



First Explorers

Grade: 1

Subject Areas:

Life science, Investigation and Experimentation, Social Science

Skills: describing, investigating, sensing, observing

Duration: 1 hour

Connections: hunting, tracking, habitats, wildlife, Native Americans

Vocabulary

organism

habitat

animal signs

explore

observe

signs

isopods

Objective:

Students will apply and develop skills in observation by investigating signs of animals in a nearby natural area.

Materials

- blindfolds (optional)
- magnifying glasses or loupes
- hula hoops (optional)
- a blanket or ground cloth (optional)
- nature sounds (optional)
- a tray of assorted classroom materials (optional)

Standards

Strands: Excellence in Environmental Education Guidelines

Strand 1 — Questioning and Analysis: C) Collecting Information:

Learners are able to locate and collect information about the environment and environmental topics.

Strand 2 — Knowledge of Environmental Processes and Systems

Strand 2.2 The Living Environment: A) Organisms, populations, and communities:

Learners understand basic similarities and differences among a wide variety of living organisms. They understand the concept of habitat. **C) Systems and connections:** Learners understand basic ways in which organisms are related to their environments and to other organisms.

Strand 2.3 Humans and Their Societies: B) Culture: Learners understand that experiences and places may be interpreted differently by people with different cultural backgrounds, at different times, or with other frames of reference.

Strand 2.4 Environment and Society: B) Places: Learners understand that places differ in their physical and human characteristics.

Life Science: 2a: Students know different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places. **2b:** Students know both plants and animals need water, animals need food, and plants need light.

2c: Students know animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

Investigation and Experimentation: 4a: Draw pictures that portray some features of the thing being described. **4d:** Describe the relative position of objects by using two references (e.g., above and next to, below and left of).

Background

Identifying Life

Anywhere you look you are apt to find evidence of the cornucopia of living things that share the planet with us. Even the most sterile places harbor life. In towns and cities, plants spring up out of cracks in sidewalks, rodents take up refuge in poorly maintained places and birds nest on rooftops. Hardy plants grow out of bare asphalt and, not long after, things like spiders and insects begin to take up residency.

Around 360 BC, the western world began to categorize life in a systematic way mostly through research done by Aristotle, a famous philosopher of the time. He classified life into two large groups: plants and animals. During this time, many organisms were overlooked because of lack of knowledge and limited technology. After peering through microscopes over 1,000 years later, a vast new layer of life was discovered—too small for the naked eye to see. Today we know microscopic organisms live just about everywhere. An organism is another word used for any living thing. Today, over 2 million species of organisms have been identified and classified and more are discovered every day.

How scientists group or sort living things depends on many factors. Scientists that sort and classify organisms are called taxonomists. They group them by comparing similar features and evolutionary relationships.

Life is now commonly categorized into three domains and within these domains, six kingdoms. Bacteria is divided into two kingdoms: ancient forms called archaeobacteria, and more

common forms called eubacteria. The more familiar organisms most people recognize fall into one of the three kingdoms: plant, animal or fungi. All other organisms are clumped into the kingdom Protista, which is a miscellaneous group. This kingdom includes protozoans (early pre-animals) and algae.

Nature Detective

Every living thing has four basic needs: food, water, shelter and space. Where an organism acquires these, is called a **habitat**. Habitats vary greatly in size and appearance. The smaller the critter the smaller the habitat. The

different parts of a school yard offer an assortment of habitats for kids to explore. To **explore** requires one to look closely at something. It means to investigate, study or analyze.

If somebody intentionally explores a place, looking for evidence of life, a whole world unfolds. One can see signs of defoliation, digestion, decomposition, and occupation just about anywhere one looks. Of course, finding plant life is much easier than finding animal life. However, signs of animals are around, if sometimes only subtle; like a nibbled leaf tip or a scratched tree trunk. With practice, one can begin to see abundant **animal signs** like tracks and scat. Getting kids out to explore animal signs is a lot of

Local Connection

Looking for Tracks

A great way to identify what creatures have shared a road, trail or other location with you is to look for tracks. Soft areas like river banks or dusty roads are a good place to start. Ideally you don't want a lot of traffic over the tracks before you begin looking, so the best time to search for them is early morning.

Interpreting tracks using a beginner's guide is a great way to start. Some books will show animal scat as well as tracks. Scat is another name for poop, and the two used together can reinforce someone's predictions. There are many other signs that can give clues including broken sticks and bruised leaves. If you don't want to learn from a book contact our local expert: Kim Cabrera. She works great with kids, teaches classes and does the occasional free workshop.

