

| Options EHS Ecology | | Scope and Sequence |
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| Unit | Lesson | Objectives |
| Scientific Inquiry and Analysis | | |
| Scientific Inquiry | | |
| | | Describe the steps involved in scientific inquiry. |
| | | Differentiate between an observation and an inference. |
| | | Explain the relationship between variables and controls in an experiment. |
| | | Compare and contrast scientific theories and scientific laws. |
| Laboratory Tools and Safety | | |
| | | Describe the use of various common laboratory tools. |
| | | Differentiate between light, dissecting, and electron microscopes. |
| | | Identify safety equipment found in a science lab. |
| | | Explain the importance of following common lab rules and procedures. |
| Scientific Measurement | | |
| | | Explain the purpose of utilizing the metric system in scientific measurement. |
| | | Identify the basic SI units utilized in scientific measurement. |
| | | Calculate values utilizing the metric conversion process. |
| | | Describe the use of significant figures and rounding in scientific measurement. |
| Topic Test | | |
| Introduction to Ecology | | |
| Ecology 101 | | |
| | | Describe the levels of organization in the biosphere. |
| | | Identify the major biomes found on Earth. |
| | | Compare and contrast major ecosystems found on Earth. |

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| | Ecology 102 | Skills used: create a flow chart, compare and contrast |
| | | Identify factors that can cause change within an ecosystem. |
| | | Evaluate the effects of different factors on ecosystem stability. |
| | | Describe changes that can occur within an ecosystem. |
| | | Skills used: understanding cause and effect, making logical connections, interpreting observations |
| | Trophic Levels and Food Webs | |
| | | Explain how relationships between organisms in an ecosystem contribute to energy flow within a food chain. |
| | | Analyze the effects of changes in populations on food web dynamics. |
| | | Differentiate between three types of energy pyramids. |
| | | Analyze relationships between producers, consumers, and decomposers in an ecosystem. |
| | | Skills used: compare and contrast, create a structure diagram, understanding cause and effect, interpreting observations |
| | Adaptation | |
| | | Describe the development of the theory of evolution. |
| | | Explain the theory of evolution. |
| | | Relate adaptations of organisms to resource competition. |
| | | Skills used: create a timeline, making logical connections |
| | Global Connection: Changing Migratory Patterns | |
| | | Explain how migratory patterns change in response to alterations in an ecosystem. |
| | Topic Test | |
| Habitats | | |

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| | Skills Lesson: Contrasting Observations or Objects | <p>List characteristics of two or more observable events or objects.</p> <p>Organize characteristics on a chart or graph.</p> <p>Distinguish differences between the two events or objects.</p> |
| | Organismal Relationships | <p>Describe three types of interactions between organisms in an ecosystem.</p> <p>Compare and contrast mutualism, parasitism, and commensalism.</p> <p>Explain the effects of competitive exclusion on an ecosystem.</p> <p>Skills used: compare and contrast, understanding cause and effect</p> |
| | Biodiversity | <p>Analyze the effects of local evolution or migration on an ecosystem.</p> <p>Predict the impact of removing or adding organisms on a food chain.</p> <p>Explain how changes in biodiversity impact an ecosystem.</p> <p>Skills used: making predictions, making logical connections</p> |
| | Land Habitats | <p>Differentiate between biotic and abiotic factors in various ecosystems.</p> <p>Explain the adaptations of indigenous species to their respective ecosystems.</p> <p>Skills used: compare and contrast</p> |
| | Aquatic Habitats | <p>Compare and contrast the components of marine and freshwater ecosystems.</p> <p>Differentiate between terrestrial and aquatic energy pyramids.</p> <p>Skills used: compare and contrast</p> |

