



## Domino Causality in the Food Web

### RECAST ACTIVITY

Find an open area. Gather the students around it.

Explain,

“We are going to play a game that will show how each living thing in an ecosystem relies on other living things to survive.”

Give a student a card with a picture of the sun on it. (Have a string tied to it so students can wear the card.)

Ask,

“Which organisms rely *directly* on the sun for their food?”

As students identify organisms - in this case, the green plants - give a card with green plants to another student. Have the student with the sun card hold one end of the piece of yarn and the student wearing the green plants card hold the other end. Then, ask,

“Which organisms rely *directly* on the green plants for their food?”

As these secondary organisms are identified add them to the food web, and then add those organisms that depend upon the secondary organisms for food. Repeat the questioning and constructing until all of the connections have been made.

Draw students’ attention to the complex web that has been created with the strings.

Ask,

“What might happen if the mice disappeared?” [*Owls, snakes, skunks, earthworms, and fungi would be directly affected. Other organisms would be indirectly affected.*]

Ask,

“What might happen if the green plants disappeared?”

Have the student who has the card for green plants sit down and gently tug on the strings that he or she is holding except for the one connected to the sun. Anyone who feels a tug on their string should sit down to show that they have been affected. Then those students should gently tug on their strings and anyone who now feels a tug on their string should sit down and so on. Everything except the sun would be affected.

Ask,

“What does this demonstration show?”

If the organisms’ food source is affected, they will be affected. Sometimes animals can turn to a different food source, but if the green plants disappear, everything will die. They are our link to the energy from the sun.

### PREPARATION

#### Materials

- Index cards (large size)
- Pictures of organisms in an ecosystem and their diet information: sun; green plants; insects; mice; toads; owls; snakes; skunks; fungi; earthworms
- Yarn or string

#### Prep Steps

1. Assemble the pictures of organisms on the index cards
2. Cut yarn or string into pieces long enough so that when tied to the cards, students can put them over their heads and wear them around their necks.
3. Punch holes in the index cards and tie yarn or string through the holes.
4. Cut 25 pieces of string or yarn to different lengths between 3 and 8 feet.

## RECAST ACTIVITY ANALYSIS

### What makes this work as a RECAST activity?

Students typically focus on direct, linear connections in the food web. Students realize that organisms are affected when the food sources that they directly rely upon are lost, but they fail to see the extended consequences of the loss of food sources that organisms indirectly rely upon. As the affected organisms, sit down and pull down the next “row” of consumers, the domino-like effects in a food web and the critical role of the sun in making energy available for life on Earth are revealed. Some students believe that energy is recycled just like matter—losing the essential role that the sun plays in continued life on Earth. Therefore, the domino-like quality of the relationships is emphasized.