

# TRB 4:5 - Investigation 3 - Web of Life

## Summary

Students will understand environments and how organisms adapt to their environment.

## Group Size

Large Groups

## Materials

- [Habitat Nametags](#) (pdf)  
Large ball of yarn or string
- [Food Web for the Oakbrush Environment](#) (pdf)

## Additional Resources

### *Agencies:*

Utah Society for Environmental Education  
Division of Wildlife Resources  
Project Learning Tree

## Background for Teachers

Each of the environments studied in this objective has many interactions between living and non-living things. The animals, plants, rocks, and soil of an area form a community that depends on physical features to provide many different types of shelter and plants as a food source or shelter. They are also vital to most plants because they help pollinate flowers and disperse seeds. At the same time, animals such as deer, rabbits, and insects may eat certain plants, greatly reducing their numbers. Some insects can damage an ecosystem if their numbers get too high. Insect-eating birds play an important role in keeping insect populations in check. When creating a web of life for an environment, the web will show eating and shelter relationships.

## Intended Learning Outcomes

1. Use a Science Process and Thinking Skills
4. Communicate Effectively Using Science Language and Reasoning

## Instructional Procedures

### Pre-Assessment/Invitation to Learn

Play a game of 20 questions. Have one student come to the front of the class and mentally choose an animal or plant from a habitat. (They can pick from a list if they need to.) They will then take questions from other students that can only be answered with a "Yes" or "No" answer. The class will try to guess 1) the name of the animal, and 2) the environment in which it lives. The questions they ask will also help the teacher pre-assess the prior knowledge of students about this topic, or do formative evaluation if the lesson is part of a previous study about ecosystems.

### Instructional Procedure

Explain that all things in an environment depend on other things within that environment in order to live. Brainstorm with students about what things humans need to live. The list should include food, shelter, and water. Discuss with children that all living organisms within an ecosystem will need these elements as well.

Gather students into a circle. Pass out a habitat nametag to each student. Each student is what his or her nametag says. In this activity, students will make connections to other animals or parts of an ecosystem.

Explain that all things depend on sunlight, air, and water to live. All students/organisms are connected to these elements. Place these nametags in the center of the circle.

The activity can begin with any student. Give one end of the ball of string to a student. Ask them to look around the circle and find another student that either depends on or can be connected to them. Help them tell what the connection is, then they will toss the ball to that student or the teacher can pass it to them. This student holds on to a point on the string and continues the connection or influence by the last student. Continue passing the ball of string around until all the students are connected at least once. You will have built a connective web between all the students.

You may want to refer to the [Food Web for the Oakbrush Environment](#) (pdf) example.

Step into the center of the web. Pick a single string and pluck it. Who felt the vibrations of the string? (all do)

What if one thing was taken out of the habitat? For example, all the mosquitoes die from pesticides or a dead tree is removed. Ask students to pick one organism in the system that seems less important than the others, and have him drop his string. Ask if anyone else was connected to that organism, and have them drop their string. After one or more have dropped out, ask the students again to identify an organism that seems less important and repeat the procedure. If anyone was connected to any of those students, they drop their string. Continue until everyone has either dropped their string or they were not connected in a way that they were affected, and ask these questions:

What happens when we remove a link in the ecosystem? (Organisms that depend on it are affected.)

Were the changes more significant when the system was composed of many parts or when it had fewer parts? (fewer, because they happen quickly)

Discuss the web of life. What happens when one part of the web is lost? (Many others are lost or affected.)

What are other ways the web of life could be disturbed? (Human impact, draining wetlands, clearing trees, disease, drought, etc.)

## Extensions

### *Science-*

Create food web mobiles that visually show student research about an organism and its place in the food web. (ILOs 3,4)

### *Fine Arts/Theater-*

Role-play a dynamic food web. Choreograph interdependence and use student selected music that reflects a particular environment. (Standard I, Objective 1)

### *Language Arts-*

Discuss some webs of life within the school or community. (Students go to school, teachers teach them, cafeteria workers feed them, parents pay taxes so teachers and cafeteria workers can buy food, etc.) (Standard I, Objective 1)

### Homework & Family Connections

Have students take a walk in their neighborhood. As they journey, have them write down a list of at least ten living things that they see. Create a web of life on paper like the one in the activity they participated in. For example, perhaps they see a tree. They would then connect the tree to something else they see that relies on the tree for either food or shelter, such as a magpie. If they saw an insect, this could connect to the bird. Have them continue until everything hooks together. Then have them take one of the links out of their web. Will it affect the other items? Have students share their results and discuss findings.

## Assessment Plan

By asking questions as the activity progresses, the teacher can correct or redirect misinformation. Have students choose an environment, and then describe and draw an interaction between animals and plants in their science journals. State two inferences that they can make after participating in the activity (i.e.: "Plants and animals in a food web are connected" or "When one organism is taken from a food web, it causes other parts to be affected.")

Extension ideas can also work as performance assessment tools. Use the rubric found at [UEN](#).

## Authors

[Utah LessonPlans](#)