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| | Topic Test | |
| | Population Dynamics | |
| | Population Size | |
| | | Identify biotic and abiotic factors that limit population growth. |
| | | Evaluate the effect of various factors on population size. |
| | | Analyze population patterns within ecosystems. |
| | | Skills used: interpreting data, understanding cause and effect, making logical connections |
| | Population Genetics | |
| | | Describe the effect of genetics on the growth rate and carrying capacity of a population. |
| | | Evaluate the effects of events on gene flow. |
| | | Skills used: interpreting data, understanding cause and effect |
| | Determining Population Size | |
| | | Compare and contrast various methods of determining population size. |
| | | Discriminate between major population growth models. |
| | | Compute population density. |
| | | Skills used: interpreting data, compare and contrast, calculating data |
| | Measuring Populations | |
| | | Compare and contrast various types of population distribution. |
| | | Differentiate between stabilizing, disruptive, and directional selection utilizing a graph. |
| | | Illustrate the structure of a given population demographic. |
| | | Skills used: compare and contrast, create a structure diagram, interpreting data |
| | Global Connection: Human Impact on Population Size | |

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| | | Evaluate human impact on wildlife population size. |
| | Topic Test | |
| Arid and Semi-Arid Biomes | | |
| | Skills Lesson: Making Comparisons | |
| | | Identify like systems or events to be compared and contrasted. |
| | | List characteristics of the compared systems or events. |
| | | Group characteristics by similarities and differences. |
| | | Contrast unlike characteristics of two or more phenomena. |
| | Characteristics of Biomes | |
| | | Identify the characteristics used to define all biomes. |
| | | Summarize the history of biomes on Earth. |
| | | Describe the impact of humanity on Earth's biomes. |
| | | Compare and contrast artificial and natural changes within a biome. |
| | | Skills used: compare and contrast, understanding cause and effect, identifying trends |
| | Desert and Desert-Scrub Biomes | |
| | | Identify the characteristics of desert and desert-scrub biomes. |
| | | Evaluate ways organisms have adapted to desert and desert-scrub environments. |
| | | Skills used: making logical connections, compare and contrast |
| | The Chaparral | |
| | | Identify the characteristics of chaparral biomes. |
| | | Evaluate ways organisms have adapted to chaparral. |
| | | Skills used: making logical connections |

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| | Alpine and Taiga Biomes | <p>Identify the characteristics of the alpine and taiga biomes.</p> <p>Evaluate ways organisms have adapted to the alpine and taiga biomes.</p> <p>Skills used: making logical connections, compare and contrast</p> |
| | The Tundra | <p>Identify the characteristics of the tundra.</p> <p>Evaluate ways organisms have adapted to the tundra.</p> <p>Skills used: making logical connections</p> |
| | Topic Test | |
| Temperate, Wet, and Aquatic Biomes | | |
| | Savanna and Grassland Biomes | <p>Identify the characteristics of the savanna and grassland biomes.</p> <p>Evaluate ways organisms have adapted to the savanna and grasslands.</p> <p>Skills used: making logical connections, compare and contrast</p> |
| | Deciduous Forests | <p>Identify the characteristics of deciduous forests.</p> <p>Evaluate ways organisms have adapted to deciduous forests.</p> <p>Skills used: making logical connections</p> |
| | The Rainforest | <p>Identify the characteristics of the rainforest.</p> <p>Evaluate ways organisms have adapted to the rainforest.</p> <p>Skills used: making logical connections</p> |

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| | Freshwater and Marine Biomes | <p>Identify characteristics that are unique to each of the aquatic biomes.</p> <p>Compare and contrast the adaptations of organisms in the aquatic biomes to their respective environments.</p> <p>Describe how humans utilize resources from each of the aquatic biomes.</p> <p>Explain how human understanding of aquatic ecosystems has changed throughout history.</p> <p>Skills used: compare and contrast, identifying trends</p> |
| | Global Connection: Why Invasive Species Thrive | <p>Relate the ability of invasive species to thrive in their new habitat to resource competition.</p> |
| | Topic Test | |
| Cumulative Test Review | | |
| Cumulative Exam | | |