your visit	Key terms
<p>An understanding of the concept of biodiversity will aid students in gaining the most out of the day</p>	<p>Use the data collected to cover vital maths skills such as drawing and interpreting charts and calculating simple statistics</p>	<p>Biodiversity, distribution, abundance, sampling, estimates, quadrats, biotic, abiotic, limitations</p>