

Microhike Outdoor Activity

Observations & Inferences



SYNOPSIS

Students explore a small area of the natural world by making observations and inferences.

OBJECTIVES

Students will be able to:

- describe observations based on their senses
- develop inferences based on their observations

VOCABULARY

- observation
 - obtaining knowledge of the external environment through the senses
- inference
 - An inference is a conclusion or a deduction made from facts. It is not stated, but rather implied. For instance, if I observe that a wall has chips in the paint and I have observed children playing ball against that wall, I may infer that the chips in the paint are a result of the ball hitting the wall. An inference, after further research, may be discovered to not be true.

MATERIALS

- natural outdoor area
- something that can be used to mark off the study area (e.g., a hoop, a piece of string or yarn, rocks)
- magnifying lens (optional)
- notebook paper (optional)
- pencil (optional)

NOTE ON AGE LEVEL / DIFFICULTY

This activity has two main purposes. One is to teach students the difference between an observation and an inference. The second is to provide a hands-on experience that results in the students realizing that there are an abundance of

processes and natural elements even in small areas of our environment. Depending on the way this activity is used, and the age group, the emphasis may be on either or both of these.

PROCEDURES

1. Tell the students to look around them and take note of some of the things they can see, hear, touch, feel, and (if appropriate) taste. Explain that when they receive knowledge of the external environment through their senses, they are making **observations**.
2. Now tell them to choose one of the things they observed and think about why it looks the way it does, or where it came from, why it is a certain color, etc. Their thoughts should be based on what they observed about the object. Once a few students have shared their observations and thoughts, tell them they have made an **inference**.
3. Explain that scientists use observations to collect data from their experiments and studies, and then make inferences based on their observations and what they have experienced or learned in the past. An inference may be used to, for instance, explain why or how a natural phenomenon occurs.
4. Tell the students they are going to go on a “Microhike,” to make observations and inferences about their environment. Provide each student with a magnifying lens, string, notebook paper, and pencil.
5. In an open area, have each student find a spot upon which to lay their string/hoop to create a boundary. They are to first make observations using their senses about which and how many living and nonliving things are in their microhike area, what the living things are doing, the type of soil, etc. They may take notes and/or draw in their notebook. Give them several minutes to focus on their observations.
6. Once the students have made detailed observations, tell them to choose something in their area to create an inference. For instance, if a student observes ants carrying pieces of seeds in their legs, the student may infer that the ants are carrying the seeds back to the nest to feed the ant larvae. Another student may infer that the wet soil in their microhike area is a result of condensation formed on the plants nearby.
7. The students should be given time to share their observations and inferences with a few other students or the class.

CHECK FOR UNDERSTANDING

- Have the students complete the same activity in a new area.
- Provide the students with a photograph of a natural area and make observations and inferences.
- Have them describe the difference between an observation and an inference.

EXTENSIONS

- Students move to a new microhike area already observed by a classmate and repeat the activity. The students discuss the similarities and differences between their observations and inferences.
- Prior to observing a microhike area, students make ‘big picture’ observations about the environment. They make predictions about what they will find in their microhike areas. Once they have completed the microhike they make inferences about why or why not their predictions were accurate.
- Students conduct microhikes in a variety of plant communities / environments and compare and contrast the number and types of living things found.