

K-12 IYS Activity



Summary

Plants and some microorganisms are producers—they make their own food. All animals, including humans, are consumers, who obtain food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Energy is stored in organisms and is transferred to other organisms when they are eaten. Interactions based on feeding and nutrition are called trophic interactions. A map of this transfer of energy is called a *food web*. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem. Students consult the field guide at The Dirt on Soil - Learning Adventures and conduct a hands-on exercise.

Learning Objective

- To be able to identify what organisms are producers, consumers, and decomposers
- To learn about the ecologies, feeding habits, and food web structure of common soil organisms

Materials Needed

- Computers
- Desks
- Chairs
- String
- Blank index cards
- Markers
- Pens and paper

Celebrating the



2015
International
Year of Soils

soils.org/IYS

Field Guide to Soil Food Webs

Ages of Audience

K-12

Recommended group size?

Less than 20

Where could you offer this?

Local school or library

Type of Lesson

1. Indoor
2. Small group exercise/discussion critical thinking
3. Computer game

Time Needed:

1. Scientist prep time + clean up time: Minimal, and no clean up
2. Participant/class time: 20 minutes to read field guide; 30 minutes of classroom activity and discussion

Method

1. Access the field guide and read about the different organisms found in soil and what they eat.
2. Write the name of the different organisms on the index cards.
3. Starting with the mole and earthworm, each written on a card, connect the two with string.
4. Ask the question "What else eats the earthworm?" Connect the earthworm card to the correct animal.
5. Complete the physical food web, either in pairs, small groups or individually.
6. A final assessment could be a quick sketch with arrows colored to distinguish predator-prey relationships.
7. A paragraph or two describing how a particular organism affects its surrounding ecosystem could round out the experience.
8. When everyone is done, discuss the questions below.

Discussion Questions

1. What animal has the most variety in its diet?
2. What organisms would be most affected if another organism were to cease to exist? How would they be affected?
3. Are there any organisms that contribute more to the soil than others? Why?
4. Are there any organisms that harm the soil?
5. Are there more of one type of organism than another? Why would that be?

This material is borrowed from:

http://school.discoveryeducation.com/schooladventures/soil/field_guide.html

and http://school.discoveryeducation.com/schooladventures/soil/teacher_tips.html