



Natural Selections

*Program Guide for
middle and high school
field science*

HARRIET ALEXANDER NATURE CENTER
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Roseville, MN 55113

DIRECTIONS:

We are located in Roseville on the east side of Dale Street between County Roads B-2 and C, just 1/2 mile north of Highway 36.
Directions from 694: Go south on Lexington Avenue, then east on County Road C and south on Dale Street to the Nature Center (on your left). Directions from Highway 36: Go north on Dale Street 1/2 mile to the Nature Center (on your right.) 2014



PROGRAM INFORMATION:

We offer six science themes and multiple program options within each theme. Each individual program is 2 hours in length and is geared toward your group's age and ability level. You can choose a single program or spend a day exploring a theme in depth with two programs. Or choose two programs from different themes to get an interesting variety! See inside for program offerings.

SCHEDULING INFORMATION:

To schedule a program, please call the Harriet Alexander Nature Center at 651-792-7163. You will be asked to provide the following information: contact name, facility name, facility address and phone number, number of students, grade level(s), program(s) of choice, potential dates/times for scheduling, and any special needs.

FEE INFORMATION:

	<u>2-hr prog</u>	<u>4-hr prog</u>
>21 students:	\$6.00/student	\$10.00/student
21-45 students:	\$6.50/student	\$10.50/student
46+ students:	\$7.50/student	\$11.50/student
Minimum fee:	\$75.00	\$185.00

Teachers and chaperones are free of charge (please arrange for one adult chaperone per every fifteen students to accompany your group.) Cancellations must be made at least one week prior to a scheduled program or a \$25 fee will be charged. Lunch area available for 4-hr programs.

Secondary Teachers:

Are you short of time to develop challenging field science curriculum? Do you lack access to quality outdoor environments? Are you missing the right equipment for doing field studies? We can help!

Our staff welcomes the opportunity to work with inquiring teens and energetic adolescents. We can offer a positive and challenging experience!

At Harriet Alexander Nature Center, we offer middle and high school teachers and students a variety of field and lab experiences, including:

- *Wetland, forest and prairie environments*
- *Live animals, taxidermy, and natural artifacts*
- *Natural history library*
- *Observation bee hive*
- *Materials and equipment including:*
 - *field guides*
 - *binoculars*
 - *compasses*
 - *hand lenses*
 - *dip and sweep nets*
 - *chest waders*
 - *chemical test kits*
 - *rock and mineral sets*
 - *stream tables*
 - *dissecting tools*
 - *microscopes*
 - *snowshoes*

Join our naturalist staff in a unique outdoor setting to do meaningful environmental science!

Program Offerings

Wetland Science

- Aquatic Macro-invertebrates Sp, Su
Collect and identify aquatic insects, snails, leeches, and more. Evaluate wetland health according to biotic diversity.
- Wetland Plant Life Sp, Su
Set up a releve plot and do a survey of wetland plant species. Evaluate wetland health according to plant populations.
- Marsh Vertebrates Sp, Su, Fa
Observe birds, mammals, reptiles, and more in their natural marsh habitat. Record data for the creation of a field guide.

Forest Ecology

- Buckthorn Dynamics Sp, Su, Fa
Conduct and compare plant surveys from two releve plots to learn the effects of buckthorn invasion on hardwood forests.
- Invasive Earthworms Sp, Su
Collect forest earthworms using multiple techniques. Evaluate effects of non-native earthworm invasion on hardwood forests.
- Spring Wildflowers Sp
Review plant reproduction and flower structures. Use identification guides to identify native woodland wildflowers.

Animal Biology

- Invertebrate Studies Sp, Su
Collect and classify snails, leeches, worms, aquatic and terrestrial insects, and more.
- Vertebrate Comparative Anatomy Sp, Su, Fa, Wi
Examine and compare skeletal and organ systems, body coverings, skulls and teeth of vertebrate animals.
- Bee Ecology Sp, Su
Compare anatomy and function of workers, drones, and queens. Observe social behavior in outdoor & indoor hives.
- Owl Pellet Dissection Sp, Su, Fa, Wi
Extract skulls and bones from owl pellets and accurately construct a full vole (or other) skeleton.
- Animal Specimen Dissection* Sp, Su, Fa, Wi
Conduct in-depth dissection of animals from earthworms to fetal pigs.
**Specimen fee charged according to chosen specimen(s)*

Geology

- Rocks and Minerals Sp, Su, Fa, Wi
Develop a mineral key using chemical and physical traits. Examine common rock types to determine mineral content.
- Soil Science Sp, Su, Fa
Collect and analyze soil samples using chemical and physical criteria.

Outdoor Skills

- Beginning Map and Compass Sp, Su, Fa, Wi
Use a compass to orient a map, set and follow bearings. Use pacing to measure assigned distances.
- Competitive Orienteering Course Sp, Su, Fa, Wi
Use Beginning Map and Compass skills to complete a timed course finding 8-12 control sites.
- Animal Tracking Wi, Sp
Search for animal tracks and use track shape & size, gait, straddle, and stride to determine animal types and behaviors.
- Snowshoeing Wi
Conduct above Outdoor Skills programs using snowshoes.
**Snowshoe fee charged: \$2 per pair*

Our Minnesota

- Minnesota's Trees Sp, Su, Fa, Wi
Use a dichotomous key to identify various trees and practice forestry techniques for tree and forest analysis.
- Minnesota's Birds Sp, Su, Fa, Wi
Conduct a bird survey and use gathered information to develop pages for a local field guide.
- Spring Wildflowers Sp
Review plant reproduction and flower structures. Use identification guides to identify native woodland wildflowers

Seasons for Program Offerings:

(can vary with temperature-dependent programs)

Sp = Spring (Mar-May)

Su = Summer (Jun-Aug)

Fa = Fall (Sept-Nov)

Wi = Winter (Dec-Feb)

