

ENVIRONMENTAL BAROMETER

OBJECTIVES

Students will: 1) observe and count wildlife in an area; 2) discuss why the wildlife is or is not present; and 3) consider ways in which the presence of wildlife can be seen as an indicator of environmental quality.

METHOD

Students go outside to observe and count or estimate wildlife in an area; do the same in another setting to compare findings; and—optionally—make a school “environmental barometer.”

BACKGROUND

Some species of animals are more adapted to difficult conditions than others. Some, in contrast, are so specialized that it is quite difficult for them to find the food, water, shelter and other things they need.

Wildlife serves as an important indicator of the overall health of an area of the environment. If there are few wild animals—or little evidence of wildlife—present in an area, it is likely that there is little available food, water, or shelter in the area as well. There may not be enough space.

Even if these necessary components of habitat are available, they may not be suitably arranged to meet the needs of wildlife. The kinds of wildlife present are also important indicators. Birds of prey, for example, are high on the food chain. If they are present in an area, that is an indicator that there is some variety of

other animals and plants in the area.

The major purpose of this activity is for students to consider the importance of wildlife as an indicator of environmental quality.

MATERIALS

writing materials; poster board or construction paper; marking pens or crayons

PROCEDURE

1. Discuss the diversity of wildlife. Make sure students understand that the term wildlife includes insects, spiders and other invertebrates, as well as birds, fish, reptiles, mammals and amphibians.
2. Go outside with your students on the school grounds to do a wildlife count. Each student should work alone and have writing materials. Ask each student to find a spot, sit quietly for ten minutes, and observe. (Quiet is very important to increase the likelihood of seeing wildlife.) The students should record the kinds and numbers of any wildlife they see. They can include **evidence** of wildlife, in addition to actual sightings. Ask the students to total the number of each kind of wildlife they observe plus make a grand total. If they find evidence rather than sighting wildlife, they should estimate the numbers. Put all the students' information on one master chart.
3. Next, take the students to a setting where wildlife is more abundant. Repeat the process—with each student observing quietly for ten minutes and recording observations.
4. Make a master chart of the information from this second environment.
5. Compare the information from the two charts. Was there any difference in the two settings? Why or why not? Which environment seemed to have the most **different kinds** of wildlife? Where were there the most of any one kind of wildlife, like the most birds? What kinds of food, water, shelter and space were in each setting to support the survival needs of wildlife? If there were few animals, or many, in either setting—what might this tell us about the quality of

Age: Grades 3-5

Subjects: Science, Math, Social Studies

Skills: analysis, classification, comparing similarities and differences, computation, discussion, evaluation, observation, synthesis

Duration: two 30 to 45-minute periods

Group Size: any

Setting: outdoors and indoors

Conceptual Framework Reference: I.A., I.B., I.C., I.C.1., I.C.2., I.C.3., I.D., II.B., II.B.1., II.B.2., II.B.3., II.B.4., IV.C., IV.D.4., IV.D.5.

Key Vocabulary: evidence, wildlife, environmental quality, habitat, barometer

Appendices: Outdoors, Field Ethics, Taking Action

the environment? What is environmental quality? Can wildlife be an indicator of environmental quality? Talk about whether it is realistic for every environment to be a good habitat for varieties of wildlife. Discuss the possibility and appropriateness of making efforts to improve environments as habitats for wildlife and homes for people too.

NOTE TO TEACHER: Several possibilities may arise when doing this activity with your students. Your school may be in an area where there are few, if any, wild animals present—with little access to any other area with much wildlife. If there is no significant difference between your observations in the two settings, you can still talk with the students about what this means. It is also possible that your school is in a wildlife-rich setting—virtually as rich as any other setting in the area. Again, it is all right if there is no significant difference in the number and variety of wildlife observed in each area. **You may also choose to make the observations and create the information charts only for one setting, simply analyzing and discussing the quality of the one environment—without using another for comparison.**

EXTENSION

Make an environmental barometer to indicate the quality of your school environment as a habitat for wildlife. Share your barometer with other classes. **OPTIONAL:** Show seasonal changes in the barometer's readings.

AQUATIC EXTENSIONS

1. Make observations concerning the availability, apparent quality and suitability for wildlife needs of the water you find in each of the habitats you investigate. Is there more wildlife apparent in those areas where there is more water? If yes, what seem to be the contributing factors? If no, what seem to be the contributing factors?
2. Make an "environmental barometer" comparing the quality of two different aquatic habitats as places in which a diversity of wildlife can successfully live. Explain the reasons for the differences in the two areas.

EVALUATION

1. Each year, thousands of birdwatchers participate in a National Audubon Society bird count all over the United States. The information is kept and compared from year to year to see if changes occur in the total number of birds or in how many different kinds of birds are sighted. If a steady and long decrease in the bird populations occurred over a period of five years, should **everyone** be concerned—and not just the birdwatchers? Explain your response.
2. Make a list of things we do in cities and towns that tend to **decrease** the amount and kinds of wildlife that lives there. Make a list of things we sometimes do in cities and towns that tend to **increase** the amounts of some kinds of wildlife.
3. Identify and describe three things that people could do to increase the numbers and kinds of wildlife living in an area that has little evidence of wildlife.

