Outdoor Learning Lesson Plan

Identifying Biodiversity

Objective: Students will make observations and identify organisms in nature in order to understand biodiversity.

Curriculum: This exercise can be adapted for grades 7, 10 and 12. See www.cpawsmb.org/curriculum-connections for Manitoba curriculum connections.

Learning Goals:

- ❏ Students use technology to identify organisms in a local ecosystem
- ❏ Students will discover the importance of individual organisms in a local ecosystem
- ❏ Students will investigate the relationship between organisms in a local ecosystem
- ❏ Students will be able to use scientific vocabulary to describe natural observations
- ❏ Students predict the consequences of changes to biodiversity
- ❏ Students will understand and appreciate the benefits humans receive from organisms in a diverse ecosystem

Resources:

- ❏ Go Wild Manitoba
- ❏ iNaturalist app (Manitoba)
- ❏ Canada's Forests - All Things Big and Small (Volume 3: Biodiversity)

Materials:

- ❏ Clipboards
- ❏ Lined paper
- ❏ Pencils
- ❏ Phones/tablets to use ID apps (i.e. iNaturalist, etc.)

Time: 60 minutes

Activate:

1. Introduce the boreal forest in the context of science and/or social studies curriculum; see www.cpawsmb.org/curriculum-connections for resources
2. Discuss the importance of the boreal forest to indigenous communities, biodiversity, and climate change, as well as issues facing the prosperity of the forest
3. Have students download a variety of ID apps onto their phones and/or classroom tablets and familiarize themselves with how they work

Acquire:

4. Break students into small groups and provide them with clipboards, lined paper, pencils, and devices
5. Walk to a local green space or plan a field trip to Assiniboine Forest (or related location)
6. Students work as a group to identify organisms they observe in their environment using apps
7. Students list the organisms they've observed on paper, including a short description and/or sketch

Apply:

8. Students split up the organisms they've identified evenly as a group; each student in the group takes a section of the organisms to research the importance of that organism with respect to other organisms and humans in the local ecosystem on their own time (classroom time or homework)
9. Groups reconvene and review their research. Do different organisms share similar benefits? Are there any unique benefits among the organisms? Did any of the research surprise you?
10. Have students create food chains/ food webs using the species they identified.
11. Instruct students to randomly eliminate 50% of the organisms they've identified to simulate a reduction of biodiversity. Be sure students identify the missing organisms in the food chains and webs by crossing them out.
12. As a group or entire class, discuss what has been lost in your local ecosystem. What benefits have been lost? What would the consequences be if these organisms were extirpated from the local environment? What are some realistic causes for biodiversity to be impacted in this way in the local ecosystem?

Conclusion: Evaluate individual students based on identification, research, and group work, or have peers evaluate the members in their group on their contributions to the group.