

Education Outreach

Pictured Rocks National Lakeshore
National Park Service
U. S. Department of the Interior



"Wild beauty on the Lake Superior shore"

Program History

In 1991, Pictured Rocks National Lakeshore received a Kellogg Foundation grant for \$205,000 enabling the park to begin a new education outreach program. Outreach efforts focus on the seven basic ecological principles based on the Earth Education program philosophy of E, C, D, C, I, C, A: (Energy Flow, Cycles, Diversity, Community, Interrelationships, Change and Adaptation).

The Kellogg supported program initially included a Summer Science Day Camp, which was very popular but also very labor and transportation dependent. In 1998 we suspended this summer program due to an end of special funding and a need to shift staff activities to more traditional summer programming including roving, campfire, and lighthouse tour programming. Freeman Tilden Award winner Dave Kronk has ably guided the outreach program since its inception, annually contacting approximately 3,000-4,000 area students and teachers.



Service Area

The Lakeshore outreach program serves four rural Alger County, Michigan, school districts: Superior Central, Au Train-Onota, Burt Township, and Munising, as well as two parochial schools. Geographic coverage is approximately 55 miles from our Munising Headquarters.

Programming

The Lakeshore's education staff is dedicated to providing high quality programs and services. We offer classroom programs, school site programs, and field trips. Teacher in-service programs are available upon request.

Pictured Rocks provides 35 fun, hands-on, minds-on interdisciplinary K-12 programs for Alger County students which address Michigan Department of Education Content Standards in Science, Social Studies, Language Arts and History. The goal of this education program is to help create good stewards of Pictured Rocks National Lakeshore, the Upper Peninsula of Michigan, and elsewhere.

Curricula

The outreach program includes a wide variety of K-12 curricula including two new materials produced by the Michigan Department of Environmental Quality (Ecosystems and Biodiversity and Land Use). Both are written to meet Michigan Science and Social Studies Benchmarks in Grades 4-9.

Preschool - Fall - Exploring the World of Autumn

Concepts covered: Awareness and the five senses

Preschool - Winter - Exploring the World of Snowflakes

Michigan Science Standards met: Reflecting on Scientific Knowledge 2 and 4

Preschool - Spring - Exploring the Forest and its Animals

Michigan Science Standards met: Reflecting on Science 4, Classification 1 and 4

In the classroom for 30 minutes: Children will explore the idea of how to tell a plant apart from an animal. They will also explore homes or habitats and discover how these provide animals with food, water, and shelter. They will examine different animals of the forest, where they might live in the forest, and what they might eat.

One-hour field trip at your school site or Pictured Rocks: Children will explore outside for plants and animals. They will compare a field to a forest habitat to learn the differences. They will sit quietly using all their senses to try to make discoveries about the forest and report on their observations. Unique stories of the plants and animals will be shared.

Kindergarten - Fall - Seed Surprises and Scavenger Hunt

Concepts covered: awareness, comparing and contrasting, observation skills, adaptations, and identification based on observable characteristics

Kindergarten - Winter - An Introduction to Snow, Ice, and Winter

Michigan Science Standards met: Constructing New Knowledge 1 and 3, Reflecting on Science 5

Kindergarten - Spring - Feathers, Fur and Classification

Michigan Science Standards met: Living Things 1 and 2

In the classroom for 45 minutes: Students will examine taxidermy mounts to group them into the five vertebrate groups: fishes, reptiles, amphibians, birds and mammals.

One-hour field trip to Pictured Rocks: Students will explore a pond and a wetland area to discover different kinds of plants and animals. They will find animals without backbones and different groups of animals with backbones.

First Grade - Fall - Insects and Life Cycles

Michigan Science Standards met: Organization of Living Things 2 and 3, Constructing Scientific Knowledge 3

First Grade - Winter - Winter Cycles and Life

Michigan Science Standards met: Changes in Matter 1, Atmosphere 3, Living Things 1, Motion of Objects 1

First Grade - Spring - Butterfly Life Cycles and Needs

Michigan Science Standards met: Organization of Living Things 2, 3, 4

In the classroom for one hour: Children will be given materials to study butterfly cycles and raise butterflies in the classroom along with some host plants. An activity will help them prepare to release butterflies and grow plant hosts.

One-hour field trip at your school site: Children will release butterflies they have raised and plant butterfly food plants. An insect scavenger hunt will be conducted to help students compare and contrast insect features and life cycles.

Second Grade - Fall - How Native Plants Help Wildlife

Michigan Science Standards met: Organization of Living Things 4, Caring for Living Things

Second Grade - Winter - Exploring Snow and the Winter Ecosystem

Michigan Science Standards met: Hydrosphere 1, Constructing Knowledge 3, 4



Second Grade - Spring - Ecosystem Basics

Michigan Science Standards met: Ecosystems 1 and Constructing Knowledge 4

In the classroom one hour: Students will review ecosystem components and compare and contrast ecosystems in the classroom using posters. Next they will play a game to help them understand how ecosystems function.

One-hour field trip at your school site or Pictured Rocks: Children will travel outside to examine several different ecosystems. They will test and compare soil and moisture. They will identify dominant plant and animal species in different ecosystems. Activities will also demonstrate how ecosystems change over time.

