

Session Outline

Advanced Higher Biology – Sampling

Biology: Organisms and Evolution 1 Field techniques for biologists (a) Health and safety (b) Sampling of wild organisms (c) Identification and taxonomy (d) Monitoring populations (e) Measuring and recording animal behaviour
 Investigative Biology 1 Scientific principles and process (a) Scientific method Scientific cycle (b) Scientific literature and communication (c) Scientific ethics; 2 Experimentation(c) Experimental design (e) Sampling (f) Ensuring reliability
 3 Critical evaluation of biological research(a) Evaluating background information (b) Evaluating experimental design (d) Evaluating conclusions

Learning objectives	Session structure	Assessment for learning
<p>Solve problems and apply scientific knowledge to practical contexts</p> <p>Know and understand how to use a wide range of experimental and practical techniques to investigate variation, populations and communities.</p> <p>Collect data to measure species richness and diversity.</p>	<p>Sampling Biodiversity Students will investigate the communities that make up the ecosystems within our nature reserves.</p> <p>Random sampling or belt transects with quadrats will be used to investigate the impact of biotic and abiotic factors on the population size and variation within a species and how this impacts upon its niche.</p> <p>By collecting this data students will have the opportunity to consider how we work locally and globally to manage landscapes for human and conservational needs.</p> <p>Plenary activity 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>Students will benefit from a prior knowledge of species richness and species diversity</p>	<p>The data collected can be used in mathematical analysis, such as Simpson’s index of diversity and/or for use with appropriate statistical tests.</p>	<p>Sampling techniques, quadrats, biodiversity, species richness, Simpson’s index, population, community, habitat, variation, management</p>