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Garden Food Chains
Grade One

Lesson Summary

When to use this lesson
Use this in the spring as the class makes observations in their classroom terrariums.

Objective
Students understand how plants and animals interact in food chains.

Standards
S1L1. Students will investigate the characteristics and basic needs of plants and animals.
- a. Identify the basic needs of a plant.
  1. Air
  2. Water
  3. Light
  4. Nutrients
- b. Identify the basic needs of an animal.
  1. Air
  2. Water
  3. Food
  4. Shelter
- c. Identify the parts of a plant—root, stem, leaf, and flower.
- d. Compare and describe various animals—appearance, motion, growth, basic needs.

Materials
- Trowel for each student, optional
- A magnifying lens for each student
- Worksheet for each student
- Pencil for each student
- Clipboard for each student
- Laminated copies of compost/ground organisms in the barn
- Bug boxes, optional

Estimated Duration
30 minutes

Soil and Food Chain Discussion
- **Why do animals live in our garden?** To answer this, students should identify the things animals need to live. What do living things need? Air, water, food, living space, shelter.
- Garden animals need food. Why is food important? Food provides energy to live and grow.
- Today we want to make a picture of how garden animals get energy. Food chains show how plants and animals are linked as food energy.

- Every time an animal eats something the animal gets energy from it, like students get energy from their food.
- All food chains start with plants. Plants are the only living thing that can make their own food.
- Animals are linked to each other when they eat something that ate something else. Example: I ate beef on a hamburger that came from a cow that ate grass. This food chain starts with grass, which is linked to the cow that got energy from eating the grass. I am linked to the cow when I eat the hamburger and get energy from the cow. Show this food chain on the board. Ask students for a food chain that they are part of.
- Fungus can be part of a food chain, too. Fungus doesn't eat like we do, but gets nutrients from a food source, like a rotting plant, for the fungus to grow. The fungus food chain continues when an animal, like a slug, comes by to feed on the fungus.
- Food chains can overlap. One plant may start a food chain for several different kinds of animals. Most animals do not eat only one kind of food, so can be part of several food chains.

- **Why are food chains important in nature?** Food chains provide energy to the consumer. Some of the consumers in food chains help to control the number of animals in nature. Some of the consumers help decompose dead plants and animals, which helps to create soil and adds nutrients to soil. Healthy soil grows plants to start more food chains by attracting animals that eat the plants and animals that eat the animals that eat the plants.

Activity

- Each student receives a clipboard with a worksheet and a magnifier.

- Students will look for organisms that make up garden food chains. Each organism is drawn and labeled in an oval on the worksheet. Ask students where they will look. Start with plants, leaf compost, soil. Listen for birds. Watch for flying insects.

- When students have filled the ovals, they connect food sources with energy arrows. The point of the arrow points to the consumer that gets the energy. Show an example on your worksheet.

- Discuss the flow of energy in the food chains. Are any of the organisms part of another food chain? When food chains link, a food web is created. What happens when a link in a food chain is missing? When one food source in a food chain becomes unavailable, several other food chains can be affected by the lack of that food.

- What can happen in nature to harm food chains? Fire, floods, and strong winds can destroy habitats. How do we affect food chains? Plant loss from building. Pollution can affect soil and water. What happens? Less plants or different plants means animals die, move on, or adapt to new food sources.

- Some food sources for garden animals in our spring gardens:
  - Ants eat insects, dead insects, or nectar.
  - Bees eat nectar and pollen.
  - Ground beetles eat slugs, insect larva, and other small invertebrates.
  - Box elder bugs eat flowers, seeds, and leaves of female box elder trees.
  - Centipedes eat slugs, worms, insects, spiders, and pillbugs.
  - Earthworms eat dead plants and animals.
  - Earwigs eat live plants, moss, lichen, fungi, insects, aphids, spiders, mites, and dead plants and animals.
  - Grubs eat plant roots.
  - Millipedes eat leaf litter, dead insects, worms, and snails.
  - Pillbugs and sowbugs eat leaf litter, wood, and plant roots.

- Spiders eat various insects and pillbugs.
- Some stink bugs eat caterpillars and others slurp plant juices.
- Wasps eat insects, spiders, and nectar.
- Fungus gnats eat fungus and dead plants, like compost.
- Slugs and snails eat leaf litter, plant leaves, fruits, vegetables, and fungus.

