

Nature Journaling



Grade: Kindergarten – 6th **Seasons:** All **Time:** 1-1½ hours
Group Size: 1 class **Ratio:** 1:5, adults: students

Note: PWLC staff appropriately adapt this lesson for each grade level. Nature Journaling serves as a second program when two classes visit simultaneously or when one class visits for a full day experience at the PWLC.

For the Teacher:

Overview	After a mini-lesson on nature journaling, students participate in a field activity, investigation, or lab, recording their observations, data, and discoveries in their field journals. Students share their results and reflect upon their discoveries, then determine how they will use their material in order to share their experience with others. Suitable for novice and experienced journalists alike.
Subjects Covered	Science, Language Arts, Math, Art
MN Academic Standards Supported	This lesson helps support K-6 th grade standards in both Language Arts and Science. PWLC staff recommend that teachers consult the state standards to determine which standards best correlate depending upon the grade level and chosen activity.
Skills Used	Observing, writing, sketching, sequencing, data collection, reflecting, and others depending upon the activity
Performance Objectives	After completing this activity, students will be able to... <ul style="list-style-type: none"> • Define the word journal (a daily record of observations) • Correctly sequence the steps to using a nature journal (go outside, observe, record, reflect, use) • Name two ways of recording observations in a nature journal (words, numbers, sketches, rubbings, maps) • Recognize that observations are made using multiple senses (sight, sound, touch, smell) • Name four kinds of things that could be recorded in a nature journal (title, date, location, weather, beauty, wonder, surprise, questions) • Suggest two reasons why to keep a nature journal (history, polished writing or art, connect with land, slow down, relax, reflect)
Vocabulary	Journal, sketch, observation, reflect

For the PWLC Instructor:

PWLC Theme	The Prairie Pothole Region
Primary EE Message	The prairie pothole region is valuable and in need of restoration and protection.
Sub-messages	<ul style="list-style-type: none"> • <i>Wildlife: The prairie pothole region is home to a variety of resident and migratory wildlife.</i> • <i>Habitat: The prairie pothole region is a unique and rare ecosystem.</i>
PWLC EE Objectives	<ul style="list-style-type: none"> • Use scientific methodology to explore the environment (ask questions, hypothesize, collect data, analyze data, form conclusions, make recommendations). (Wildlife and Habitat) • Describe and apply basic ecological concepts such as energy flow, community, biodiversity, change, interrelationships, cycles, and adaptations. (Wildlife and Habitat) • Identify the components and functions of a given ecosystem by observing, counting, and describing the animals and plants in that ecosystem. (Wildlife and Habitat)

Materials	<u>Provided by the Teacher:</u> <ul style="list-style-type: none"> • Science notebooks or journals from school, pencils <u>Provided by PWLC Staff:</u> <ul style="list-style-type: none"> • crayons, colored pencils, rulers, collecting equipment, weather instruments, binoculars, hand lenses, or other equipment depending upon the activity, examples of nature journals, Let's Go Outside backpacks. See section, "Field Activity Options."
Location	Classroom, dining hall, or barn; outdoor site will vary depending upon the chosen activity

Background Information

"The student may wonder at the time what good it all is. One answers that, first, it is always useful to have a record of one's doings; but, more important, writing a fact makes one observe it better."

-- Ernest Thompson Seton

The purpose of this lesson is to introduce nature journaling to elementary students. "Nature journaling is the process of keeping a place-based, personal record of events, observations, and experiences in the outdoors." (Hofmann and Passineau) That process is typically an ongoing one and may start at the PWLC or continue and expand here for those who have already learned how to journal. Or, perhaps the school teacher simply wishes to allow students to dip into in a different method of keeping records and recording thoughts. Students learn journaling best, however, by journaling on a repeat basis as part of an ongoing process.

Compared to journals in general, a nature journal is unique in that *place* takes on a central role as the main subject along with the journalist as observer. "There is a deeper awareness of the setting, seasons, and other species." (Hofmann) A journal may be a phenology log; a field guide to animals, plants, geology; and an explorer's log of journeys and findings. It may also be a collection of reflections about a place and connections with it. Its content is not just intellectual or just emotional – it is *both*.

As learning tools, nature journals can serve a broad spectrum of purposes. A nature journal is a flexible teaching tool which is easily integrated with most academic subjects. It is adaptable to all learning styles and abilities and a source of endless individualization possibilities. Nature journaling provides opportunities for authentic learning which incorporates writing and drawing as major elements and therefore uses verbal, nonverbal, analytic, logical, spatial, and synthetic abilities. Using a journal allows students to lead their learning with their own questions making it student and inquiry driven. Journals can include both personal expressions and objective observations. Objective information might include scientific experiments, weather, wildlife behavior, and seasonal changes. Keeping a nature journal can be a powerful experience because it helps the observers slow down, carefully take note of their surroundings, make first-hand, concrete observations of nature, and become better observers. Good science depends upon keen observations, and nature journaling is an effective way to develop that skill.

