Winter Ecology Synopsis 2nd-6th, Upper

Hartley Nature Center

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
3.1.1.1.1 Support claims with evidence
3.1.1.2.2 Science is replicable
3.1.1.2.3 Maintain records
3.1.1.2.4 Evidence based explanation
3.1.3.4.1 Tools to observe and record
4.1.2.2.2 Engineering
4.1.2.2.3 Test and evaluate solutions
4.2.1.1.1 Measure using tools
4.2.3.1.1 Heat transfer
4.2.3.2.1 Heat energy
4.2.3.1.3 Conductors and insulators
5.1.1.1.1 Why evidence
5.1.1.1.2 Science is replicable
5.1.1.1.3 Different results
5.1.1.2.2 Scientific investigation
5.1.3.4.1 Take data
6.1.3.4.1 Investigate natural system
6.2.3.2.2 Heat energy transfer

Language Arts

2.8.1.1 C, E, 2.8.3.3, 3.8.1.1 C, D, F, 3.8.3.3, 4.8.1.1 C, D, 5.8.1.1 C, D, 6.9.1.1 C, D

Math

2.3.2.2 Measure length with a ruler
3.3.2.1 Measure half distances

Social studies

2.2.1.1.1 Best choice to reach a goal

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 work in teams of 2 to 4. 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

- Students will quickly go outside to take data for their experiment then go back inside for discussion.
- Students will play games that teach how animals survive the cold Minnesota winters.

Authenticity

Students observe real environmental variables in an experiment.