Third Grade - Fall - Exploring Earth Materials

Michigan Science Standards met: Geosphere 1 and 2

Third Grade - Winter - Exploring How Animals Survive Winter

Michigan Science Standards met: Living Things 4, Evolution 2, Reflecting on Scientific Knowledge 2 and 4, Constructing New Scientific Knowledge 2

Third Grade - Spring - Migration and Adaptation Magic

Michigan Science Standards met: Evolution 2, Living Things 5, Constructing New Knowledge 3

In the classroom one hour: Through indoor activities, students will learn about the mysteries of migration and some hazards our bird and butterfly friends might face.

Two-hour field trip at your school site or Pictured Rocks: Students will learn how to use binoculars to look for migrating flocks of birds to study their behavior. Insects, other animals, and plants will be examined for their adaptations that enable them to survive in their environment.

Fourth Grade - Fall - Animal And Plant Basic Needs

Michigan Science Standards met: Ecosystems 1

Fourth Grade - Winter - The Web of Life Game and the Connector Inspector

Michigan Science Standards met: Ecosystem 1 and 2

Fourth Grade - Spring - Human Impacts on Plants and Animals

Michigan Science Standards met: Reflecting on Knowledge 4, Ecosystems 1 and 2

In the classroom one hour: Through a vivid demonstration of possible human impacts on water, students become aware of some solutions to prevent water pollution. A simple investigation of water acidity is used as an introduction to the scientific method.

Two to three hour field trip at your school site or Pictured Rocks: During a hike through a forest, wetland, or stream area, students are challenged to discover evidence of relationships in the natural world. They try to prove to “King Snoid” that all things in the natural world are interrelated.



Fifth Grade - Fall - The Wonderful World of Dirt and the Soil Cycle

Michigan Science Standards met: Ecosystems 5, Constructing Scientific Knowledge 1 and 3

Fifth Grade - Winter - Water Cycle Investigations

Michigan Science Standards met: Changes in Matter 1 and 3, Matter and Energy 1, 3, 4, Hydrosphere 1 and 4

Fifth Grade - Spring - The Best Deal on Earth – The Air Cycle

Michigan Science Standards met: Atmosphere 2, 3, 4

In the classroom one hour: Through several hands-on investigations about air, students learn about the properties of oxygen, carbon dioxide, and air pollution.

Two to three hour field trip to Pictured Rocks: The air cycle relay game reinforces the concept of the air cycle. During an exploration of a forest and a field, students follow the paths of air molecules, visit a home of the future with an air problem, and ride the “air cycle.” The program concludes with some air poetry.



Sixth Grade - Fall - Food Chains and a Stream Exploration

Michigan Science Content Standards met: Ecosystems 2, Constructing Scientific Knowledge 2 and 3

Sixth Grade - Winter - Our Changing Landscapes

Michigan Science Standards met: Geosphere 2, 3, 4

Sixth Grade - Spring - Photosynthesis and the Leaf Food Factory

Michigan Science Standards met: Ecosystems 2, Constructing Knowledge 2, 3, 6

Sixth Grade - Spring - Logging Era of the Pictured Rocks

Michigan Social Studies Standards met: Historical Perspective 2 and Geographic Perspective 2 and 3

In the classroom one hour: “Lumberjack Stan” will visit the classroom to explain what life was like to work in an area logging camp. Afterwards the students will gather in a sharing circle to ask questions and sing lumberjack songs.

Field Trip to Pictured Rocks: All day – bring a lunch! Students will travel to the White Pine Trail (near Little Beaver Lake) to experience a stand of old growth white pine and learn about logging in the Beaver Basin area. Next they will travel to the Kingston Plains to explore the history of logging in this area and the impact it had on the natural resources. Finally students will visit the Munising School Forest near Melstrand where Munising High School Natural Resource students will give them a tour of modern forest management methods.

Seventh Grade - Fall - Watershed Monitoring

Michigan Science Standards met: Organization of Living Things 2, Constructing New Scientific Knowledge 1

Seventh Grade - Fall, Winter, or Spring - An Introduction to Groundwater

Michigan Science Standards met: Hydrosphere, Reflecting on Scientific Knowledge 1

In the classroom two to three hours: Students will work in small groups to investigate soil porosity and permeability. Next, they will view water movement in a groundwater simulation model. Finally they will become detectives and solve a mystery of polluted wells in the “Fruitvale Game.”

Eighth Grade - Fall - Watershed Monitoring

Michigan Science Standards met: Organization of Living Things 2, Constructing New Scientific Knowledge 1

Eighth Grade - Fall and Spring - The Munising (Schoolcraft) Blast Furnace Story

Michigan Content Standards met: Historical Perspective 1, Geographic Standard 1 and 2, Economic Standard 2

In the classroom one hour: A PowerPoint presentation about the Munising (Schoolcraft) Blast Furnace and hands-on examination of objects from that time period, followed by a discussion about the impact the blast furnace had on the nearby community and environment.