John Muir wrote in his journals “about the beauty he saw in nature. He also drew sketches detailing information about plants, animals, mountains, glaciers, and landscapes. He used his journals to compose letters to friends, articles, and books to share his love of nature, and to enlist people's support to preserve wilderness. Muir's journals gave him a wealth of recorded experience from which 10 books and over 200 articles were published. People continue to gain insight into nature's beauty and importance in our lives from his writings.” (Sierra Club) Likewise student journals can be a source of raw data and information from which to write poems, reports, and speeches or develop posters, songs, art, and other polished work.

Intertwined with its value as a learning tool, keeping a journal allows time for reflection and relaxation. It allows thinking and feeling with both head and heart as a naturalist, a combination of intellectual learning about the environment and emotional connection and attachment to a place. Rather than rushing through a natural area, students have personal time and a direct experience which can help them feel more connected to the land and develop a sense of place. A nature journal provides an opportunity to study the natural world, to grow a deeper relationship with the earth, to develop a greater awareness and caring for it. “For many students, life in the artificial environment of climate-controlled schools, malls, and automobiles make the natural environment seem peripheral and irrelevant. In addition, formal learning is increasingly based on electronic, prepackaged information transfer.” Yet science teachers know there is no substitute for direct experience to motivate and engage students. Done repeatedly over time, nature journaling offers sustained contact with neighborhood nature. Further, personally created nature journals provide students with ownership of their experiences and reinforces active learning. (Dirnberger, McCullagh, and Howick) Students capture and claim moments with the world around them.

Journal keeping is historical, used by individuals who left wisdom and knowledge through their journals. Through the ages, scientists, artists, authors, poets, explorers, and many others have kept journals to record their observations and experiences including Leonardo da Vinci, Carl Linneaus, Thomas Jefferson, Meriwether Lewis and William Clark, John Muir, and more recently, Olaus Murie, Aldo Leopold, and Rachel Carson. Some naturalists even started a lifelong practice of journaling in childhood, including John James Audubon and Ernest Thompson Seton. Numerous occupations today require documentation in journals. Horticulturalists keep phenology journals to record plant growth. Museum exhibit curators keep a journal account of a specimen collection. Biologists rearing and releasing the endangered whooping crane record daily observations of health information such as diet and weight as well as daily distances traveled following an ultra light aircraft. As a tool of many jobs, journaling is a valuable skill for students to develop.

Journals can be started using a few simple tools: several sheets of loose leaf paper, a hard writing surface (a clipboard will suffice in the field), and a writing utensil. Consider binding papers together with a staple or two, providing multiple pages to use over a period of time. At the start of each journal entry, record the date, time of day, location, and weather (air temperature, wind speed and direction, description of the sky, etc.).

After recording this basic information, a student can choose something more specific to study. While in the field, students should be encouraged to record information without using field guides or other textbooks because this encourages them to improve their own observation skills. Back in the classroom, students can refer to their journal entries to research and find more information about what they observed. With advanced training and practice, they may even use their journals as a tool to accurately identify unknown plants and animals.

Although many students will need some help getting started, one need not be an expert naturalist, writer, or artist to guide others in nature journaling. Enthusiasm, a wide range of field activities, and journaling and discovering alongside students draws them in, inspires them, demonstrates the value of journaling, and allows instructors to enjoy the benefits of journaling, too. The instructor is more aptly named the collaborator, guide, coach, or facilitator.

Nature is the true source of inspiration for a nature journal. Observing nature is more important than writing and is the heart of the journal. Students should observe first and write second because observing is what gives them something to write about. Once writing begins, it may be helpful to look back and forth between the page and the subject. Journals can also include sketches, rubbings, maps, colors, tables, measurements, questions, wonder, surprise, mystery, delight, and beauty. Avoid editing for spelling, grammar, and punctuation in the field. However, editing for accuracy in content is a valuable use of time and essential to the field journaling process. Key to deeper thinking, reflection time allows students to process their experience intellectually and emotionally, infer meanings, and draw connections and conclusions.

After students have completed their journal entries, providing an opportunity to share their observations with others in their group can further increase learning. Sharing provides students with the opportunity to show what they saw and learned. It can help students see the diversity of observations that can be made in nature and the diversity of journaling styles among students. Further, teachers are afforded a valuable glimpse at students' metacognition. Such is the journey that journaling can lead as students make discoveries about their home biome and also about themselves.

