

Winter Ecology

Synopsis

2nd-6th



Summary

Conduct research in the snow, from temperature and structure of snow to its insulating properties. Discover the unique adaptations animals have that allow them to survive during the winter and use the snow cover to their benefit.

MN Academic Standards

supported during HNC program. More standards can be supported with pre- and post lesson activities.

Science

- 2.1.2.2.1 ~ identify & solve a problem
- 2.1.2.2.2 ~ some materials are better
- 2.2.1.1.1 ~ describe objects
- 2.3.2.2.1 ~ measure & record weather
- 3.1.1.2.3 ~ maintain records
- 3.1.1.2.4 ~ construct explanations
- 3.1.3.4.1 ~ tools to observe and record
- 4.2.1.1.1 ~ measure using tools
- 4.2.1.2.2 ~ temperature changes matter
- 4.2.3.1.3 ~ conductors and insulators
- 5.1.1.2.1 ~ questions and investigations
- 5.1.1.2.2 ~ scientific investigation
- 6.2.1.2.1 ~ evidence of physical change
- 6.2.1.2.2 ~ mass is conserved

Authenticity

Students observe real environmental variables in an experiment.

Goals & Objectives

This program will:

- Demonstrate how snow provides cover, insulation and impacts animals lives.
- Demonstrate the essential components of a shelter necessary to keep a mouse warm.

Students will be able to:

- Measure, record and describe weather conditions by using thermometers, wind meters and yard sticks
- Identify 2 layers in the snow pack
- Design and build a shelter to keep a small mammal warm in the winter
- Identify advantages and disadvantages of snow

Activities

In the Classroom

- Introduce the topic of winter ecology and how it applies to the field experiment to be conducted in Hartley Park.
- How do local animals survive winter?

In the Field

- Hike or snowshoe to a location with deep snow. Students ideally work in teams of 2 to 4. HNC educators will pass out many materials needed for conducting the experiment. They receive a small mammal (small jar with hot water in it), fur, a flag to mark where they bury their animal, a thermometer for taking pre and post body temperature of their small mammal, and data sheets. This experiment tests the insulation value of snow.

Bad Weather Alternative

In the case of extreme cold, this class could be modified to take place mostly indoors, going outside only to complete a short experiment. Indoor activities would maintain the same outcomes and similar activities.