Two hour field trip to the Munising Falls area: Students will participate in some hands-on math activities to learn about wood, charcoal, and iron then hike to explore the old blast furnace site. On the site, the students will read information about some of the folks that were employed at the furnace before participating in a brief historical reenactment “play.”

Ninth Grade - Fall and Spring - Local Geology

Michigan Science Standards met: Geosphere 1, 2, 3, 4

Ninth Grade - Fall, Winter, or Spring - An Introduction To Mapping

Michigan Science Standards met: Geosphere 1, Constructing Scientific Knowledge 2, 3, 4

In the classroom two to three hours: Students will first work in groups to prepare maps of their school sites. Next they will examine topographic maps of the local area and prepare a relief model of their watershed.

Tenth Grade - All Seasons - Global Climate Change and the National Lakeshore

Michigan Science Standards met: Hydrosphere 2, Reflecting on Scientific Knowledge 1

Tenth Grade - Spring - Pictured Rocks Maritime History

Michigan Social Studies Standards met: Historical Perspective: Content Standard 1, Geographic Perspective 1 and 3, Economic Perspective 5, Inquiry Standard 1

Tenth Grade - Spring - Pictured Rocks Coast Guard Era 1930s to 1960s

Michigan Social Studies Standards met: Historical Perspective: Content Standard 2, Civic Perspective: Content Standard 1

In the classroom one hour: A PowerPoint presentation about the two Coast Guard sites in Munising and Grand Marais including pictures showing some of the people, their drills, and the rescues and attempted rescues they were involved with from the 1930s to the closure of the stations in the 1960s. The program will explain the traffic and cargo on Lake Superior at this time, as well as geographic reasons for building locations.

From newspapers of those time periods, students will learn of significant national, local, and international events. They will get a chance to handle flag signal and Morse code equipment that the Coast Guard would have used. A short video will explain one of the life saving drills practiced. Written accounts of Coast Guard staff will be read and discussed. A map of the Sand Point Coast Guard Station and grounds will be reviewed.

Two-hour field trip to Sand Point Coast Guard Station: Students will tour the grounds of the old Coast Guard site and briefly view the main building. Next they will tour the boathouse and get a first-hand look of the old self-righting motor lifeboat.

The entire class will practice a wigway fire drill. Students will be broken into groups to do different tasks such as servicing the surfboat and packing the line breeches buoy and tackle into the faking box. Suddenly an emergency signal - in Morse Code - will arrive to signal a ship in distress. The “student crew” will hop into action during this simulated rescue reenactment, signaling with flags and pulling a rescue cart to the wreck site. A rescued dummy will be pulled ashore with the breeches buoy. CPR will be performed on the “victim” who eventually is resuscitated. A discussion of the events and the participants’ thoughts and feelings will conclude the field trip.



Eleventh and Twelfth Grades - Fall, Winter, and Spring Wilderness Concept Explored

Michigan Social Studies met: Skills, goals and objectives 1

Eleventh and Twelfth Grades - Winter - Leave No Trace Outdoor Skills and Practices Course

Michigan Science Objective met: Constructing Personal Knowledge 8

Classroom and field trip: Students will learn basic winter camping skills and the gear needed for an overnight trip. They will explore methods of leaving no impact or trace of their use of wild land through the study of an outdoor philosophy called “Leave No Trace.” Extra gear and equipment are available.



Other Services

Each fall, Pictured Rocks National Lakeshore offers teacher workshop sessions at Northern Michigan University through the Seaborg Math and Science Center. The Lakeshore also offers week-long teacher workshops in June each year on an important natural or cultural resource topic. Workshop sessions allow participants to earn Continuing Education Units or regular university credit.

Park Rangers also provide Leave No Trace weekend campout sessions, Family Science Days, and the popular Junior Ranger after school program held each season.

Learning Trunks

Pictured Rocks National Lakeshore has six traveling educational “trunks” available for free loan. Each trunk comes complete with four or more lesson plans, the materials needed to conduct the lessons, suggested follow-up activities and lists of other educational resources you may want to review. Each truck is written for students in grades 3-6; each lesson helps address Michigan Science or Social Studies Benchmarks. Topics include:

Geology of Michigan: Materials and lessons to help students understand the rock cycle, igneous, metamorphic and sedimentary rocks and geologic time.

Birds: Materials and lessons to help students understand bird migration and adaptations.

Beavers: Materials and lessons to help students understand the natural history of beavers, how they can change the landscape and what role they played in human history.

Black Bears: Material and lessons to help students understand the natural history, cycles and interrelationships of this fascinating mammal.

Non-Native Species: Materials and lessons to help students understand what a non-native plant or animal species is and how they can impact other species and the environment.

Au Sable Light Station: Materials and lessons to help students understand why the Au Sable Light Station was constructed near Grand Marais, how it was constructed, the lives of the light station keepers and their families, and why these cultural resources are important.

Materials & Equipment

Pictured Rocks National Lakeshore has an extensive collection of educational materials to loan to area educators including videos, DVD’s, books and education materials, and equipment catalogs. If you

are interested in doing field study activities with your students, we might have the equipment you need. We have a wide variety of science education gear from thermometers to water test kits.

For Additional Information, Contact:

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