*"I write to record the truth of our time, as best as I can see it....
I write to make a difference....To honor life and praise the divine beauty of the world.
For the joy and exultation of writing itself. To tell my story."*

Edward Abbey, One Life at a Time, Please

Teacher Preparation

- Help save paper. Bring your students' science notebooks or journals to record their field data and discoveries in. To make journals, see section "Make a Nature Journal," visit http://www.sierraclub.org/education/nature_journal_template.pdfv for a booklet template, or simply staple half sheets of paper together. If science notebooks or journals are not available, please inform the PWLC staff that you

will need paper and clipboards when booking your date.

- Select which field investigation, activity, or lab your class will participate in. Please see section “Field Activity Options.” Please inform PWLC staff of your choice when booking your date.
- We highly recommend conducting one or more of the suggested extensions before your visit in order to integrate this field investigation into the classroom study of nature, scientists, naturalists, writing, journals, animals, prairie, wetlands, habitat, or other topics. We believe such integration enhances student motivation for learning in other curricular areas. See section, “Teacher-Led Extensions/Adaptations/Assessment Ideas.” For suggested literature launchers, see section, “References and Resources.”

PWLC Staff Preparation

Gather materials and appropriate equipment depending upon the grade and topic selected. Choose which field site to use.

Nature Journaling Procedure

1. In the classroom, welcome students, teachers, and chaperones to the Prairie Wetlands Learning Center.
2. Organize students into small groups, each led by a chaperone, and inform chaperones of their role in following through on instructions for students.
3. Begin a mini-lesson on nature journals. Ask students to tell you what a nature journal is. Write down their responses as a list on the board. Appropriate responses might include a book with words, sketches, numbers, and observations that are honest and true. Add any items to the list that they did not mention.
4. Ask them how someone starts a nature journal – what steps would they follow? Write down their responses as a separate list on the board. Appropriate responses might include go outside, make careful and first hand observations, record observations such as weather, beauty, feelings like wonder and surprise, questions, meanings. Record what you find, the truth, not something imagined. Add any items to the list that they did not mention.
5. Ask student why someone would keep a nature journal? Write down their responses on the board as a third list. Appropriate responses might include to keep a record, to record history, to relax, to slow down, to reflect, to connect with the land, to use later for polished writing or art.
6. Show students examples of nature journals, yours and/or others. Show them examples of Ernest Thompson Seton’s journals and read excerpts from page 87 of By a Thousand Fires by Julia M. Seton.
7. Ask students to open their own science notebooks or field journals to the next blank page. Depending upon the grade and field activity, show them how to set up their page as a data sheet with a title, date, location, and quadrants to collect and record information about their given topic.
8. Allow them suggest what kinds of things they will record on this page for three of the quadrants, and provide each quadrant a subtitle accordingly. For example, if

the class will go outside to observe birds, in one quadrant they might record how many different kinds of birds they see; in another, they might sketch their favorite bird; and in the third, they might write down as many adjectives as possible to describe their favorite bird. In the fourth quadrant, they do a contour sketch.

9. Explain and demonstrate how any necessary field equipment will be distributed and used. Provide that equipment to each chaperone to distribute to their small group of students.
10. Line up at the door and remind students that they are naturalists. How do naturalists behave outside? (respectful, quiet, in the moment, etc.)
11. Start by demonstrating how to do a contour sketch and allowing them time to do one in their journals. Lead a brief discussion on what they discovered about themselves and journaling from this exercise. (it captures the essential quality of the subject; it makes you slow down and observe more carefully; journaling is about the process or journey not the product or destination)
12. Conduct the chosen field activity. Move from group to group to provide assistance and answer questions. Model good naturalist behavior for them to follow.
 - a. Encourage students to use their powers of observation to look slowly and closely.
 - b. Prompt them with questions to help them truly perceive (notice using senses, especially something others miss): *What do you notice? What does it remind you of? Is there a mood? What does it mean? What does it make you wonder about? What questions do you have about it?*
 - c. Record your own observations and data in your own field journal. Your example validates their journaling activity as important and demonstrates that learning is a lifelong pursuit.
13. Back inside, collect equipment and ask students to share their discoveries with each other in their small groups. Ask a few students in the class to share their discoveries with everyone.
14. Explain that naturalists usually use their nature journals as a source of information for polished writing or art. Ask students to think of one way they could use their journals to share their experience with someone who wasn't here today. Who will they share it with and how? Some possibilities include sharing it with a friend or relative by writing an email or letter, by making a card or picture. They might share with others at school by creating a mural, play, poem, story, or song.
15. Encourage them to keep going outside anywhere they are to explore and to use their journals; it is free and interesting and keeps them occupied. Thank them all for coming to the PWLC and invite them to return again.

