



U.S. Fish & Wildlife Service

Sherburne National Wildlife Refuge

Concept adapted from Prairie Wetlands Learning Center, USFWS

The Compass

How to navigate in the outdoor classroom

Nature Journaling

Regularly record observations, perceptions, and feelings about the natural world around you.

A Sense of Wonder

Arousing and awakening an emotional connection and fascination with nature.

Model Naturalist

Use work from relevant and meaningful naturalists to learn how best to study nature.

Examples: John Muir, Rachel Carson, Aldo Leopold, George Washington Carver, etc.



Phenology

Study how climate and seasonal variations affect the timing of plant and animal lifecycles and events.

Place-Based

Strive to connect people with your local community and local environment by emphasizing hands-on, real-world learning experiences. Seek the answers to:

1. Where am I?
2. What is the nature of this place?
3. What sustains this community?

Knocking Down Classroom Walls

The Case for the Outdoor Classroom

What Is an Outdoor Classroom?

It's any outside natural space where learning can occur! It could be a school yard, playground, back yard, park, refuge, or city green space—but for the purposes of teachers, this space should be as close as possible to the classroom, preferably walking distance. Easy access is convenient in case a pencil or coat is forgotten inside and also allows for indoor preparation right before going outside to do “field work.”

Why Use an Outdoor Classroom?

Research shows that it benefits learning as well as student health! The outdoor classroom creates a nature-literate citizenry, increases student engagement, improves academic achievement, promotes leadership skills, enhances critical thinking skills, improves overall health, and reduces discipline problems. (Archie, 2003; Glenn, 2000; GCEE, 2004; Falco, 2004; Michael Duffin, & PEER Associates, 2005; NAAEE, 2001; Bell, Wilson, and Liu, 2008; Taylor, & Kuo, 2008; Bell & Dymont, 2008) One study found that learning in the outdoor classroom improved standardized test scores and developed critical thinking and interpersonal communication skills—that is, produced gains in curricular areas across the board: language arts, math, social studies, and science. (Lieberman & Hoody, 1998; Louv, 2008) And time outside benefits teachers, too!

What Else?

It's quick, easy, and free! By using the natural space outside the school door or at a nearby national wildlife refuge, you are expanding the classroom at little or no extra cost while also encouraging indoor-oriented, “wired” students to develop their nature literacy and knowledge of their natural surroundings. Advocacy is not the goal, but today's children will become tomorrow's stewards of our natural world. They must first bond with nature in order to love and care for it.

Preparation for Going Outside – Using KWHL

This isn't rocket science—it's easy to plan for time in the outdoor classroom! Use a KWHL chart (**K**now-**W**onder-**H**ow-**L**earned) as a graphic organizer for planning field work and gathering information. To prep, think of a topic (insects, habitat, adaptation, etc.), then ask: “What do we already **K**now?” “What do we **W**ant or need to know or what do we **W**onder about?” “**H**ow are we going to find out?” After returning inside, compare findings to predictions and summarize by asking: “What have we **L**earned?” No special equipment required—students need only their five senses and a journal page to record discoveries!

So What Can We Do Out There?

Much more information and many more resources are available: https://www.fws.gov/refuge/Fergus_Falls_WMD/visit/for_educators.html
Here is just a sample of **Top Field Activities** for the outdoor classroom.

1. **In the Moment:** Students stand single file looking out on a natural vista. When the leader gives a signal, everyone stands quietly, just observing what's happening in nature. Extend the time to several minutes and add journaling or a layback as students grow accustomed to being still. Even if only for 30 seconds, it's calming and refreshing.
2. **The Bioblitz:** A weekly, monthly, or seasonal activity. Teacher and students walk quietly along the same path in the outdoor classroom. They observe and use their journals to note the species they see.
3. **The Discovery Hike:** Without a specific agenda, the class explores the outdoor classroom to see what is happening in nature that day. Prepare by asking students to predict what they may see and then ask them to record actual findings in their journals. Leave space on journal pages to record date and time as well as weather data such as temperature, wind direction and velocity, and cloud types observed.
4. **The Layback:** This activity pairs well with others. If the ground is dry, invite students to sit down, get acclimated, and then lie back on the ground! Ask them to observe the sky, clouds, treetops, birds, whatever. They may then write about or sketch what they see. When they get up, remind them to fluff up the flattened area where they were lying so as to “Leave No Trace.” This activity will likely become a class favorite.
5. **Sketching:** Teach simple sketching techniques to promote careful observation and enhance field journal entries.
6. **Bonus – No-Talk-in-the-Field Day:** That's right—no talking! Record discoveries and feelings in nature journals.

The Expedition at Sherburne NWR— A Community Approach to Nature Education



Our Journey—Finding the Way to the Outdoor Classroom

The Guides—Refuge Staff and Volunteers

Expedition Leaders—The Teachers

Our Compass—Nature Journaling, Phenology, Knowing Our Outdoor Places, Naturalists as Models At the Center—A Sense of Wonder

The Corps of Discovery—The Students

Examples of Outdoor Classroom Journal Sheets

Name: _____
Weather: _____

Winter Wildlife Mysteries

 Tracks	 Homes
 Scat	Mysteries ?



