

Wildlife and Ecosystems

Age Group: 6th grade

Time: 20 minutes

Materials:

- Journal
- Pens/Pencils
- Field Guides
- Cardboard sitting squares
- Binoculars
- Bug Boxes/Creature Peeper
- Ponchos (if raining)

Prep in advance:

Cut squares of cardboard for the kids to sit on while observing in the field.

Description:

Students will be introduced to ecosystems while observing their natural surroundings and writing about what they see, hear, feel, smell, etc.

Objectives:

Students will be able to.....

- Recognize local natural ecosystems.
- Properly use binoculars and observation tools.
- Reflect in their journals about nature.
- Experience the seasons and observe changes in a place over time

Environmental Education Guidelines:

- Questioning & Analysis
- Knowledge of environmental processes and systems:
 - The earth as a physical system: processes shape the earth.
 - The living environment: Organisms, populations and communities, systems and connections.
 - Environment and society: Places

Major Life Science Themes:

- Ecosystems
- Interdependence
- Animal relationships
- Populations
- Diversity

Vocabulary:

Ecosystem

A natural unit consisting of all plants, animals and micro-organisms ([biotic](#) factors) in an area functioning together with all of the non-living physical ([abiotic](#)) factors of the environment.

Source: Wikipedia

Safety:

- General garden safety, as expressed in the rules section below:
 - stay on the paths,
 - ask before you eat,
 - stay within sight of an adult

Instructional Sequence:**Rules** (5 minutes)

- Explain the observation rules to the students:
 - Students are to find a place to sit and observe, trying to stay away from other students as much as possible so that they may explore on their own.
 - Instruct students to stay within boundaries (set by the instructor).
 - Students may move their sitting spot if they see something of interest.
- Explain that the entire 10 minutes should be used for observation and recording.
- LGL leader (and teacher when available) should be silently wandering around the observation area to answer questions – students should silently signal to leader if they need to, but wait for leader to come near.
- Demonstrate signal for the end of the 10 minutes (An obvious bird call)
- Instruct students to activate their senses (especially hearing) and walk silently to observation place

Preparation for/making observations (10 minutes)

- Facilitate a discussion about what makes up an ecosystem.
 - Make sure students understand that they don't just have to watch the birds and mammals, but they can observe the grasses, rocks, water, etc.
- Review the instructions for how to observe and write in the field guide.
 1. When you see or hear something of interest...Try to use wide angle vision to detect movement or color. When you find an animal or hear a bird, follow it the whole time to observe its behavior. We do not want you to hunt for specific animals; we are simply observing what lives or visits LGL. Just listen and watch for a few minutes before recording anything.
 2. Look for what is influencing a critter's behavior. Is it raining? Is there a smell? Is there an ant hill or burrow or scattered food?
 3. Watch for patterns in behavior. Does the bird always return to the same spot on the ground, the same branch in the tree? Does the critter have anything in its mouth? What kind of sounds is it making? Silent? Are you sure?
 4. Every time you begin writing, start with your name, date and time. Next, write down observations. For example: What does it look like? Is it alive or dead? Describe the area that it is occupying. There is always the option to draw or make a sketch or write a story about it. Note if you have found any other signs of life or something of interest.
 5. Option to make a sound map. Mark an "X" for where you stand in the center of a blank page. Write or draw around the "X" to show where sounds are coming from. Begin with all the sounds that you can hear and then note other sounds.
 6. When you hear the leader's signal, find the leader and return quietly with the group to share observations and turn in notes.

Share observations (5 minutes)

- Gather group into a sharing circle.
- Ask the group to share – "What did you observe?"

- Each student should report an observation and or show the LGL leader the notes or drawings in their journals.
- Discuss the fact that ecosystems and wildlife observation could be done anywhere, even at a park, on a sidewalk or in a backyard. All you need to do is look and listen.
- Instruct students to return the materials (bug boxes, binoculars, field guides) and rotate to the next activity with their journals and writing utensils.

Assessment/Evaluation:

Review the student's journals/observation logs to check for understanding and comprehension of ecosystems.

