



Lesson 1: Local Ecosystems

Time: minimum 45 minutes
Grades: adaptable to grades K-4

Objectives

Students will:

- understand the basic elements of natural ecosystems
- be able to explain the relationships among parts of local ecosystems.

Materials

- images of plants, animals, rocks, etc. local to area
- uncoated paper plates (we used 6" diameter)
- markers, colored pencils, and/or crayons
- cut-out arrows

Vocabulary

- nature
- living/nonliving
- habitat
- ecosystem
- community

Resources

- pond ecosystem illustration: <http://bit.ly/pond-ecosystem>
- printable arrows: <http://www.earthconservancy.org/wp-content/uploads/2023/07/wereclaim-ecosystem-arrows-printable.pdf>

Lesson Plan

1. Understanding Nature

- Ask, "What is **nature**?" Discuss things found in nature. Can also discuss how humans use natural things as resources (e.g., sand and gravel used to make concrete, although in that form, no longer nature).
- In nature there are **living** and **nonliving** things. How do we know that something is alive?
- Ask, "Can any animal (or plant) live in any place?" Discuss examples of why not (we used the example of a polar bear living in northeastern PA). The place a creature exists is called its **habitat**. Brainstorm major types of habitat on earth (e.g., arctic, savannah, rainforest, ocean). Then discuss types of local habitats (e.g., forest, meadow, stream).
- Explain that when living (plants, animals, microbes, fungi) *and* nonliving (heat, soil, water, space) things combine in a certain place in a certain way, they create an **ecosystem**. An ecosystem is a type of **community** (explore community). In a community, each element is connected to the other parts; together, they support the successful existence of the whole. Using an image of a local ecosystem, talk about what living and nonliving things are present and the each's role (we showed an illustration of a pond). We also discussed what would happen if changes are made in the ecosystem (e.g., the bugs disappeared). This could also lead into a deeper discussion of human impacts on ecosystems.

2. Activity & Discussion

- Distribute identification guides for animals, plants, and rocks in local ecosystem (we made our own sheets, but you could use field guides or, to extend the activity, have students research online).
- Have each student select one item and draw it in the center of the paper plate.
- When all students are finished, gather everyone around a large table (or the floor). Begin to discuss relationships among their selected items. While there are many ways to do this, we often started with an insect or plant. Place arrows between the plates to show connections. Older students may be able to do this independently.
- Discuss what happens if one of the elements is taken away (e.g., a berry bush). Also discuss the significance of changes to the nonliving parts of ecosystems (e.g., temperature, water quality).

3. Conclusion & Preview

- Review the importance of stability in an ecosystem; that each element supports balance and survival.
- Explain that in the next lesson, students will explore one item from the local ecosystem that was particularly important to settlers in the region, and how this natural resource supported the community's existence and growth.



Instructor Laura Rinehimer, on left, works out connections among the animals, plants, and other natural elements drawn by students to show relationships in a local ecosystem.