It's What's Inside That Counts

Lesson 1

Summary

This lesson provides a general introduction to the concepts of biodiversity. Students will conduct an outdoor experiment exploring different habitats in the school ground.

Activity Info

Level: Grade 4

Subject: Life Science, Habitats and Communities

Estimated duration: 45 to 60 minutes for activity, 20 minutes for wrap up

Materials: yarn or string cut and tied into 3 m lengths or individual hula hoops, loose leaf paper, pencils

NOTE: Depending upon the season and weather, you might consider doing the entire lesson outside.

Learning Outcomes

Students will:

- Explore the link between meeting basic needs and habitat.
- Recognize that structural and behavioural adaptations make organisms well-suited to a particular habitat, but not to another.
- Explore the dependency of organisms on their habitat as well as on the relationships within that habitat.

Teacher Background

Biodiversity is all around us. We can find it in the forests of western Alberta, in the clear Margaree River in Cape Breton, and in the high tundra of the Yukon. Each of these natural wonders holds a vast wealth of life, both plant and animal.

But we can find biodiversity right under our noses. For example, downtown Toronto, with its tall buildings, is an ideal habitat for pigeons. The presence of pigeons makes it attractive habitat for peregrine falcon.

Even looking at the cracks in a sidewalk, you may find grass springing through and lady bugs and ants living there.

In this lesson, students will explore the biodiversity of three different sites in their school ground. They will first predict what plants and animals they will find on those sites. Then they will carry out a simple field investigation.

Your students may be surprised at the complexity of life in these apparently simple places.

Procedure

Step 1

Begin an informal class discussion about habitat, asking your students questions such as:

- What is habitat?
- What makes up a habitat (food, water, shelter, space)?
- What are the differences between living and non-living things?

Have them look in the school ground for examples of living things (such as squirrels, ants, birds, grass, bushes) and non-living things (such as a flag pole, cars, a basketball hoop, pavement).

Explain that different plants and animals live in different environments and have different habitat requirements. Ask your students to compare the habitat of a few plants (hint: some plants may need shade while others need sunlight) or animals they might find in the school ground.

Step 2

Introduce the concept of biodiversity by asking your students where they would expect to find the greatest variety of life in

their school ground. Biodiversity is simply that variety of plants and animals.

Step 3

Divide the class into groups of three or four students and let them know that they will become Diversity Investigators for their school ground. Explain that they will be investigating three different areas or habitats around the school for evidence of a variety of plants and animals (biodiversity). The students can take on roles such as Chief Investigator, Chief Recorder, Chief Reporter and Field Investigators.

Step 4

With your students, select three habitat sites in the school ground that they will investigate (such as asphalt, soccer field, forest, garden). They will be recording their habitat observations on their Diversity Investigator Evidence Log.

Step 5

Have each Investigation Team make up an Evidence Log (using the example provided). Ask students to think about the three sites chosen and predict what they will find on each. Have them record their predictions on their Evidence Log.

Step 6

Explain how the outdoor part of the activity will work. Each team will visit each habitat site, place their string on the ground defining the area of the study, and then write down everything they find inside that area.

Step 7

Hand out a piece of string to each team. Take the teams outside and assign them their first habitat site. Rotate the teams through each of the three locations, spending approximately five minutes at each habitat site recording their observations.

Step 8

When the students have completed their investigations, bring the class together and have the Reporters share their group's investigation observations. You may wish to record the results on a flip chart or on the board.

Diversity Investigator Evidence Log

	Site 1	Site 2	Site 3
Predictions			
Non-Living			
Living			
Observations			
Non-Living			
Living			

Step 9

Discuss the students' key discoveries by asking such questions as:

- What did you find at each habitat site?
- Were your predictions the same as what you actually found and saw?
- Where did you find the greatest biodiversity?
- Was there more life on the asphalt or on the lawn?
- How could the class increase the variety of life in the school grounds?

- Biodiversity is critical to the survival of the planet. Ask the students to give suggestions for increasing biodiversity in their school ground (for example planting native plants, or building bird feeders). If you are interested in taking this activity further you might refer to the Green Teacher Magazine 2001 Fall/ Winter publication for an article on school yard trees. *Greening School Grounds – Creating Habitats for Learning*, is a compendium of school yard greening articles and activities also available from Green Teacher.

Extension

- Journal writing is an important component of the curriculum. Have the students use creative writing skills to write a poem or story about one of the three habitats they observed. They can describe what may have been there 100 years ago, what is there now and what might be there 100 years from now.