

OUTDOOR LEARNING LESSON PLAN

WALK IN A SCIENTIST'S SHOES

Objective: Students are exposed to different areas of science and research methods by conducting field work and observing their environment during a guided walk through a local ecosystem.

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

Learning Goals:

- Students use research techniques to investigate their local environment
- Students use critical thinking skills to solve problems in their environment
- Students work collaboratively to conduct research and analyze data
- Students will be able to use scientific vocabulary to describe natural observations
- Students understand the consequences of human interactions with local environments
- Students see different fields of science as potential career paths

Resources:

- [Fields of Biology](#)
- [Field Guide - Trees of Manitoba](#)
- [iNaturalist app \(Manitoba\)](#)
- [Go Wild Manitoba](#)
- [Wild Plants of Winnipeg](#)
- [Manitoba animal tracks](#)
- [17 Learning Tools For Your Next Outdoor Excursion](#)

Materials:

- Clipboards
- Paper
- Pencils
- Field guides and/or ID apps
- Field work materials (see details below to identify the supplies you'll need)

Time: 90-120+ minutes

Activate:

1. Introduce the boreal forest in the context of science and/or social studies curriculum; see www.cpawsmb.org/resources for resources

2. Discuss the importance of the boreal forest for indigenous communities, biodiversity, and climate change, as well as issues facing the prosperity of the forest
3. Plan a walking route and the field work activities in advance and review the plan with students so they know what to expect (where you're going, how long the walk is, how many activities you'll be doing, etc.)

Acquire:

4. Start walking route through a local green space or as part of a field trip to a specific area (i.e. Assiniboine Forest)
5. Stop along the route to make observations; try a mix of observations where you point out and talk about significant moments/ species and other times where students make observations on their own
 - a. There will be teachable moments in the observations you make related to curriculum (see curriculum connections here www.cpawsmb.org/curriculumn-connections)
 - b. Encourage students to take notes as you made observations as a group, writing down key terminology, species you've identified, etc.
6. During your observations, find opportunities to talk about different fields of science (i.e. biology, ecology, hydrology, entomology, zoology, botany, ichthyology, etc.)
 - a. Discuss how and why scientists conduct field research
7. Have students conduct their own field work and research; here are some examples of activities you could plan for:
 - a. [Random Sampling of Dandelions](#)
 - b. [Water Quality Testing](#)
 - c. [Carbon Sequestering in Trees](#)
 - d. [Dipnetting & aquatic insect ID](#)
8. Discuss examples of field work that could be conducted:
 - a. [GPS Tracking Collars](#)
 - b. [Trail Cameras](#)
 - c. [Pitfall Traps](#)
 - d. [Observing Animal Behaviour](#)

Apply:

9. Have students write a summary report of what they did and observed during the field trip/walk; **OR**
10. Have students prepare a research paper/presentation on an area of science that they've been introduced to and a local case study on that type of research:
 - a. Describe the field of science. What does the scientist study? Why is that field of science important?
 - b. Find an example of a local scientist / case study on local research. How is this field of science being applied in the real world?

Conclusion: Evaluate individual students based on their participation on the walk and their final report/presentation. For extended learning, have a local indigenous speaker visit the class to talk about traditional ecological knowledge and discuss the relationship between traditional ecological knowledge and western science.