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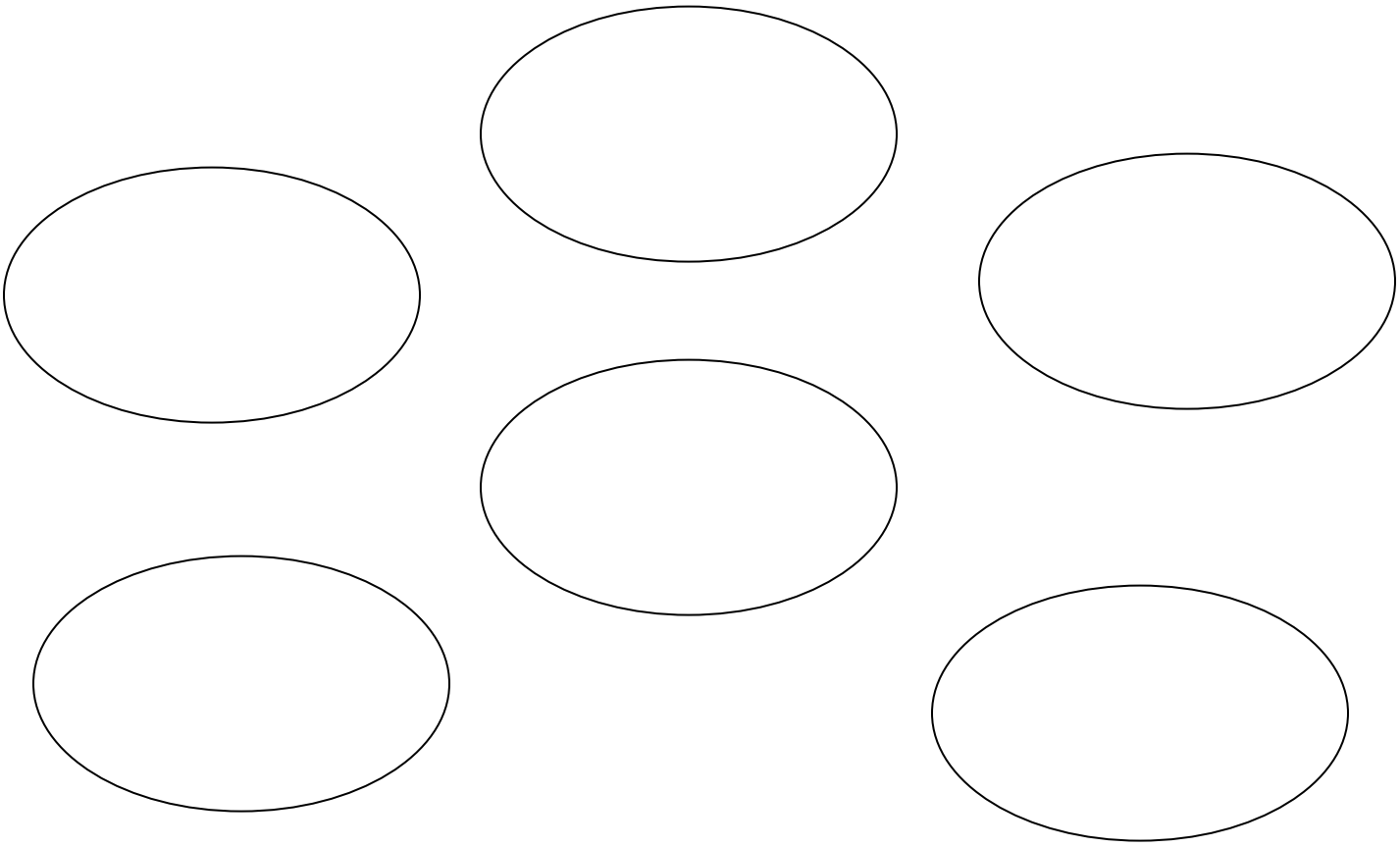
Garden Food Chains – Grade One

Name: _____

Find a garden organism (a plant, an animal, or a fungus), and draw and label it in an oval. Use an arrow to connect organisms that make up a food chain.



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- Spiders eat various insects and pillbugs.
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In science, we learn that living things interact with the environment to survive. Today, we created food chains from animals we observed in the garden. Ask your student what a food chain is. Email granny@grannysgardenschool.org to join us.