

Biology Curriculum Links

National 3: Life on Earth Unit

Subject area:

1. Sampling and identifying living things from different habitats to compare their biodiversity and suggest reasons for their distribution.

Outcomes:

1. Apply skills of scientific inquiry and draw on knowledge and understanding of the key areas of this Unit to carry out an experiment/practical investigation by:
 - 1.1 Following given procedures safely
 - 1.2 Making and recording observations/measurements accurately
 - 1.3 Presenting results in an appropriate format
 - 1.4 Drawing valid conclusions
 - 1.5 Evaluating experimental procedures

National 4: Life on Earth Unit

Subject areas:

1. Animals and plants species depend on each other
2. Impact of population growth and natural hazards on biodiversity

Outcomes:

1. Apply skills of scientific inquiry and draw on knowledge and understanding of the key areas of this Unit to carry out an experiment/practical investigation by:
 - 1.1 Planning an experiment/practical investigation
 - 1.2 Following procedures safely
 - 1.3 Making and recording observations/measurements accurately
 - 1.4 Presenting results in an appropriate format
 - 1.5 Drawing valid conclusions
 - 1.6 Evaluating experimental procedures

National 4: Added Value Unit

1. Apply skills and knowledge to investigate a topical issue in biology and its impact on society/the environment (Animal & Plant dependency, climate change on biodiversity, conservation)
 - 1.1 Choosing, with justification, a relevant issue in biology
 - 1.2 Researching the issue
 - 1.3 Presenting appropriate information/data
 - 1.4 Explaining the impact, in terms of the biology involved
 - 1.5 Communicating the findings of the investigation

National 5: Life on Earth Unit

Subject areas:

1. Biodiversity and the distribution of life
 - a. Biotic, abiotic and human influences are all factors that affect biodiversity in an ecosystem.
 - b. Grazing and predation are biotic factors; pH and temperature are abiotic factors.
 - c. Biomes are the various regions of our planet as distinguished by their similar climate, fauna and flora. Global distribution of biomes can be influenced by temperature and rainfall.
 - d. An ecosystem consists of all the organisms living in a particular area and the non-living components with which the organisms interact.
 - e. A niche is the role that an organism plays within a community. It includes the use it makes of the resources in its ecosystem and its interactions with other organisms in the community including competition, parasitism, predation, light, temperature and nutrient availability.
2. Sampling techniques and measurement of abiotic and biotic factors
 - a. Sampling plants and animals using quantitative techniques including quadrats and pitfall traps.
 - b. Evaluation of limitations and sources of error in pitfall traps and quadrats.
 - c. Measuring abiotic factors including light intensity, temperature, pH and soil moisture.
5. Human impact on the environment
 - d. Indicator species are species that by their presence or absence indicate environmental quality/levels of pollution.

Outcomes

1. Apply skills of scientific inquiry and draw on knowledge and understanding of the key areas of this Unit to carry out an experiment/practical investigation by:
 - 1.1 Planning an experiment/practical investigation
 - 1.2 Following procedures safely
 - 1.3 Making and recording observations/measurements accurately
 - 1.4 Presenting results in an appropriate format
 - 1.5 Drawing valid conclusions
 - 1.6 Evaluating experimental procedures
2. Draw on knowledge and understanding of the key areas of this Unit and apply scientific skills by:
 - 2.1 Making accurate statements
 - 2.2 Describing an application
 - 2.3 Describing a biological issue in terms of the effect on the environment/society
 - 2.4 Solving problems

Higher Assessment: Sustainability

1. Biodiversity
 - b. Measuring biodiversity
 - c. Threats to biodiversity

Skills for Learning, Skills for Life & Skills for Work

1 Literacy

- 1.1 Reading
- 1.2 Writing
- 1.3 Listening and talking

2 Numeracy

- 2.1 Number processes
- 2.2 Money, time and measurement
- 1.3 Information handling

5 Thinking skills

- 5.2 Understanding
- 5.3 Applying
- 5.4 Analysing and evaluating

Standard Grade: Biosphere topic

1c) Ecosystem control and management - intervention in the natural balance of an ecosystem; using understanding to manage ecosystems

Intermediate 2: Environmental Biology and Genetics Unit

2a) Factors affecting biodiversity

- Effects of grazing (very high or low intensity of grazing will decrease diversity)
- Effects of human activity (pollution and habitat destruction lead to decrease in diversity)

Advanced Higher: Environmental Biology Unit

2b)1ii Interactions in EcoSystems - Grazing

The effect of grazing on plant communities: effects on diversity and the dominance of grasses and other plants with basal meristems.