You can contact Kim at: tracker777@hotmail.com

Tracking puts a pulse on the instincts of our hunter-gatherer ancestors. It can truly be an investigative science and a fun adventure.

fun and a great way to better connect them with nature.

The ability to observe well takes practice and patience. **Observation** is the first step in the scientific process. Through observation, questions emerge. Young children are eager to discover the world around them. They have an inherent curiosity. If you introduce something new to a child they instinctively observe, prod, stretch their imaginations and begin to categorize what they see. Observation and sorting are important parts of scientific thinking. By encouraging kids to observe an area outside, they can begin to acquire skills that will support, enrich, vitalize and complement a host of content areas.

Take Action

One of the simplest ways to observe nature with any group, is to take them outside and have them sit still and quiet for as long as possible. What people tend to lose sight of when trying to see wildlife is many animals are skittish. A loud sound or a sudden movement is all it takes to startle an animal like a bird or a squirrel. Laying still, hiding and running away have become survival mechanisms for them. Another thing that scares wildlife away are domestic cats and dogs. Cats are responsible for killing over 30 million birds in California alone. Dogs often chase wildlife and bark loudly. Studies have shown that just the smell of dogs keeps animals away from their natural foraging areas. All of these things make observing wildlife a challenge.

Most of the King Range National Conservation Area (NCA) is remote and still wild. The Native American tribes here include the Sinkiyone and Mattole. Further east, the Lassik and Wailaki tribes live. (change to

past tense?) Their ancestors prided themselves with being connected to the land and only taking what they needed to survive. In order to survive in the old days, one had to be a skilled hunter. Locally, the tribes hunted mostly deer and elk. There was abundant salmon in the streams which was a mainstay of their diet. They also ate a variety of berries, roots and acorns.

Nature observation can come in many forms. Students can sketch a scene, take pictures of critters they see, or write descriptions in a field journal. Younger students often succeed at finding signs of wildlife by getting them to use props and prompts. A prompt can be a saying like: “What do I see?” , “I see a _____” . Props include things like a pair of binoculars or a magnifying glass. The best time to observe wildlife is in the morning and when the weather is clear. Of course, avoiding noises is good too. You don’t want to go out looking for animals right after recess or when the lawn is being mowed, for instance.

If larger animals are scarce in an area, focus on finding the little critters or focus on plants. Plants have different patterns that can be observed. It is a sure bet to find invertebrates like insects and worms if you take the time to lift up a stone or overturn decayed leaves. Isopods are sow bugs and pill bugs. These help with decay and can be found commonly in leaf litter and other decayed plant material. Easily spotted groups of animals include birds, squirrels, frogs, ants, spiders, beetles, butterflies, flies, worms, and isopods. By learning about the natural world around us, one can begin to appreciate the diversity of life. Each discovery is one step closer to understanding the natural world.

Activity: Nature Exploration

Preparation

Going out early and getting a feel for what areas are most productive around the school yard beforehand, is a good idea. Finding a bird's nest or something like a gopher mound is a good way to make the nature walk more interesting. You can even have them look for a particular object given clues. Another option is to play nature sounds in the classroom before or during discussion.

Procedure

1. This lesson will utilize a host of ways of getting young students to become better observers of nature. First they will enhance their "hearing" by going out with blindfolds on and listening quietly for a whole minute in a natural area near the school. Next, they will focus on "seeing". They will look for signs of animals at different heights: high, middle and low zones. By doing this they can develop a focal point and broaden their scope of the world outside.

2. Before going outside, a quick activity to get them to observe closely will begin to train them to notice things. Have a tray with about a dozen items on it. Possible items include a pencil, paste, a book, a toy, a cup, etc. Tell the students they need to look at the tray very closely. Let them know that you are going to ask them to tell you what they see. Next, pass the tray in front of them, at their eye level, for about 10 seconds total. Hide the tray and then ask them to try and remember as many things from it as they can. This is basically a memory game.

Materials

- blindfolds (optional)
- magnifying glasses or loupes
- hula hoops (optional)
- a blanket or ground cloth (optional)
- nature sounds (optional)
- a tray of assorted classroom materials (optional)

List these items on the board. After they have shared their observations, show them the tray and compare items on the tray to the list on the board. See if any one thing was missed by most. Ask them to guess why they think this one item was missed by most people. Remind them that when they go outside, they will need to try and find those often overlooked things.

