

GRADE FIVE NATURE WALK
Studying a Forest Ecosystem through Nature Journaling

OBJECTIVES:

- Recognize that the forest ecosystem is a constantly changing system of plants and animals interacting with each other and with the non-living environment.
- Realize that everything is dependent on everything else.
- Make observations of seasonal rhythms and cycles.
- Discover the fun of nature journaling as a way of connecting with the world around them.
- Review the concepts of *producer*, *consumer*, *decomposer* and *photosynthesis*.

PREPARATION:

- BBY coordinator should mark walk with surveyors as necessary.
- Classroom coordinator should collect a variety of colored fall leaves (enough for each child).
- Classroom coordinator should get sunrise, sunset and day length data for the day of the walk and record it on the board before the introduction.
- Walk should last approximately 60 min.

MATERIALS:

- Each child should have a clipboard, pencil and worksheets to record their observations.
- Each group should have a plastic baggie with a thermometer, compass and crayons.
- Each group should have a laminated cloud chart.
- Poison ivy identification sheets (for review in the classroom before going outside).
- Large cards labeled *producer*, *consumer*, *decomposer* and *photosynthesis*.

ACTIVITIES:

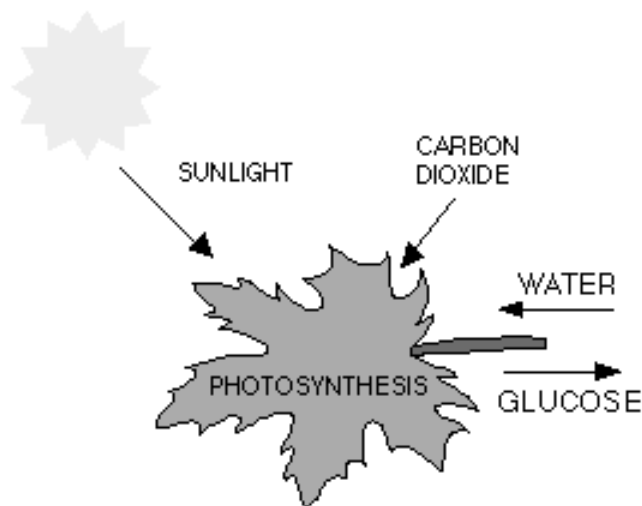
- In classroom introduction to be led by a Big Backyard volunteer—to last approximately 15 min.
- In classroom recording of sunrise, sunset and day length data on worksheets.
- Review of poison ivy identification sheets.
- Walk outside with directed activities to last approximately 45 min.

NATURE WALK TO BE LED BY BIG BACKYARD VOLUNTEER

1. What follows is an introduction to the forest ecosystem and to the vocabulary that will be used all year to discuss it. As one of the objectives is to observe seasonal changes, the introduction also includes information on why leaves change color in the fall. To facilitate the comfort of the volunteer with this information this can be read verbatim to the class.

Today we are going to talk about a forest ecosystem (*solicit examples of ecosystems from the class*). **An ecosystem is not a place; it is the process of plants and animals interacting with each other and with the non-living environment. Thus it is constantly changing. An ecosystem can be as small as a hole in a tree or a small pond or as big as a mountain or the earth. Today we are going to look at the forest ecosystem around Estabrook. But first we need to have a little vocabulary down, so we will know how to label what we see on our walk today.**

PRODUCER—Producers make their own food for the energy they need to live and grow. Plants use the energy of the sun to make their own food from water, minerals and air. There is a scientific name for this process (*again you can solicit the class to see if anyone knows the name*) **it is PHOTOSYNTHESIS.**



CONSUMER—Consumers cannot produce their own food, they must eat other consumers or producers to get the energy they need to live and grow.

DECOMPOSER—Decomposers are plants, fungi and animals that feed on dead or dying plant or animal material. In this process they turn plants and animals into nutrients that are returned to the soil (examples include earthworms, insects, bacteria and scavengers such as crows and vultures).

Today we will make observations about the forest ecosystem around Estabrook as it enters fall and is looking ahead to winter. (At this point distribute the colored leaves to the class—there should be at least one per student.) How many different colors can you find in your leaves—look closely. Why do leaves change color in fall? A chemical called chlorophyll helps make photosynthesis happen and it is green. As fall approaches, plants and trees get ready to winter. How do they know when to do this? (Ask the class) Shorter days lead to a decrease in sunlight and this decrease signals plants to start shutting down their food-making factories. The small tubes that connect the leaves to the rest of the plant start to close off. Without fresh water to replenish it, the chlorophyll begins to disappear. Then we begin to see the other pigments that have been there all along—the yellow and orange—that have been overpowered by the green. The brilliant red and purple colors that we see come from the glucose (sugar) that gets trapped in the leaves as the tubes start closing off.

The Eastern United States is one of the best places in the world to see fall colors. This is because of the mix of trees and the climate (dry late summers, sunny fall days and cool fall nights). (Collect the leaves.)

Let us record the day length on our worksheets, as it is one of the seasonal changes we will be observing through the year. (Have a volunteer “guesstimate” the day length.)

2. Get into groups and go outside to the grassy playground area. Ask the children to make a prediction as to the temperature and write that number down in the appropriate space on their worksheet. Then give the thermometer time to register. In the meantime, record other pertinent weather information—cloud cover and type, wind direction, precipitation – encourage the children to sketch or use descriptive phrases. When done, record actual temperature and head to the far corner of the playground to go onto the ridge.
3. Walk along the ridge trail. Encourage the children to look not just at eye level, but also above and below. Look for evidence that animals are living here—nests, chewed nuts, holes in trees etc. Look for evidence of producers, consumers, and decomposers.

4. At the end of the ridge trail, go down the steep hill and go left to the boardwalk area. Find an area on the boardwalk to sit and settle in. When the children are settled *Ask: What do you see? What do you feel? What do you smell? What do you hear?* Just take 5 min. or so to record answers on worksheet.
5. Next, have the children (without all getting up and moving around) pick up 2 different leaves from the forest floor. Have them do leaf rubbings with a crayon. Look at the veins on the leaf. Tell them:

Look closely at a leaf. You will see that it has lots of lines within it. These lines are called veins. The veins carry water and minerals to the leaf. They also carry food manufactured to the other parts of the tree. Veins serve as a skeleton for the leaves. They keep it spread out and stiff so that it can receive more sunlight. How are the veins in the tree similar to your veins? How are they different? Do leaves from different species of trees have different vein patterns?

From "Leaves and Their Veins" [Science Project Ideas](#) by Robert Gardner

6. Have the children write and or sketch a description of the area that they are in. Encourage them to use details that will help them locate this same place on future walks.
7. Continue on the boardwalk past the ponds; take the steep trail on the left back to the school parking lot.