Invertebrates at Sherburne NWR



Names: _____ Date: _____

<p style="text-align: center;">Land Invertebrates <small>(Describe/draw land invertebrates)</small></p> <p><u>To ask:</u> Size? Colors? Body parts? Movement?</p>	<p style="text-align: center;">Habitat of Land Invertebrates <small>(Describe/draw where you found land invertebrates)</small></p> <p><u>To ask:</u> Up high? In the mud? On a plant?</p>
<p style="text-align: center;">Water Invertebrates <small>(Describe/draw water invertebrates)</small></p> <p><u>To ask:</u> Size? Colors? Body parts? Movement?</p>	<p style="text-align: center;">Habitat of Water Invertebrates <small>(Describe/draw where you found water invertebrates)</small></p> <p><u>To ask:</u> Up high? In the mud? On a plant? In water?</p>
<p style="text-align: center;">WEATHER</p> <ul style="list-style-type: none"> • Air Temperature: _____ • Wind Speed/Direction: _____ • Sky: _____ • Words to describe today's weather: _____ 	<p style="text-align: center;">WONDER - Amazing! <small>(What made your group go "Whoa!" or "Cool!?!")</small></p>

Expedition Model for Nature Education

Located about an hour's drive northwest of the Twin Cities of Minneapolis and St. Paul, MN, Sherburne National Wildlife Refuge is a 30,700 acre expanse of prairie, wetlands, and endangered oak savanna habitat. The surrounding area includes an "exurban" mix of small towns, townships with 2-10 acre lots, farmland, at least 8 school districts, and one city of approximately 67,000. The refuge is part of a complex of 4 refuges managed mostly from Sherburne by a staff that includes only one Visitor Services Manager/Park Ranger to coordinate public events, communications, volunteers, and education programs for all 4 sites. The Oak Savanna Learning Center with its 2 classrooms opened at Sherburne in June 2016 with much fanfare but no extra staff or funding.

Our Challenge: How can we connect kids to nature given limited Refuge System and school district budgets and staffing? And while we're at it, can we do it in a sustainable and scalable way?

Our Solution: The Expedition Model!

Courage, determination, and creativity led to the creation of **Sherburne's Expedition Model**. Like Lewis and Clark, we needed to plan carefully, select skilled people from the community to join our team, and expect to take a long time to reach our goal of connecting kids to nature by "knocking down classroom walls."

- **We are training and supporting teachers to lead the way**, just as Lewis and Clark led the way through the lands of the Louisiana Purchase to the west coast more than 200 years ago. Visits to the refuge are "real school"—refuge lessons are aligned with the Minnesota State Learning Standards.
- **Our Visitor Services Manager and refuge education volunteers are the interpreters and guides**, as Sacajawea was an interpreter and guide for Lewis and Clark.
- **Participating students constitute the Corps of Discovery**. Lewis and Clark began their expedition at the Missouri River. Our students begin their journey in their outdoor classroom at school.
- **The Compass gives us direction**, and our essential gear includes our five senses; a few hand lenses and rulers; perhaps a handful of thermometers and wind meters; and clipboards with pencils and paper all around.
- **We are seeking multiple sources of funding**. Participating school districts cover transportation costs as their limited budgets allow. Beyond that, to fund buses for refuge visits and to cover the cost of volunteer and teacher workshops, we are looking to the people and communities around the refuge. The Friends of Sherburne NWR, a 501(c)(3) nonprofit partner of the refuge, provided major funding to outfit the new learning center and continues to provide "bus money" and funds to cover training costs; other local businesses and civic organizations are contributing to defray transportation expenses for the schools in their own communities.

So what makes an Expedition successful?

- **Support and commitment of decision-makers:** This means leaders at all levels—refuge management, school superintendents and principals, participating teachers, funders and fundraisers, and the community at large.
- **Willingness to "explore the unknown" and acquire new skills:** We "entered the wilderness" together and are practicing new skills, experimenting with different approaches, and giving each other moral support. The USFWS provides outdoor classroom workshops for teachers; teachers work with curriculum specialists to adapt their lessons to be delivered using the outdoor classroom; school administrators find money to pay teachers to attend training; principals are willing to develop and use natural areas adjacent to their schools for outdoor learning.
- **Using natural spaces at/near school as learning venues is as important as visiting the refuge:** No transportation dollars needed to walk out the school door and turn the school yard into an outdoor classroom!
- **The "guides" provide ongoing support:** Refuge staff and volunteers support teachers between refuge visits by delivering lessons at school, providing lesson plans for refuge visits, and answering questions that may arise.

Is it worth the effort?

The answer is a resounding "yes!" In one second-grade class at the end of the last school year, all but one student said the best part of second grade was the outdoor program. Another second-grade student asked her mom never to throw away her nature journal, which now sits on their family's coffee table. After a refuge visit, teachers spoke of their surprise, delight, amazement, excitement, joy, and inspiration. And teachers consistently mention feeling that they receive as much, or more, from the program as their students. Yes, so far this has been a successful Expedition!