

Balance in the Natural World: Our Ecosystem

Lesson Description

Students are introduced to ecosystems in the garden. They observe ecological interactions in the garden or play an inside game to illustrate the complex food web interactions. This lesson is adapted from the You Are What You Eat lesson from Life Lab's The Growing Classroom.

- Time required: 60 minutes
- Location of lesson: Classroom and Garden (optional)

Learning Objectives

- Recognize the dynamic interconnection of soil, water, air, sun, plants and animals in the garden.

Materials and Preparation

- For inside activity option- Index cards or scraps of paper with the following labels (adjust total number to your class size):

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Coyote	Fish	Algae	Mouse
Earthworm	Oak Tree	Rabbit	Sparrow
Cattails	Snake	Robin	Hawk
Grass	Bear	Grasshopper	Owl
Salmon	Duck	Snail	Mountain Lion
Beetle	Mite	Fly	Deer
Lizard	Vulture	Gopher	Human

-  **Making Garden Links**
- Prepared vegetable snack of the week – 1 for each student
- Water to drink during the Class Warm-up – water dispenser in the classroom and 1 cup or a water bottle for each student

Class Warm-up: Champion Cheer and Veggie Taste Test (5-10 minutes)

- Give each student a cup of water or ensure that they have a filled water bottle in front of them.
- Give each student the prepared veggie snack of the day.
- Lead the students in enthusiastically reciting the  **Champion Cheer**.
- At the end of the cheer, drink water and eat the veggie snack together.
- Have students complete their  **Taste Test Observations** about the vegetable snack of the week.

Review of Last Lesson (2-3 minutes)

- Review the evaluation questions from last week's lesson. Evaluation questions from all lessons are listed at the end of the workbook .

Class Discussion (10 minutes)

All members of the natural world depend on each other for survival. The natural world needs to be in balance, harmony and peace in order for everything to work properly. [Insert any more specific traditional beliefs, stories or characters from the student's tribe if appropriate]. This balance between all living things is called the ecosystem. The ecosystem is a group of interacting organisms and their physical environment.

Let's think about how things in the garden help and hurt each other.

- *How does a lizard help the garden? (Answer: it helps protect the plants by eating bugs that would harm them)*
- *How do plants interact with each other? (Answer: some provide shade, some provide support, weeds steal space and water)*
- *How do animals interact with each other? (Answer: some animals eat other animals)*
- *How do animals interact with plants? (Answer: animals eat plants, animals eat other animals that may eat the plants, insects make the soil better for plants, etc.)*

Today we'll be scientists discovering how everything in the natural world is linked together.

Activities (35 minutes)

-  **"The Connected Ecosystem- Making Garden Links" (15 minutes):** Working together as a class, students brainstorm a list of plants and animals from the garden habitat and link them together.
 1. Refer students to their workbook page  **Making Garden Links.**
 2. Together as a class, brainstorm a list of plants and animals from the garden habitat. Be sure to include decomposers such as earthworms and beetles. Write the list on the board.
 3. Ask students to write 8 of these names in the boxes arranged in a circle on their workbook page and draw a food web among them with lines. This may be done individually or together as a class.
- **"Observing Ecological Interactions" (20 minutes):** Depending on the weather, students either go outside to the garden to observe ecological interactions OR play a game in the classroom. Choose either the outside option or the inside option.
 1. Outside Option:

- a. Allow students 10 minutes to go outside and discover interactions in the garden. Have them find and record at least 2 things that are interacting with each other.
 - b. Return to the classroom to share observations and discuss. Encourage each student to share their observations.
2. Inside Option:
- a. Have students sit in a circle and pass out one index card with an animal or plant written on it to each student.
 - b. Beginning with a student who is not a plant or decomposer, ask him or her to pick something from the circle that his or her animal depends on, such as an animal or plant it eats. Then ask the student representing that object to pick something his or her thing depends on. For example: Student 1 may say “owl eats Mouse” Student 2 may then say “Mouse eats grass” Student 3 may then say “grass depends on earthworms”, etc. Game continues until every student is picked at least once.
 - i. Don’t forget that grass depends on decomposers for nutrients in the soil. Decomposers depend on dead animals such as mountain lions and vultures.

Evaluation Questions (5 minutes)

1. *What is an ecosystem?* (Answer: a group of interacting organisms and their physical environment)
2. *How do plants interact with each other?* (Answer: some provide shade, some provide support, weeds steal space and water)
3. *How do animals interact with plants?* (Answer: animals eat plants, animals eat other animals that may eat the plants, insects make the soil better for plants, etc.)
4. *How do animals interact with other animals?* (Answer: some animals eat other animals)
5. *How can a food chain be broken?* (Answer: If one type of living thing in the chain is wiped out; for example, if chickens were to go extinct)
6. *How much water should you drink every day?* (Answer: at least 6 cups of water a day)
7. *How many fruits and vegetables should you eat every day?* (Answer: at least 5 fruits and vegetables a day)
8. *Does gardening connect you to your culture and help you learn new words in your language?* (Answer: yes)

Preparation for Future Lessons – Reminder for the Instructor

- Review the materials and preparation needed for the next lesson.

- Remember that an Elder guest instructor is needed for these Spring lessons: lesson 1 (Eating A Rainbow), lesson 4 (The Water Cycle), and lesson 9 (Plant Parts: Pollination).

Notes
