

# Class Offerings

## ECOLOGY AND EARTH SCIENCE CLASSES

### ANIMAL

Animal Signs  
Beavers  
Birds  
Small Mammals (mid-April to Late Oct)  
Snowshoe Hares (mid- Nov to early April)  
White-tailed Deer (mid-Nov to early April)  
Wildlife Management

### PLANT

Forest Ecology  
Plant Study (early May to late Oct)  
Trees and Keys  
Wetlands Ecology (early May to late Oct)

### AQUATIC

Fisheries Management (mid Apr to late Oct)  
Frozen Lake Study (mid Dec to early Mar)  
Lake Study (early May to late Oct)  
Stream Study (mid Apr to late Oct)

### ENVIRONMENTAL ISSUES

Acid Rain  
Changing Climate: Ecological Effects (mid April-October)  
Changing Climate: Energy Choices  
Seeds of Change

### EARTH SCIENCE

Geology (mid Apr to mid Nov)  
Weather Forecasting

## CULTURE AND PERSONAL GROWTH CLASSES

### CREATIVE EXPRESSION

Earth Works (mid Apr to Nov)

### CULTURE HISTORY

Ojibwe Heritage (early Apr to mid Nov)  
Ojibwe Snowshoe (January to Late Mar)  
Voyageur Life (early Apr to mid Nov)

### PERSONAL GROWTH

Adventure Ropes Course  
Rock Climbing

### TEAM BUILDING

Basic Survival (mid Nov to early Apr)  
F.I.R.S.T. Games

### OUTDOOR RECREATION

Beginning Orienteering  
Canoeing (early May to late Oct)  
Competitive Orienteering  
Cross Country Skiing (mid Dec to late Mar)  
Superior Snowshoe (early Dec to late Mar)  
Superior View Hike (early Apr to Dec)  
Naturalist Choice

Swimming in Wolf Lake is a possible activity for some groups. Lifeguards are required for this activity but they are not supplied by Wolf Ridge.

## NOTE

When selecting classes for your group, please remember that Wolf Ridge requires that half of your program consists of a mixture of ecology and earth science classes (i.e., two out of four classes for 3-day schools and four out of eight classes for 5-day schools).

Wolf Ridge guarantees five day schools both Rock Climbing and Adventure Ropes Course. Three day schools may receive one or the other. Due to site limitations, not all students can participate in Voyageur Life. This class is distributed between the groups in residence.

## CLASS DESCRIPTIONS (in alphabetical order)

### **Acid Rain**

After students learn about acid chemistry they will visit our precipitation monitoring site, measure pH of samples, and explore acid rain causes, effects and interrelationships.

### **Adventure Ropes**

The Wolf Ridge adventure ropes course consists of six events between towers 25 ft off the ground. Students will traverse the course while attached to safety lines. The experiences on the course are used as a metaphor for students' lives. It is hoped they will apply their gained personal growth and awareness to everyday life. In addition to the instructor, three adults are required to

attend this class.

### **Animal Signs**

Students will learn, by tracking animals out of doors, the variety of evidence left behind by animals and what we can learn about them from that evidence. During spring, summer and fall, they will also practice the research techniques of radio telemetry.

### **Basic Survival**

After prioritizing the basic needs in a survival situation, students will spend an hour in a "survival situation", make a fire, build a shelter, and boil a pot of cider. We recommend that an adult accompany this class.

## CLASS DESCRIPTIONS (continued)

### **Beavers**

Students will participate in a beaver dress-up activity that illustrates the physical adaptations of the beaver. A hike along Sawmill Creek offers an excellent opportunity to observe the effects of beaver activity on the environment. A skit of fur trade era characters offers insight in human and beaver interaction in the past.

### **Beginning Orienteering**

After learning the definition and history of orienteering, students learn parts of the compass and how to set and follow a bearing. Distance measurement is taught through individual pacing and applied math skills. Students will demonstrate skills while on a course. These skills will be applied to map work and the outdoor ethic they can help people obtain.

### **Birds**

The amazing diversity of birds will be studied, with emphasis on field observation. Students will use binoculars, field guides and will be introduced to bird banding. They will also play a migration game. Close up viewing of birds is possible at the bird banding station and "Chickadee Landing".