3. Gather the students into a common area and begin to review their senses (taste, smell, sight, touch, and hearing). Ask them a few questions about what it takes to prepare for an outside nature expedition. Getting them to understand that most wildlife has learned to hide from humans making this exercise more like a treasure hunt.

4. Explain to the students that they are going to go on a nature walk. They are going to look for signs of wildlife. They will easily see plants, but it takes greater skill and concentration to find animals. Remind them that humans are animals too and that they are bound to see signs of the human animal like litter and fences. Direct students to places with the highest likelihood of seeing living animals. While they explore outside,

it is very important that clear boundaries are made. One adult may want to lead a group of 6-8 students especially in the beginning when blindfolds are used. You will want to make sure students stay clear of any hazards like poison oak or broken glass. Eventually, the students should

- *Has anyone ever gone on a field trip?*
- *Who knows who Dora the Explorer is?*
- *How can somebody explore an area?*
- *What do dogs use to explore a field? (smell)*
- *What do birds use to explore a field? (sight)*
- *How can someone explore an area in the dark? (listen)*
- *What kinds of things should we look for during a nature exploration?*
- *What types of wildlife might we see outside today?*
- *What will happen to wildlife if we make noise?*
- *What skills do we need to use to look for wildlife?*
- *What kind of signs can we look for on a nature walk?*



Activity: Nature Exploration (cont.)

explore different habitats such as a field, a puddle or stream, and a forest. These different habitats can be compared and discussed afterwards. Lastly, have them look at a low zone in greater detail using either magnifiers or seeing what lives in the area of a hula hoop or both. If hula hoops are used carry them with you and place them in safe areas of interest at the end. If there are older students in the group, you may want to only give them the magnifiers.

5. When humans explore nature they mostly use their ears and their eyes. Play up the idea that they all need to be on high alert like they are on a hunt. Except this time, if they find an animal they can record it in their journal later and/or share the experience with the class. Remind them that they are to not hurt it or collect it (unless approved by an adult). Also, remind them not to taste anything. They are trying to listen and look. Keep in mind that some children may have negative reactions to dirt, and animals like worms and ants. These students, once identified, should walk with a buddy.

6. A good exercise allowing students to get “tuned” in (listening) to an area is to blindfold them. Walk them out to the area first then place blindfolds around their eyes. They may hear birds, insects or even the nearby neighborhood noises. After one or two minutes of listening, have them remove their blindfolds. Next, have them share what they heard and then move onto the next exploration.

7. There are many ways to have the students explore the outside world. One way is to have them look at high, middle and low zones. They can lay down to look up high in branches. When they look low, encourage them to look under logs and rocks and things. Again, stress the importance of disturbing an area as little as possible. They should stay quiet and walk like they are sneaking up on something.

8. Once somebody finds something exciting, share it with the group. Describe its relative position by using two references. This is a good skill for the students to learn at this age. For example, “the birds nest is in the big branch on the right of the tree’s trunk, next to the bright yellow leaf.” You might also point to the object. It is not uncommon for young students to pretend to see something that is not there. In this exercise, however, they are trying to observe the real world.

9. In a rich area, they can collect plant and animal materials and put them on a communal blanket for sharing. During this time, you may want to hand out magnifying glasses or loupes. Another option is to have them look closely inside the defined area of a hula hoop. The site for the hula hoop can be determined many ways including the toss of an object behind the back. Where the object falls, is where the hoop is centered and the investigation begins. The investigation should be done by a small group of 6-8 students.

10. Depending on the ages and experiences of the group, the nature exploration can be tailored to challenge their observational skills. Specific animal signs can be looked for like finding evidence of eating and digestion; or looking for signs of occupation like nesting and burrowing. Students can look for certain colors and textures too. Older students can begin to classifying various groups they observe.

11. In order to review and reflect upon what they have learned during their nature walk, have the students share what they observed. Afterwards, back in the classroom, have the students draw a picture of themselves on the nature walk. They should draw at least five things that they observed.

Extensions

- Begin a nature collection inside the classroom. The nature collection can be sorted by different groups like plant, animal, mineral, etc.
- Share nature sightings for two weeks include weather reports and sightings at home.
- Make an interpretive nature trail on the school grounds for future nature walks.
- Look for evidence of eating in a nearby habitat and then look at different animal skulls. Discuss how different animals eat. (sharp teeth, flat teeth, no teeth, etc.)
- Collect books about nature and have students learn about natural areas in other places.

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