

The Web of Life

Lesson Author: Sarah Hamilton

School or Agency: St. Anne's Wetland Education Outreach Project

Grade Level(s): 3-8 (K-8 with extension)

Science Topic: Food chain, connections in ecosystems

Summary: This activity will enable students to better understand the interconnectedness of components in an ecosystem (both biotic and abiotic) by essentially tying everything together. Having the students participate in this activity after their tour of the wetlands will allow them to apply, digest, and retain the information they've just learned from their guide. We also want the children asking questions, not just answering them.

Core Content: Unifying concepts and processes in science. More specifically: Systems, Order, and Organization.

Objectives: Students will be able to recognize systems as organized groups of related objects/components, understanding that living systems having different levels of organization (here: organisms, populations, communities), and that interactions are constantly occurring in these systems. Students will be able to understand that interactions result in change, and that the present is a result of the past. They will recognize that all organisms have different needs which must be supplied by their environment, that plants are the base of an ecosystem upon which all animals depend, and that the sun has a vital role as Earth's major energy provider.

Materials: Plant and animal name tags (or picture cards), a ball of string.

Procedures:

1. Prepare a variety of name tags (or picture cards) for the students prior to the activity, with each card representing one vital component of a wetland. These can be things like the sun, soil, water, earthworms, May apples, raccoons, deer, fish, juncle weed, snails, humans, cattails, etc. It will be helpful to point out some of these things along the tour of the wetlands, and finally do this activity at the end of the wetland trail.
2. Have the students sit down in a circle after picking a card, and inform them that by sitting in this circle they are representing this ecosystem. It is helpful to begin at the beginning; instruct the student with the sun tag to hold the string and then ask aloud "Who needs the sun?" Algae needs the sun, so the ball of string can be passed to the algae. You can then ask "Who eats the algae?" and then pass the ball of string to the snail. Do this until every component has been represented, you can do multiple chains.

3. Continue this until everyone is connected to several people, discussing each relationship as you go along. For example, rabbits **eat** plants, plants **need** soil, etc.
4. Once everyone is connected, simulate the removal of one of the components of the wetlands. Consider the removal of water from the wetlands being drained, and ask the student representing water to shake his/her string. Then ask any student who feels that shaking to shake their own string, continuing this until it is demonstrated that every component would be affected. Discuss the different impacts on the wetlands of the removal or destruction of any of the components of the web.
5. What would happen if the water became heavily polluted? What would happen if all the algae died? If humans cut down the trees in the wetlands?

Assessment Techniques: Upon returning to the classroom, ask the students to reflect on their web exercise and to write a short paragraph on connections within ecosystems. Younger students might enjoy illustrating their own web.

Resources: Adapted from Ducks Unlimited's Teachers Guide to Wetland Activities, Web of Life Activity. <http://www.fs.fed.us/outdoors/naturewatch/implementation/Curricula/DU-Wetland-Teacher-Guide.PDF>

Extensions: For younger grade levels, replacing the animal and plant name cards with picture cards might help students better understand and visualize their place in the web.