### **Canoeing**

Students will use Wolf or Raven lake as a classroom as they learn about canoeing history and equipment. They will practice technique on the lake in WeNoNah canoes. They will experience the value of canoeing as a physical activity and how it affects their relationship with the environment. One adult is required for this class.

### **Changing Climate: Ecological Effects**

Students document the current ecological condition through the use of digital photography, learning how a changing climate influences the natural world. Students explore the difference between weather and climate through collection of outside temperatures. Demonstrations, skits and displays connect our changing eco-system to our energy choices.

### **Changing Climate: Energy Choices**

Students explore their personal energy footprint and the role of CO<sub>2</sub> in climate change through experiments with alternative energy production, testing household appliances and cooking. Demonstrations, skits and displays connect our energy choices to our changing eco-system

### **Competitive Orienteering**

Students will be involved in a problem-solving situation utilizing compass and map reading skills, keen observations, geography, speed, and physical stamina. Beginning Orienteering or previous experience with compasses is required to take this class. One adult is required to accompany this class.

### **Cross Country Skiing**

While indoors, students will be introduced to equipment and selection, as well as appropriate clothing. Beginning lessons will be offered before touring (up to 3 kilometers) of Wolf Ridge trails. This class can be paired with Forest Ecology for an all day class. One adult is required to attend this class in addition to the instructor.

### **Earth Works**

Students will experience seeing and expressing themselves creatively through contact with the natural world. Drawing activities, site-specific sculpture, and group discussion generate awareness of one's own influence on the environment and appreciation for artistic expression.

### **F.I.R.S.T. Games**

As members of a team, students learn about Fun, Initiative, Risk, Skills, and Trust while playing games and accomplishing tasks on a challenging course. The team will be collectively analyzing how effective they were before, during, and after the games and how the students can use these skills in their lives.

### **Fisheries Management**

After investigating the habitat needs of stream fish, students visit the Sawmill Creek field station where they will make a working stream model, will identify aquatic invertebrates and will fish for trout and other fish.

### **Forest Ecology (All day class w/ bag lunches)**

Students will learn about trees and their value as both a living and a harvested resource. They will also learn that forests are much more than a collection of trees. "Adopting" a tree and touring a forest management area are some of the field activities. The final activity is a role play in which students need to develop a management plan for a hypothetical forest. This is an all day class paired with either stream study, fisheries management, beavers, animal signs, or cross country skiing. One adult is recommended to accompany this class.

### **Frozen Lake Study**

Students will examine the ecosystem of Wolf Lake under the ice. Working in groups, they will explore

## CLASS DESCRIPTIONS (continued)

the lake through holes drilled in the ice. Studies will include plankton sampling, ice depth and structure, lake bottom structure, and possible catch and release activities. One adult is recommended to attend this class.

### Geology

Students will gain an overview of various kinds of rocks and how they were formed, and the changes that occur due to erosion. Hills will be climbed and glacial features will be observed.

### Lake Study

Students will examine the physical, chemical, and biological properties of Wolf Lake. Wearing boots, which are provided, and working in small groups, the students test temperature, pH, and dissolved oxygen. They will use nets to collect and examine aquatic animal life and will evaluate the health of the lake based on their findings.

### Naturalist's Choice

We recommend this option if you would like to allow our naturalist to choose an activity of his or her interest which is most appropriate for the season and your students.

### Ojibwe Heritage

Students will travel to a recreated Ojibwe site where they will practice skills common 200 years ago. Skills include firestarting using a bow drill or flint and steel, preparation of wild rice and raspberry tea, making basswood twine and black ash baskets. Students will be introduced to Ojibwe history and language. Stories will be told to give insight into the Ojibwe perception of natural events. One adult is recommended to attend this class.

### Ojibwe Snowshoe

Students will be introduced to Ojibwe history, seasonal life-style and use of natural resources. After learning the basic of snowshoes, they will travel on snowshoes to a recreated Ojibwe site of 200 years ago, learning about the uses of different trees along the way. At the site they will listen to legends and learn some skills the Ojibwe had. Another snowshoe hike returns to the classroom for a short conclusion. One adult is recommended to attend this class.

### Plant Study

After identifying some of our most common plants, students will study and observe interactions between plants, herbivores, and other organisms. Finally, they will learn



about plants as resources firsthand by making foods, drinks, dyes, and more. Our study will include algae, fungi, lichens, mosses, ferns and their relatives, conifers, and flowering plants.

