

Tree Ecology

Suggested Location: Bird House

At a Glance:

Students investigate life in the trees from a bird's-eye view.

Grades: 3-5

Materials for Each Student:

- Clipboard
- Pencil
- Colored pencils
- Magnifying glass
- Student page

Goal(s):

Students will discover the importance of living and nonliving elements in an ecosystem.

Objectives:

- Students identify living and nonliving elements in an ecosystem.
- Students differentiate between living and non-living things.
- Students will explain how organisms depend on dead wood for survival.

PA Academic Standards:

Ecosystems and their Interactions: 4.6.4.A

Environmental Health: 4.3.4.C

Threatened, Endangered and Extinct Species: 4.7.4.A

National Standards of Sciences:

Standard 6: Understands relationships among organisms and their physical environment

Resource:

Project Learning Tree <https://www.plt.org/>

Background:

Throughout a tree's life it collects nutrients from the environment and uses them to grow—building new bark, wood, leaves, etc. When a tree dies, decomposition returns these nutrients back to the environment. Living organisms move in to facilitate the process of decomposition. Here are some things your students may find in and on the decaying stump. Plants such as fungi, moss, and lichens will grow on dead wood. As time passes, some seeds may plant themselves into the soft bark and may sprout. Insects such as termites, carpenter ants, and bark beetles will eat the wood and turn it into a system of tunnels. Some animals, such as



centipedes and spiders, will prey on the smaller insects. They in turn become meals for birds, skunks, and other animals.

Finally, many creatures depend on dead logs as hideouts or shelters from larger animals. You may also find that some beetles, wasps, and slugs lay their eggs in the decomposing wood.



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Directions:

Visit the Bird House to explore the unique ecosystem surrounding this tree house from a bird's-eye view. Take time to look and listen to all that is happening in and around the trees. Observe the living and nonliving things in this ecosystem.

Record the living elements in the environment. (Hint: living things breathe, move, grow, take in nutrients, and give off waste).

Record the nonliving elements in the environment. (Hint: some of these elements cannot be seen).

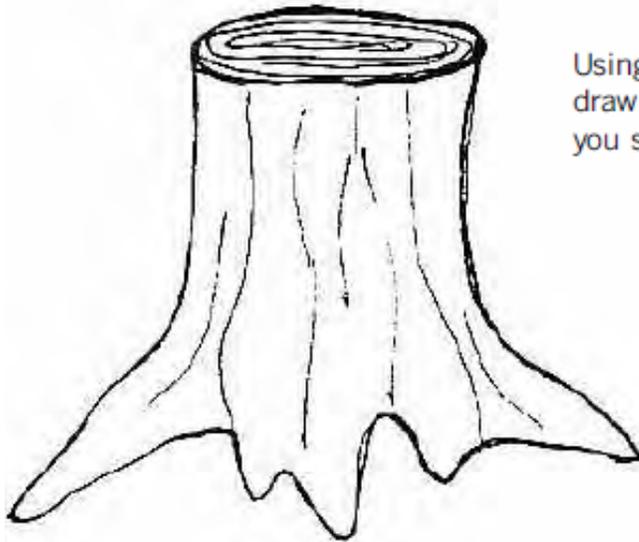
Why is it important to have BOTH living and nonliving elements in an ecosystem?



Investigate a tree stump next to the Bird House. Although this stump is considered “dead wood,” it is important to leave it in the wooded area around the tree house. Take a closer look and see if you can identify **producers**, **consumers**, and **decomposers** interacting on the stump.

List your findings here:

Over time, what do you think will happen to this tree stump?



Using your colored pencils,
draw some of the living things
you see on the stump.

