

Deep Portage Learning Center Day Classes

ANIMAL SIGNS is a good choice for a wildlife lesson in any season. Deep Portage is located on 6,307 acres of the transitional forest in central Minnesota. Our biome has white-tail deer, bobcats, snowshoe hare, fisher, otter, beaver, bald eagles, goshawks, and many other fascinating animals. This class focuses on 8 basic clues that animals leave behind in their habitat. Students have the opportunity to investigate the outdoors looking for various animal signs. Students learn tracking skills, animal identification, and animal life histories.

AMPHIBIAN HIKE This class focuses on the unique physical adaptations that frogs and toads have and their specialized life cycles that allow them to live in a wide range of habitats. Students will learn how to identify frogs and toads based on their calls and then go for a hike to visit many of our vernal ponds to listen and hopefully see the Deep Portage frogs and toads. This class is best experienced in the spring.

ARCHERY is one of the most popular life skill offerings. This activity is best suited for 6th grade and older. We use compound and recurve bows on the Deep Portage archery range. Students receive solid instruction on equipment selection, equipment use, and safety requirements. We concentrate on introducing the sport to beginners while helping refine archery skills in those students with more background.

BASS POND IN WINTER opens up a window of understanding of life underneath the ice on lakes and ponds. The closed system of a frozen pond offers us the opportunity to practice Scientific Method. Students formulate hypotheses on ice depth and water temperature. We auger holes and collect measurements to prove or disprove our educated guesses on what is happening in the pond.

BIOMASS BASICS introduces students to what biomass is and how it can be applied in a useful capacity. Students will learn about renewable and non-renewable energy and material resources in Minnesota, and then observe how one form of biomass is applied practically in our large facility. They will identify trees and learn how to measure board feet on a tree as well as participate in our biomass burning operation. This class provides an experiential connection to energy system discussions.

BIRDS This class introduces students to the basic morphology of birds and what makes them unique. Depending on the season, students may go on a birding hike or watch a slide show.

BOG HIKE A visit to the Deep Portage bog is a hike not soon forgotten. Our tamarack bog contains pitcher plants, cranberries, bog laurel, leatherleaf, and sphagnum moss. This fascinating ecosystem introduces concepts such as photosynthesis, nitrogen fixation, and plant adaptation to severe environmental conditions. Bogs are tied to many cultural stories and these details are interwoven with a naturalist lead hike over the glacial landscape. Our bog has a wooden boardwalk over the moss which enables us to explore the plants up close while keeping our shoes dry and the impact on the system to a minimum.

CAMOUFLAGE CRITTERS Is a class that introduces the concepts of predator-prey relationships. Students learn about camouflage as a means of defensive adaptation by coloring a snowshoe hare cutout that matches a selected background. After hiding their snowshoe hares, the students become 'lynxes' and try to find one another's snowshoe hares. Students then discuss what was successful or unsuccessful about their camouflage. This class is best suited for younger students (1-4 grades) during any season.

CANOEING The land of 10,000 lakes is filled with opportunities to explore by canoe. Deep Portage students use Old Town Discovery and Alumacraft Featherlight canoes to practice their paddling skills. Each student is outfitted with a paddle and a lifejacket. We teach basic techniques and safety while floating on Bass Pond. If winds are low and students are ready, we can portage to Big Deep Lake and continue with the paddling adventure.

CHARLIE TO BASE is the follow-up activity to landform 3. Students have learned how to use a compass, read a topographic map, and measure distance with paces. It is time to put it all together in a challenging land navigation exercise. Students are divided into groups and given 2 compasses, a map, and a two-way radio. The students begin at a landform point and navigate their way through the forest using all their acquired skills. This is a great teambuilding opportunity. Everyone shares in a great sense of accomplishment when they orienteer successfully.

CLIMBING WALL Is a class that introduces students to the basic technical skills of climbing as well as team skills such as respect, communication and trust. The class takes place in our 34 foot state-of-the-art climbing wall with the availability of 10 challenging routes to climb. The focus of this class is on self-awareness, teamwork, setting goals, and challenging themselves. This class is great for all ages.

