

Teacher's Guide to "Ecosystemville"

CT State Standards	National Science Standards
<p>C. 5 Explain how populations are affected by predator -prey relationships</p> <p>C. 6 Describe the common food webs in different Connecticut ecosystems</p>	<p><u>Populations and Ecosystems</u></p> <ul style="list-style-type: none"> • Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers - they make their own food. All animals, including humans, are consumers, which obtain food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. • A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.

- I. Vocabulary Covered in "Ecosystemville"
1. Community - interacting organisms of different species in the same place
 2. Predators - an organism that hunts another organism
 3. Prey - an organism that is hunted
 4. Carnivores - animals that eat meat
 5. Herbivores - animals that eat plants
 6. Species - a group of organisms that can breed with one another and produce fertile offspring
 7. Symbiosis - a relationship in nature between two organisms
 8. Parasites - an organism that relies on its host for its life
 9. Host - an organism that is taken over by a parasite
 10. Commensalism - a relationship in nature where one organism benefits and one organisms gets nothing from it
 11. Mutualism - a relationship in nature where two organisms each benefit each other
 12. Population - organisms of the same species that live in the same area
 13. Niche - an organism's role in its ecosystem

II. Understanding the Concepts in “Ecosystemville”

A. To Eat or Be Eaten (Verse 1)

1. Verse one in the song talks about several important roles in ecosystems:
 - a. Carnivores – meat eaters
 - b. Herbivores – plant eaters
 - c. Predators – organisms that hunt others
 - d. Prey – organisms that get eaten
2. Relationships in nature (verses 2-4)
 - a. Verse 2 mentions parasitism - a relationship where one organism benefits and another gets harmed. The parasite will harm its host by stealing its nutrients and reproduce inside its host.
 - b. Verse 3 talks about Commensalism – a relationship where one organisms benefits and the other gets nothing. Ex. The shark eats and remora fish obtains its food scraps.
 - c. Verse 4 discusses mutualism where two organisms benefit each other. Ex. Clown fish and sea anemone where the clown fish gets protection from the anemone and the anemone gets its scraps.
3. Ecosystem Components: Populations, Communities, and Niches
 - a. Verse 5 talks about communities (groups of different organisms sharing the same area together.) For example, zebras, lions, and hyenas sharing the grasslands of Africa. Populations are groups of 1 species in a particular ecosystem. Ex. A group of zebras in that region. And Niches, the role an organism plays in its particular ecosystem.

Student Worksheet for "Ecosystemville"

Part I. Match the following vocabulary words with their definitions.

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|-------------------|--|
| 1. ___ Carnivore | A. A relationship of two organisms |
| 2. ___ Herbivore | B. Groups of different species living together |
| 3. ___ Predator | C. An organism that eats meat |
| 4. ___ Prey | D. Group of Organisms that produce fertile offspring |
| 5. ___ Population | E. An organism that eats plants |
| 6. ___ Community | F. An organism that gets eaten |
| 7. ___ Species | G. An organism that hunts another |
| 8. ___ Symbiosis | H. A group of the same organisms in an area |

Part II. Answer the following short answer questions to the best of your ability

1. Discuss the components of a forest ecosystem near you. Make sure you talk about the various community members, their role as predators or prey, and if they are carnivores or herbivores or both (omnivores).

2. Discuss the different types of relationships in nature and give examples of each.

3. You are a scientist investigating a pond ecosystem. You are worried because one of the major predators, trout, are dying off because of water pollution. What may happen to the rest of the ecosystem if the trout die off entirely?
