

Career Critters

State Mandated Benchmarks and Standards

Grade Level: 5-6

Subject Areas: Science, Language Arts, Environmental Education, Social Studies

Key Terms: ecosystem, erosion, insecticide, manager, niche

Objectives

The students will (1) identify five examples of how wild animals and plants can be used to manage some environmental problems, and (2) describe and give examples of an organism and its niche.

Method

Students match organisms to environmental problems in a community and evaluate the potential of the organisms to help solve the problem.

Materials

For each small group: one Ecosystem Map, one set of Critter Cards, one set of Ecosystem Cards, and at least three of each different Critter Tokens.

Background

Wild animals and plants can “manage” some environmental problems. Sometimes organisms can help solve or mitigate human-induced environmental problems simply by doing their “jobs.” An organism’s ecological job is called its niche. Because this management approach is complex, the discussion questions should be emphasized to bring the activity into a more real-life perspective.

Procedure

Before the Activity

1. To make the Critter Cards, copy the pictures onto heavy paper, and place the corresponding information on the back of each card.
2. For the Ecosystem Cards, copy the information, cut out the cards, and place them on heavy paper.
3. Make three copies of the Critter Tokens for each group and cut them into individual squares.

4. Use a copy machine to expand the Ecosystem Map. Make one copy for each group of students.

The Activity

1. Introduce and define the key terms for this activity: ecosystem, erosion, insecticide, manager, and niche.
2. Divide the class into groups of four to eight students.
3. Give each group a copy of the Ecosystem Map, a set of Ecosystem Cards, a set of Critter Cards, and a set of Critter Tokens. Have the group locate key areas on the map. Ask the students these questions:
 - *Using the Ecosystem Cards, where are the ecosystems on the map?
 - *Where does the stream begin and end on the map? Trace the course of the stream.
 - *Where is the golf course in relationship to the stream?
 - *Where are the parking lots in relationship to the stream?
 - *Where is the park in relationship to the stream?
 - *Where is the prairie ecosystem in relationship to the houses?
 - *What areas or neighborhoods on the map are similar to where we live?
4. Distribute the set of Critter Cards among the students in the group. Have the students read the back of the cards either silently or aloud and observe the illustrations on the front of the cards. Tell the students to keep the cards they were given.
5. Arrange the Critter Tokens neatly around the edge of the Ecosystem Map in any order. There should be at least three of each different Critter Token.
6. Shuffle and stack the 12 Ecosystem Cards face down beside the Ecosystem Map. One student draws a card and reads it aloud to the group. Each student examines his or her own Critter Cards to determine if those animals or plants could help solve the ecosystem problem described. If so, the students explain how so to the group. If the

group agrees, a Critter Token of that plant or animal is placed on the Ecosystem Map. Remember, more than one plant or animal may be used to solve the problem. Continue drawing Ecosystem Cards until all are used. There may be unused Critter Tokens at the end of the activity.

7. When all the Ecosystem Cards have been drawn and all the ecosystem problems have been solved, have the groups compare their results.

8. Discuss and ask the students:

*Could any of these solutions backfire? In other words, could the plants or animals used to help solve certain problems end up being a problem themselves?

*Are there other wild plants or animals not identified in this activity that could have been used to help solve the ecosystem problems?

*The gambusia fish is not native to many states. Is it okay to introduce “foreign

species” to help with an ecosystem problem? What are the benefits? What are the risks?

*How could the location of the 12 ecosystems on the map be redesigned to reduce some of the environmental problems?

*Are there ways that animals, plants, and humans could work together to solve environmental problems?

*In what ways is this activity realistic? Unrealistic?

Evaluation

1. Have the students summarize five or more of the ecosystem problems described in this activity and explain how a wild animal or plant might be helpful in solving those problems.

2. Have the students define “niche.” Give examples of the niches held by the animals and plants described in this activity.

3. Describe how wild plants and animals might be used to help solve one ecosystem problem not used in this activity.



Adapted from: Project Wild. Houston: Council for Environmental Education. 2005
Aligned with Michigan's K-7 Science Grade Level Content Expectations v.12.07