CROSS-COUNTRY SKIING is a favorite with students of all ages. We have 40 pairs of skis. Our boot sizes range from 32cm to 48cm. With adequate snow we have a nicely groomed beginning loop for skiers of all abilities. Our staff combines instruction and encouragement to create a fun winter experience. This activity is best for 5th grade and older.

DRESS A BEAVER Teaches students about the basic beaver morphology, behavior, habitat and life cycles. Together they will "dress" their classmates as a beaver to increase their knowledge of the adaptations beavers have that allow them to live in their habitat. This is a great lesson for younger students (K-5) as an introduction to an animal signs hike.

FISH PRINTING (Gyotaku) is a Japanese art form. Recording fish size with ink and paper was a way that the Japanese collected information on fish populations. Western artists see the beauty in this practical art and have expanded the boundaries to include all types of printing subjects. We learn about fish structure and adaptive physical features while printing with paint on paper. If schools would like to bring T-shirts to print on, the students can make a souvenir that is definitely unique. In cold weather it is nice to have one indoor oriented class for a warm-up session.

HUNTER-GATHERER This class gives students a hands-on glimpse of human history. They can visit a recreated hunter-gatherer dwelling and practice some of the skills essential to that lifestyle, such as friction fires, bows and arrows and edible plants. Along the way they uncover some of the pros and cons of this way of life. This class is offered in the Spring and Fall seasons.

ICE FISHING season typically begins in January at Deep Portage. Bass Pond is a great place to learn the finer points to this winter activity. Students learn about lake turnover and what is happening underneath the ice. Where are the fish? What are the most effective techniques when fishing

for panfish or pike? This is a great way to motivate students to experience "water" in the winter season.

LANDFORM 3 is a compass orienteering class. The students learn how to use a compass, read a topographic map, and measure distance with paces. These are skills that they will have for a lifetime. If they hunt, hike, or enjoy wild areas, it is important that everyone know how to orient themselves with a map and compass. Our land navigation course was developed by Harley Kaiser a retired Ranger, and is one of the best in the state.

NATURE DRAWING & JOURNALING This class comes from the literary tradition of Annie Dillard, Sigrid Olsen, Aldo Leopold, and Rachel Carson. Students learn drawing and writing techniques which help them create a journal. Students hike to a place of solitude where they are given the freedom to think, create, interpret, and record their visit to Deep Portage. These journals are a great way for students to share their trip with parents and friends. This lesson emphasizes haiku, acrostic, free verse, and cinquain forms of poetry with contour and gesture drawing techniques.

PIONEER OLYMPICS is a cultural history lesson where students step back in time. Voyageur stories and Native American skills are practiced during a variety of events: tomahawk toss, flint & Steel firestarting, match-split, cross-cut saw, Atlatl, and rabbit sticks. This is a favorite class for students and teachers.

PAPERMAKING What was paper first made of? Which continent developed papermaking processes? How is paper made today? These questions and many more are answered during the papermaking lesson. Students learn about the papermaking process and actually make their own sheets of paper to take home. The pulp material used can be mushrooms, pine needles, or cotton linter. Recycling paper products and landfill issues are cornerstones to this hands-on lesson. The cultural ties that Minnesota has with the papermaking industry are also highlighted. In cold weather it is nice to have one indoor oriented class for a warm-up session.

PIZZA MAKING The goal of this class is not simply to make good food and cook it in a wood-fired brick oven (yum!), but also to get students thinking about where their food comes from. In this class students make pizza dough from scratch, then learn about yeast and a brief history of bread as a

staple in human history, and finally cook their pizza and eat it after observing the curious workings of our wood-fired brick oven.

QUICK FROZEN CRITTERS Introduces predator-prey relationships and focuses on the behavioral adaptations prey use to survive. In this class, students play a version of freeze-tag, where some students are predators and others are prey. Students need to arrive at an area of safety without being tagged by the predator. If the prey freezes in place, as real prey does to avoid detection, they won't be tagged. This class is great for K-4 students.

QUIN-ZHEE BUILDING Snow is an amazing insulator. Many native cultures have known this for centuries and have built warm homes to live in. In the Quin-zhee lesson students make their own qhin-zhee mounds and dig them out. While they are waiting for the snow to set, the group conducts a series of snow and ice experiments where they discover first hand the amazing properties of frozen water. This activity keeps everyone warm and occupied even on the coldest of days.

