

19. The Web

Interactions in the Bosque Ecosystem

281



Description: Students choose a plant or animal in the bosque; then, while standing in a circle, they show connections with other plants or animals by passing a string from one to another.

Objective: Students will learn that:

- there are many species which depend on each other in the bosque ecosystem; and
- that the loss of one will affect other species.

Materials: large ball of string
bosque animal cards (pictures only) from the “Who Lives Where?” activity
bosque plant cards from “Who Grows Where?”

Prerequisites: This activity is best done after the students have completed the “Who Lives Where?” activities.

Procedure: Select an assortment of bosque plants and animals so that there is one for each student. Use the pictures of animals from the “Who Lives Where?” activity and pictures of plants from “Who Grows Where,” all of which are in this guide. Include a cottonwood and an insect, such as the mosquito. Pass out the plants and animals. Have all the students stand in a circle, and state what plant or animal they are. Then challenge them to make connections between themselves and another plant or animal.

The discussion might go as follows:

“All the energy for plants and animals on the Earth comes from what? (*the sun*) What organisms on Earth make use of that energy directly? (*plants*) So let’s start with a plant. (*Give one end of the string to a plant.*) What eats the plant? (*Send the string to an herbivore.*) What

19. The Web



Grades: 1–8

Time: 20 minutes

Subjects: science, extensions in language, writing, drawing

Terms: *food web, herbivore, carnivore, ecosystem, threatened/endangered species*



eats an herbivore? (*Send the string to a carnivore.*) Now let's make as many connections as we can think of between everything here. We also want to get beyond just what eats what. Think about as many ways as you can in which one organism might need another: Where will its home be? Does it need a place to perch to find food? Does it need the droppings of something to fertilize it? Be creative in thinking of connections."

Pass the string between all organisms to which they are connected. Make sure everyone is included. You will have created quite a web.

Continue the activity by asking:

"What happens when we lose a piece—one of the organisms in an ecosystem? How about the mosquito? I don't like mosquitoes. I would prefer not to be bitten by any more mosquitoes, so I am going to spray pesticides to get rid of them. Mosquito, you shake your string(s) to show that something is happening to you. Who feels the shaking? You have been affected by the loss of the mosquito. Now everyone who feels the shaking, shake your strings to pass it on. In this way the loss of one species is felt by many others. One change in an ecosystem ripples throughout. In real life there are many connections between organisms, connections that researchers are just now learning about. Sometimes we find out about a species only when it is too late to do anything to save it.

"In New Mexico, the state flower is the yucca. There is only one kind of insect that can pollinate the yucca flower—the yucca moth. Other insects may visit the flower, but only the yucca moth has the ability to pollinate it. If something were to happen to yucca moths and no more were alive, we would not have any more yucca plants starting, and once the old ones die off we would have no more yuccas. The yucca fruits are eaten by people and animals; birds nest within the spiny leaves; pueblo people have used this plant for generations to make string and rope for sandals, nets, etc., and a soap from the roots. So without one kind of insect, one kind of plant would be lost. The loss of that plant would affect many, many other organisms. It is for these reasons that we talk about threatened and endangered species.

"Along the Rio Grande, the large cottonwood trees will sometimes have holes where a branch has died or a woodpecker has excavated a nest hole. These cavities are used by many other birds for their nests. Woodpeckers can make their own holes, but other birds must find a hole already prepared. Starlings, birds introduced to America from Europe, have moved into the bosque and are very aggressive about claiming holes for nesting. They start early in the



year before native birds nest or they push out the native birds and claim a hole for themselves.

“Another factor that is reducing the holes available for nests is that there are fewer and fewer large cottonwoods and more and more small trees like tamarisks and Russian olives. These trees are not native to North America but, since their introduction along the Rio Grande, they are the most common plants in some areas. They never get to be very large and are not big enough for woodpeckers to make their nest holes. Without cavities in the trees, many species are not able to nest and raise young.

“These are examples of changes in the natural system that cause effects no one even thought of before . . .”

Assessment: Have students draw their plant or animal along with other things it needs to survive. Do a group mural showing all the parts of the bosque ecosystem they have learned about.

Extensions: Have the students write about the plant or animal they have been in this activity. What would a day in the life or a year in the life of this organism be?