

Saint John's Outdoor University Field Trip Overview

Invasive Earthworms

Objective: Students will apply their existing studies of invasive species to conduct an experiment with a local invasive species. Students use the scientific method to develop a hypothesis, extract earthworms, collect data, and draw conclusions about our study question. Students will explore how humans affect the distribution of invasive species and ways to help mitigate the problems invasive species cause.

Field Activities:

Invasive Species Introduction: Students will review the terms native, nonnative, and invasive species using examples specific to Minnesota, including earthworms. They will be introduced to the visible changes brought on by earthworm invasion of the forest floor and how this affects forest ecology.

Earthworm Extraction: Students will test a hypothesis to study how human activity affects the earthworm population. Students will use liquid mustard to extract the earthworms from the soil and collect data on the current population at our chosen site.

Drawing Conclusions: Students will analyze the data collected during liquid mustard extraction and discuss whether or not the data supports their hypothesis. Students will draw conclusions about our study question including the implications about the population of invasive earthworms in Minnesota.

Key points and themes covered in each class:

- Discuss the differences between native, nonnative, and invasive species
- Examine how invasive species can negatively affect an environment
- Apply the scientific method to address a study question
- Work as citizen scientists to extract a local invasive species
- Address how human actions—even if accidental—can have ecological effects

Minnesota K-12 Academic Standards addressed during activities:

Strand	Code	Benchmark
SCIENCE		
1. The Nature of Science and Engineering	7.1.1.2.3	Generate a scientific conclusion from an investigation, clearly distinguishing between results (evidence) and conclusions (explanation).
	7.1.3.4.2	Determine and use appropriate safety procedures, tools, measurements, graphs, and mathematical analyses to describe and investigate natural and designed systems in a life science context.
4. Life Science	7.4.2.1.1	Identify a variety of populations and communities in an ecosystem and describe the relationships among the populations and communities in a stable ecosystem.
	7.4.4.1.2	Describe the ways that human activities can change the populations and communities in an ecosystem.