SEARCH FOR THE BIG NINE Deep Portage is located on a terminal glacial moraine in the transitional forest of Central Minnesota. Our forest is dominated by paper birch, big-tooth aspen, quaking aspen, white pine, red pine, and red oak. This lesson teaches students to use a dichotomous key while learning the finer points of tree identification. This hike is conducted in every season and highlights seasonal changes. Topics may include leaf color, bark/buds, new growth, and succession. This is our most popular forestry class. The skills used can be tailored to any age group.

SILVA SCHOOLYARD AND COMPASS TRIANGULATION This is a beginning compass lesson that is great for the beginner. How a compass works and the parts that you need to know are thoroughly explained. As you practice using a compass on the Silva course, you gain confidence in setting and shooting a bearing. This is an appropriate course for 3rd and 4th graders that have never used a compass. This is a low pressure environment where everyone succeeds. Silva Schoolyard is a math class Deep Portage style.

SNOWSHOEING Deep Portage has over 60 pairs of snowshoes. We have examples of Yukon, Ojibwe, Green Mountain, and Beaver Tail style snowshoes. Our snowshoes are an example of modern plastic & metal

snowshoes made by Tubb that can accommodate many kinds of boots. The bigger and heavier the boot the better. Students learn snowshoe history and technique and enjoy exploring the glacial moraines of our campus.

SURVIVAL This unit focuses on safety while enjoying the outdoors. If students are interested in camping, backpacking, canoe camping, or any other type of recreational exploration, it is important for them to have some basic survival skills. We teach firebuilding, shelter building, hypothermia awareness, and other safety skills. For many students this is the first time they are allowed build a fire on their own.

T.E.A.M. COURSE Together Everyone Accomplishes More. Over the years the needs of students and teachers seem to change. One request that we often receive is that of working on teambuilding and cooperation skills with students. Our T.E.A.M. course is designed to challenge students in positive and productive ways. Every element requires the whole group working together. It's not always easy, but when progress is made, everyone feels good. Many teachers want to come back to Deep Portage, and bring peers to experience the events.

TRIALS OF LIFE Is a large-group activity that simulates the predator-prey interactions of an ecosystem. Each learning team represents a particular species within the ecosystem, which falls into a top predator or prey level. Each species needs to acquire the appropriate amount of food, water, and shelter that they need to survive by the end of the game. Their quest is complicated by the fact that the predators may hunt them. In this class, students learn the basic habitat requirements that animals need to survive within an ecosystem in a fun, hands-on way.

WATER CANARIES This Project Wild Aquatics class is favorite for many schools in the fall and spring. Deep Portage has a variety of aquatic ecosystems to explore: bog, pond, lake, stream, vernal pond. Students collect macroinvertebrates from a system and learn to identify several insects. Macroinvertebrate indices are used by the EPA and private environmental consultants to assess water quality. Macroinvertebrates are easy to identify, develop entirely in water, and generally don't roam. These features make them ideal environmental indicators.

WIND POWER: BEST BLADE DESIGN Students will learn about renewable and non-renewable energy and material resources in Minnesota, and focus

on wind as a renewable energy source. Students will be introduced to a brief history of how wind has been harnessed to provide energy, as well as see examples of modern turbines before breaking into engineering teams to design the best wind turbine blade. Students plan, design and construct blades and test them using a fan and multimeter to measure the energy generated.

WINTER ECOLOGY Brings students to understand the reality of a harsh Minnesota winter and the adaptations that animals and plants need to survive it. While participating in a role-playing activity, students will experience the adaptations of small mammals in a winter survival situation. This activity reinforces concepts of competition on particular species populations. Students will also learn concepts of heat transfer and what causes the changing of the seasons as they explore the winter world of Deep Portage.

YOU ARE MY SUNSHINE Out of our three major sources of renewable energy at Deep Portage, solar energy is certainly the most visible and easily noticed because of the large amount of solar panels on our roof and in our front and back yards. The students get a chance to capture solar energy in an experiment, explore the inner workings of a PV panel through a simulation activity, and discuss the difference between renewable and nonrenewable energy sources.