# Class Activity: Soil Food Web

## Topics

1. Soil Microbes
2. Soil Microorganisms
3. Soil Organisms
4. Soil Food Web

## Teacher's Guide

**Activity overview:**
This activity is meant for students to understand what types of organisms live in soil, and how different microorganisms and organisms interact to create a food web in the soils.

Note* This activity can also be created/drawn by hand or include different soil organisms.

**Activity Instructions:**

1. **Provide the blank food web boards, different organism cards, and definition cards**
    a. Have students examine the different organisms and definition cards
    b. Students use the velcro to attach the different organism card and the corresponding definition card on the poster board
2. **Connecting the food web**
    a. After students have placed the appropriate organism and its corresponding definition, provide the students with markers
    b. Have students draw arrows to connect the interactions between the organisms based on how they get their energy
3. **Discuss complete food web as a class**
    a. Option A: Instructor creates food web in front of class, being directed by the students.
    b. Option B: Have students present their food webs to the class, explaining the different connections, key organisms in the food web, etc.

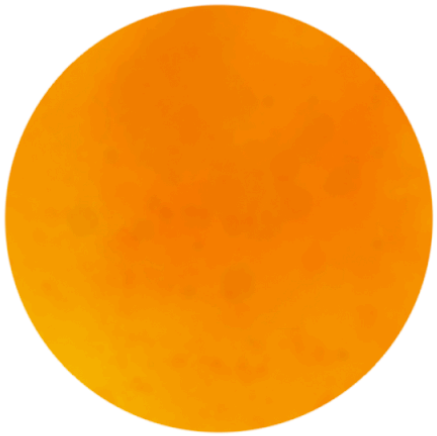
**Guiding Questions for the activity:**

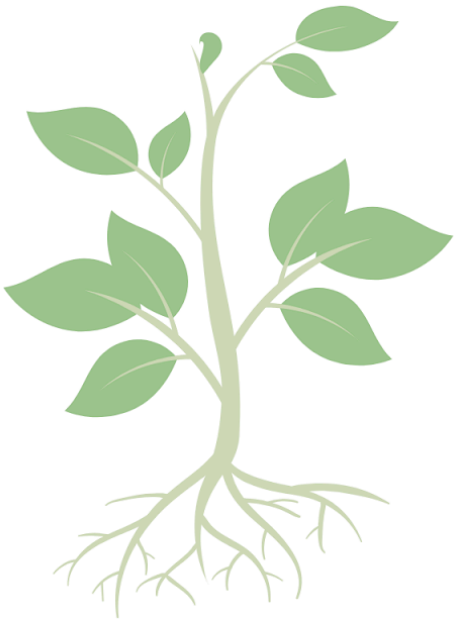
1. Do any of the organisms look familiar to you?
2. What types of things do [organism] eat?
3. Can one organism eat many different things?
4. What type of energy does the sun provide?
5. How many of these organisms are decomposers? Herbivores? Carnivores?

**Materials List**

- Cardboard poster boards
- Velcro strips
- Laminator
- Printed out images of soil organisms
- Printed out images of definitions
- Markers

# soil food web





### Amoeba:
Eats bacteria, regulating bacterial populations, and releases nitrogen back into soil

### Bacteria:
Break downs dead plants and animal into complex organic compounds and releases nitrogen, phosphorus, and potassium.

### Bacterial-Feeding Nematode:
Eats bacteria, releases nitrogen back into the soil, and helps move bacteria and fungi around the soil.

### Fungi-Feeding Nematode:
Eats fungi, releases nitrogen back into the soil, and helps move bacteria and fungi around the soil.

### Soil Mites:
Eats leaves and plant material, excretes nutrients back into the soil, and helps break down organic material to be more easily eaten by bacteria and fungi.

### Worms:
Eats dead plant matter, releasing nitrogen, phosphorus, and potassium into the soil, burrows into the soil allowing air to move in the soil.

### Spiders:
Eats mites, springtails, and ants controlling population numbers of small insects.

### Cockroaches:
Eats dead plants, leaves, wood, and some animal waste.

### Earwigs:
Eats dead plants and animals, and small insects.

### Beetles:
Eats dead plant, releasing nitrogen back into the soil, burrows into the soil allowing air to move into the soil.

**Rabbits:**
Eats the plants that grow in the soil.

**Moles:**
Eats worms and larger insects, helping to control populations, and improve soil structure.

**Springtails:**
Eats dead plants and animals, helps break down leaves, and releases carbon and nitrogen back into the soil.

**Ants:**
Eats dead plants, dead animals, and small insects, burrows into the soil allowing more air to move into the soil, moves nutrients around the soil.

**Fungi:**
Eats dead plants and animals, helps bind soil particles together, and increase surface area for nutrients and water in plants.

**Plant:**
Living organism that relies on soil health to live

**Tree:**
Living organism that relies on soil health to live

**Sun:**
Energy harvested by plants.

**Decaying Matter:**
Provides food and nutrients for all soil organisms, eventually being broken down into organic matter and nutrients.