



The Importance of Biodiversity

Organization:

Title: The Importance of Biodiversity

Summary: Students explore two different types of ecosystems (rich habitat vs. barren habitat) to understand why biodiversity is important for an ecosystem. Students explore how biodiversity in an ecosystem depends on many different factors (water, shelter, food, space). Through an interactive activity, students will see how an ecosystem can collapse when one or more of these factors are threatened.

Inquiry Question: Inquiry Question 2. What is Biodiversity? Why is Biodiversity Important? How does Biodiversity Impact Ecosystem Resiliency?

Duration: 1 - 1.25 hours

Learning Environment: Outdoor

Curriculum Links: Science and Technology: A1.1, A1.2, A1.5, B1.2, B2.1, B2.2 B2.3

Season: Preferably Summer, Spring or Fall

Materials:

- Outdoor Learning Journals
- Index Cards
- Writing Tools
- String/Yarn
- Short section from the ten-minute video accompanying this Bundle of Dr. Stephen Lougheed discussing biodiversity
- Rich vs. Barren Habitat Activity.pdf
- Habitat Lap Sit.pdf

Meta Data:

Content Type: Activity

Bundle: Gifts of the Earth

Theme: Biodiversity Crisis, Contaminants in the Environment

Subject Area: Biology, Environmental Education, Science

Curriculum Focus: 7

Instructions:

1. Teacher begins by facilitating a class discussion posing the following question(s) to students:
 - In a rich ecosystem with lots of plant and animal species (like a meadow or forest) what do you think will happen to the animals and plant relatives living in the area if one species is removed?



- Similarly, in an ecosystem with few plant and animal species living in it (like a mowed lawn) what do you think will happen to the other animals and plant relatives living in the area if a species disappears?

2. Students share their thinking.

3. Students find a “sit spot” (introduced in the Teacher’s Guide) in a rich ecosystem (Forest or Meadow). Students sit quietly by themselves and observe everything around them. Students record their observations in their Outdoor Learning Journals (Outdoor Learning Journals are introduced in the Teacher’s Guide).

4. Journals will include space for students to write down (and draw) what they see, hear, smell etc., record their questions, and indicate how they feel.

5. Teacher can then hold a Talking Circle (Proper protocols regarding how to facilitate a Talking Circle are introduced in the Teacher’s Guide and in Teacher Professional Development Sessions). In the Circle, students share their observations with each other.

6. Next, teacher repeats the above activity in a barren ecosystem ie: a mowed lawn or somewhere on the schoolground that starkly contrasts with the first location.

7. Teacher then facilitates the following activity twice. Once for the rich habitat and once again for the barren habitat. Instructions regarding how to facilitate will be included in the **Rich vs. Barren Habitat Activity.pdf** Instructions.

Students make a set of index cards for the different components of the first (rich) ecosystem and a set of cards for components of the second (barren) ecosystem. Students should be encouraged to use specific examples that they observed ie: producers and consumers and decomposers (bacteria and fungi). There should be one card for each student.

8. Students compare results of what it was like running the activity in two different ecosystems. At the end of both activities’ students should see that the ecosystems with more diversity can withstand changes associated with invasive species, pollution, hunting, drought, climate changes, etc. more effectively than ecosystems with less biodiversity.

9. Students make a record of their learning that they can be revisited later in their Outdoor Learning Journal or as a class (picture or mind map on chart paper that is displayed in the classroom)

10. To consolidate learning students can watch clip embedded in the Gifts of the Earth video featuring Dr. Stephen Loughheed discussing how species diversity enhances biodiversity.



QUILLS

Queen's University Indigenous Land-Based Learning STEM
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Optional Extension: Habitat Lap Sit

1. In this activity, adapted from 'Project WILD' students explore how different elements in an ecosystem impact biodiversity and what happens to ecosystem resiliency when plant and animal relatives are negatively impacted. Activity instructions found in **the Habitat Lap Sit.pdf**.
2. Teacher closes activity by asking students what can be done to maintain biodiversity.