

Vision of Student:

Students will be able to understand that the idea of a biome is based on complex interactions of several key components. This rationale stems from the fact that I want students to understand that the relationships that exist in the natural world are complex and their actions can have affects, both positive and negative on the natural process.

Student Background Knowledge:

- *Familiar with the terrestrial biomes that exist on Earth.*
- *Comprehension of the difference between biotic/abiotic*
- *Strong background into the "types" of animals that exist in each biome.*

Unit AIM

Students will demonstrate an understanding of the characteristics and structures of the environment and how living things interact with one another and their environment. Students understanding will include their role in this process and how their decision can affect the delicate balance of nature.

Unit Overall Problem-Solving Goal

You are an ecologist working for the United Nations. A large corporation is offering a 2 million dollar grant to establish a conservancy in a biome. Your job is research "your" biome and address the various components of the presentation rubric (see Biome Investigation Grading Rubric). You will develop a PowerPoint/Poster displaying the various key components your biome. The corporation will be selecting where they will establish the conservancy based on which presentation is the most effective. GOOD LUCK

Unit Goal #1:

How is the structure of a biome based on its abiotic and biotic factors?

Unit Goal #2:

How are the various levels of environmental organization different and how do they vary in different biomes?

Unit Goal #3:

How is does an organism's role in an ecosystem affect its place in the energy pyramid?

Unit Goal #4:

What are the various types of organism interactions and how are they similar/different from one another?

Goal #1 Objectives:

Students will be able to:

define and give real-world examples of the following terms: abiotic factors; biotic factors.

distinguish between biotic and abiotic factors.

explain how abiotic factors relate to the community.

Goal #2 Objectives:

Students will be able to:

define and give real-world examples of the following terms: ecology; community; biosphere; population.

explain how population, communities, ecosystems, and the biosphere are related.

distinguish between the various levels of the environment.

Goal #3 Objectives:

Students will be able to:

define and give real-world examples the following terms: herbivore, food web, carnivore, energy pyramid, omnivore, habitat, scavenger, niche, and food chain.

describe the functions of producers, consumers, and decomposers in an ecosystem.

distinguish between a food web and a food chain.

explain how energy flows through a food web.

Goal #4 Objectives:

Students will be able to:

define and give real-world examples of the following terms: limiting factors, carrying capacity, mutualism, prey, predator, symbiosis, commensalism, parasitism, and coevolution.

identify and distinguish between the two types of competition.

identify the relationship that exists between the species in symbiosis and coevolution

Goal 1 & 2 Learning Experiences & Assessment Activities:

Learning Experience:

Advanced Organizers; Pre/Post Knowledge Test; Small Group Discussions; Large Group Discussions Concept Attainment; Deductive Thinking; Synergy

Assessment Activities:

*Modified KWL Form - Factors & Organization
Knowledge Application Activity - Factors & Organization*

Goal 3 & 4 Learning Experiences & Assessment Activities:

Learning Experience:

Advanced Organizers; Pre/Post Knowledge Test; Small Group Discussions; Large Group Discussions Concept Attainment; Deductive Thinking

Assessment Activities:

*Modified KWL Form - Energy & Organisms
Knowledge Application Activity - Energy & Organisms*

Cumulative Performance Assessment Activities:

Learning Experience used:

Webquest; Inquiry Projects; Small Group Discussion; Concept Attainment; Inquiry Activities

Assessment Activities:

*Biomes Webquest
Biomes Group Investigation Project*

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