### Rock Climbing

Students will experience climbing on the 29-foot indoor rock climbing wall. After a discussion of what emotions and feelings climbing may evoke, they will become familiar with the equipment, techniques, and commands used by climbers and belayers. Belaying instruction, practice and testing will occur before students learn and practice climbing techniques. Experience climbing and belaying will be used as metaphors for everyday life. Three adults are required, in addition to the instructor, for this class.

### Seeds of Change

This class traces the steps our food takes from the farmer's field to the dinner plate. The students sample foods, learn the history of seeds, and discover the difference between heirloom and hybrid seeds. Grinding grains, baking, and games will give the students a perspective of the different methods of farming and the implications of our global farming system.

### Small Mammals

Students will learn characteristics of some of the small mammals of northern Minnesota. By traveling through various habitats, searching for small mammal signs, they will learn the role these small creatures play in the environment. Students then set out live traps overnight, which will be collected in the morning to observe the animals caught, before releasing them back again to the wild.

### Snowshoe Hares

After comparing Minnesota hares and rabbits, students explore outside areas to find signs of snowshoe hares. They will study the adaptations, predator/prey relationships and population fluctuations of snowshoe hares.

### Stream Study

Students will examine the physical, chemical and biological properties of Sawmill Creek. Wearing provided hip boots and working in small groups, the students will test stream velocity, temperature, pH, and dissolved oxygen. They will also look at the diversity of aquatic animals and evaluate the health of the stream through their findings. We recommend that an adult accompany this class.

### Superior Snowshoe

After learning about the history and types of

## CLASS DESCRIPTIONS (continued)

snowshoes, students will experience them by snowshoeing across Wolf or Raven Lake to the highlands overlooking Lake Superior. Rest breaks will include discussion of facts and figures concerning Lake Superior. For safety, an adult is recommended to attend this class.

### Superior View Hike

Students will take a three mile hike along sections of the Wolf Ridge trail system and the Superior Hiking Trail. A spectacular overlook awaits them above Lake Superior. The instructor will involve students in a demonstration dealing with the importance of the lake's fresh water. Stopping along the way at five different stops, students will examine the geology, history, and meteorology of the area.

### Trees and Keys

Students will learn how to construct and use a simple dichotomous identification key. Given a map and a simplified tree and shrub key, students will travel between trees and attempt to identify them correctly. Temperate and tropical forests will be compared and students will learn about species diversity. Students will receive a tropical forest tree seed to plant and to learn the value of maintaining biodiversity.

### Voyageur Life

Students will learn the history of early exploration and the fur trade of this northern region by becoming Voyageurs. After paddling a voyageur canoe to an encampment, they will learn about the life-style of the colorful voyageur who provided the muscle behind the development of the upper midwest. Skills of the voyageur and the fur trade will be practiced. We recommend that an adult from your group accompany this class.

### Weather

After learning some of the historic changes in the earth's climate, students will collect data on today's weather, then do demonstrations to understand cloud formation and low pressure systems. An outdoor game will explain the jet stream and its effect. Finally, students will use their new knowledge to create a forecast for the next day at Wolf Ridge.

### Wetlands Ecology

After establishing a common vocabulary in the study of wetlands, students will gather data regarding the vegetation, hydrology, and soil composition of several wetland types, including swamps, marshes, and peatlands. After returning from a discovery hike students analyze their

data and map the Raven Lake wetlands. They will appreciate the uniqueness, diversity, and fragility of the wetland ecosystem.

### White-tailed Deer

Students will learn about white-tailed deer by exploration of signs. They will track deer, inspect feeding stations, follow trails, and investigate beds. In this way they will learn about adaptations, life cycles and management of deer in northern Minnesota.

### Wildlife Management

By playing a Project WILD game called "Oh Deer!" students will better understand wildlife needs and management techniques. During their tour of various management plots, they will hunt for animal signs, be introduced to modern wildlife management concepts, and may contribute to plot maintenance by cutting, planting, and raking.