Additional/Optional Activities:

Plot Sampling

If we gather information about the plants, animals, soil and water, we can monitor it over time to see if any changes occur. Discuss what sort of changes might occur here. In order for our data to be accurate we must do it scientifically, so we will set up two plots in two random areas, run some experiments and do some investigating of the plants, animals, soil and water. Let's start with the plants.

Record our findings from our research, in our notebooks and in the LGL notebook. Once we know what plant and animal species live here, what special habitat needs they have, and if any are threatened or endangered, we or other scientists like us, can use this recorded evidence to justify what land uses are or are not appropriate for this area.

Using the rope or hula-hoop to define an area fairly accessible and have two students place one on the ground (off the trail). Divide them into three groups to do the studies. Explain that each group will be recording plant, animal, soil and water (if present) information within the circle.

Plants Using the plant guides identify which plants you can.
Have them record the types and numbers of plants.
What is the most abundant plant? Why might that be?

Animals Look for signs of animal life: scat, tracks, bones, insects, birds, reptiles, etc.
Discuss what kind of habitat this area provides and speculate what animals might be here if humans were not! Use the guides for pictures or information.
Record any species or signs found.

Soil Soil type - Begin the soil activities with determining the formation of soil, then soil texture and type. Have them pick up some humus and sort through it to discuss how organic materials, dead plant matter, insects, fungus, etc. form soil.
Soil texture - Have a volunteer dig a 6" pit. Have them pick up a little of the underlying soil and try to do the roll test. If the soil forms together and rolls between your fingers, it has clay and possibly silt characteristics. If it does not roll or stay together it is sandier. These are simple hands-on ways to determine type and texture.

Temperature - place soil thermometer at various locations, i.e. under vegetation, in the open, in the trail, and compare each area's results.

Water If there is water present discuss the source, the quantity, and determine if it is seasonal.

"What makes a bird a bird?"

Wings, Feathers (light weight), Warm blood, High metabolism, Air sacs - complex respiratory system, Strong and large heart, Lay eggs instead of carrying offspring, Have a bill rather than teeth, No bladder or urethra

Flight demonstration

Have a student stand on a chair and try to fly. Why doesn't it work and what is needed? Give the student a pair of wings (cardboard with tissue) and ask them to try again. Still doesn't work. Why? It has been found that an average size adult would need a 280-foot wingspan to get off the ground. What kind of muscle would it take to move a 140-foot wing? How would our skeleton have to change?

Sound Maps

The objective of this activity is to:

- a.) Listen for as many birds as possible
- b.) Understand that it is possible ID a bird by it's call
- c.) There are more birds than we can actually see.
- d.) One bird can make different sounds (call/song/alarm)

Give each student a blank index card and a pencil. Each student finds a spot to sit by themselves where they cannot talk to another student. Have them put an 'X' in the center of their card representing the place where they are sitting. Each time they hear a bird call they mark it on their card relative to where they are sitting.

Tracking

Walk around with eyes towards the ground, around tree trunks or branches to look for signs of animal life. Maybe feathers, fur, scat, broken twigs, scratches on a tree trunk, hills or holes, etc.

Build a nest

Using found objects, try to build a nest for a bird. Discuss what considerations must be made. (Strength, durability, flexibility, warmth, water proof.) It brings home just how complex nests are.

Bird Feeders

Depending on how much time you have, either build bird feeders and/or houses, repair any that need repair or restock the birdseed. The instructor may want to touch upon why feeders and

houses are helpful in urban areas. Also, if one has a bird feeder, make sure they are well stocked, especially during the winter, since birds become dependent on the feeders.

Teambuilding – “Obstacle Course”

Object: To build trust, make new friends, have fun and learn teamwork skills.

Game objectives: To get a blindfolded team member through/past the obstacles without touching any of them.

Procedure: Create a visual boundary with a rope or backpacks and fill the space with benches, hoops, boards, water bottles, someone with their arms out or whatever is around. The only people allowed in the course have blindfolds on, the only way to get someone safely through is with verbal communication. There are a couple ways to lead this activity; either one person goes through with the entire group helping that one person, or the group is divided into buddies and each buddy tries to get their buddy through. With one person, the team discovers that they need to allow one person to give directions at a time. With the buddy version, trust is built and everyone participates.