

Comparing and Contrasting Ecosystems
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I. Overview

An ecosystem is an area that contains organisms interacting with one another and their non-living environment. The organisms that make up the living part of an ecosystem are called biotic factors. An organism depends on other biotic factors for food, shelter, protection, and reproduction. Non-living things found in an ecosystem are called abiotic factors. Abiotic factors such as soil, water, temperature, and sunlight have an effect on the type and number of organisms living in an ecosystem. Ecosystems are dynamic interactions between plants, animals, and microorganisms and their environment working together as a functional unit.

II. Curriculum Correlation

The following series of lessons is the main focus of a six week unit on ecosystems. During this unit, students will be engaged in an in-depth study of what ecosystems are, and the biotic and abiotic factors that make up three ecosystems indicative to Missouri: woodlands, freshwater, and prairie.

III. Learning Objectives: Students will:

- Know what an ecosystem is and recognize the features that make up the composition of an ecosystem.
- Make qualitative and quantitative observations about the biotic and abiotic factors of three ecosystems: woodlands, creek, and prairie.
- Use gathered observations to compare and contrast the three ecosystems.
- Analyze and interpret gathered data to formulate explanations of the similarities and differences among the three ecosystems when applicable.

These learning objectives meet with the following Missouri Grade Level Expectations:

Strand 4: Changes in Ecosystems and Interactions of Organisms with their Environment

1: Organisms are interdependent with one another and with their environment.

Concept A: All populations living together within a community interact with one another and with their environment in order to survive and maintain a balanced ecosystem. (Grades 4 and 6)

Concept D: The diversity of species within an ecosystem is affected by changes in the environment which can be caused by other organisms or outside processes. (Grade 4)

Strand 7: Scientific Inquiry

1. Science Understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking.

Concept B: Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations.(Grades 4 and 5)

Concept C: Evidence is used to formulate explanations. (Grades 4 and 5)

Concept E: The nature of science relies upon communication of results and justification of explanations. (Grades 4 and 5)