## EVENING ACTIVITIES (6:15-7:45)

It is required that students be involved in adult managed activities at all times while at Wolf Ridge, and **all evening activities are the responsibility of your staff** (with the exception of Star Lab, Rocks, and Ropes). Your Wolf Ridge liaison is available to help with coordination or to manage one activity. For example; if one of your groups is scheduled for evening Rock Climbing or Adventure Ropes, your liaison will be scheduled for that. If you choose a campfire, it will be your responsibility. If not, you can choose between having them lead the evening activity or the campfire. If you are leading the campfire, your liaison will assist in the setup. All activities should be scheduled with Wolf Ridge to assure adequate space and equipment.

### OUTDOOR ACTIVITIES 90 min. unless noted

- Adventure Ropes (3 hrs.)
- Canoeing
- F.I.R.S.T. Game
- Night Hike
- Volleyball
- Voyageur Canoeing

### INDOOR ACTIVITIES 90 min. unless noted

- Creative Expressions
- Lake Superior Game
- Owl Pellet Dissection
- Paper Making
- Rock Climbing (3 hrs.)
- Dream Catchers
- Block Printing
- Woodland Art
- Star Lab

## EVENING ACTIVITY DESCRIPTIONS cont.

### ADDITIONAL EVENING ACTIVITIES (30 min.)

- Campfire (30 min) at 8pm or 9pm
- Astronomy / Telescope (30 min) at 9pm (liaison led)

### **Adventure Ropes**

See daytime class descriptions. The Adventure Ropes Course lights are on a timer and turn off at 10:30pm.

### **Astronomy**

Using a telescope students will observe current astronomical events or objects. Major constellations in the night sky will be taught and illustrated with stories. (After 9pm, offered once for entire group)

### **Block Printing**

Groups will learn the ancient technique of block printing to express a natural history event or experience that took place while at Wolf Ridge. Students will take home their original 4"x5" art block for future printing, as well as 6-12 printed cards.

### **Campfire**

If your liaison is not already instructing an evening activity, you may ask for their help with the campfire. If they are instructing an evening class, they will prepare the fire for your use.

### **Canoeing**

See daytime class description.

### **Creative Expressions**

Students will participate in activities that creatively capture their experiences in the natural world. Through activities in poetry, theatrics and storytelling the students will express the awareness and emotions generated by their Wolf Ridge experience.

### **Dream Catchers**

Students will learn the history of the dreamcatcher, a traditional Ojibwe craft. After an hour of work the students will have created a dreamcatcher using branches, artificial sinew, beads, and feathers.

### **Lake Superior Game**

Around a giant map of Lake Superior, students are assigned roles and places to live. Then each is given a personal environmental dilemma involving the lake. A clear pail representing Lake Superior becomes polluted (with food coloring) according to the students' decisions.

### **Night Hike**

Students will hike a designated route, stopping to do activities along the way. These activities will lead to a better understanding of night time communications and senses. Students will have the opportunity to sit solo and experience the night.

### **Owl Pellet Dissection**

This activity offers a chance for students to dissect sterilized Barn Owl pellets. Each pellet contains a small mammal skeleton which the students reconstruct, glue on cards, and bring home (to delighted parents).

### **Rock Climbing**

See daytime class description.

### **Star Lab**

The Star Lab is an inflatable planetarium. Students learn about the night sky and the stories that accompany some of the constellations. This activity is typically led by Wolf Ridge staff.

### **Paper Making**

Students will learn about the paper making process, its history, and then make their own recycled paper. The final product, a postcard, takes two hours to create with an overnight drying period.

### **Volleyball**

Play volleyball on one of our two sand volleyball courts. The courts are lighted and in the winter make for the unique opportunity to play snow volleyball. Volleyballs are provided.

### **Voyageur Canoeing**

Students will hike down to Wolf Lake and paddle a replica of a fur trade era voyageur canoe. A piece of history comes alive as you take in the beautiful sites around Wolf Lake

### **Woodland Art**

Students will use the techniques and examples of Woodland Art to interpret some of their experiences at Wolf Ridge. Templates can be used to assist students with their pictorial stories.

## NATURALIST

### PRESENTATIONS (8:00-8:45 PM)

Naturalist Presentations are programs utilizing slides, theatrics, and audience participation to teach about a specific subject. They are scheduled quarterly and the following list includes some of the programs, some of which you may experience.

- Wolves
- Raptors
- Bats
- Logging Camp Life
- The Night Sky
- Fur Trade
- History of the North Shore