Field Activity Options

Teachers choose one of the following options for their field activity and inform PWLC staff when booking.

Kindergarten – 2nd Grade

Topic	Field Activity	PWLC Materials
Invertebrates	Collect, examine, describe, measure, sketch, and release prairie or wetland “bugs”	Nets, hand lenses, bug boxes, colored pencils, keys/cards
Small things	Examine one meter square of prairie; record discoveries with numbers, words, maps, sketches	Hoola hoops, hand lenses
Monarch tagging (August 15 - September)	Search for, capture, tag, and record data about migrating monarch butterflies	Nets, tags, monarch puppet
Plants (May through September)	Closely examine, describe, sketch, measure, identify a prairie and/or a wetland plant	Colored pencils, rulers, wildflower brochures, wetland plant identification cards
Nature journaling sampler	Use several tools to aid in journaling such as hand lens, cloud chart, view finder, compass, thermometer, and binoculars	Let’s Go Outside backpacks
Nature detectives (December through March)	Search for evidence of animals, describe, sketch, infer, and tell a story about what happened	
Snow crystals (December through March)	Observe falling snow crystals with hand lenses, describe, sketch, measure, and identify them	Hand lenses/loupes, rulers, snow crystal charts
Weather	Practice using thermometer, ruler or meter stick; record data and sky observations	Thermometers, rulers, meter sticks, cloud charts
Patterns in Nature	Look for numbers, letters, and shapes in the prairie and wetlands	<u>ABCs Naturally</u> by Lynne Diebel and Jann kalscheur

3rd – 6th Grades

Topic	Field Activity	PWLC Materials
Birds	Learn how properly adjust and use binoculars, then observe, count, sketch, and identify birds	Binoculars, bird identification books/photos/cards, colored pencils
Byrd Baylor – favorites, celebrations, or rocks	Listen to a story, then go outside to find and record your favorites, a celebration, or rocks	Byrd Baylor book
Frog calling survey (April and May)	Visit one or more wetlands, listen for frogs, record data about species and abundance	Identifier, frog photos
Invertebrates	Collect, examine, describe, measure, sketch, and release prairie or wetland “bugs”	Nets, hand lenses, bug boxes, colored pencils, keys/cards
Mapping – sounds, colors, watersheds	Make up to three maps of a wetland/prairie to depict colors, sounds, and a watershed	Colored pencils
Monarch tagging (August 15 - September)	Search for, capture, tag, and record data about migrating monarch butterflies	Nets, tags, monarch puppet

Nature journaling sampler	Use several tools to aid in journaling such as hand lens, cloud chart, view finder, compass, thermometer, and binoculars	Let's Go Outside backpacks
Plants (May through September)	Closely examine, describe, sketch, measure, identify a prairie and/or a wetland plant	Colored pencils, rulers, wildflower brochures, wetland plant identification cards
Reading the land (December through March)	Search for evidence of animals, describe, sketch, infer, and tell a story about what happened	<u>A Sand County Almanac</u> , identification cards
Seed harvesting (June through October)	Collect, examine, describe, measure, sketch, identify native prairie seeds	Seed bags, loupes, rulers, colored pencils, seed tubs
Sketching Nature	Practice various observation and art techniques such as sketching basics, contour sketching, gesture drawing, view finding, sound mapping, and/or identifying a plant	Pencils, pens, colored pencils, view finders, clipboards, prairie plant brochures or wetland plant identification cards
Snow crystals (December through March)	Observe falling snow crystals with hand lenses, describe, sketch, measure, and identify them	Hand lenses/loupes, rulers, snow crystal charts
Weather	Practice using thermometer, wind meter, compass, ruler or meter stick; record data and sky observations	Thermometers, wind meters, compasses, rulers, meter sticks, cloud charts
Winter ecology (December through March)	Measure and observe the snow pack, record temperatures, find and observe pond ice	Rulers, meter sticks, hand lenses, thermometers

Weather Alternatives

Field investigations take place rain or shine. Everyone should dress appropriately for the weather. In the event of unsafe weather (lightning, high winds, extreme cold) or pouring rain, everyone must come indoors. PWLC staff make every effort to make your travel worthwhile despite the weather and prepare indoor, age-appropriate plans. PWLC staff welcomes teacher input into these plans. Some possible alternatives might include:

- Go outside for a very short amount of time, even if only under the deck to conduct the chosen field activity if possible.
- Bring plant/seed or aquatic invertebrate samples indoors for examination.
- Use mounted specimens, furs, and/or skulls of birds and mammals.
- Use latex animal tracks with ink pads to create stories.
- Conduct a map scavenger hunt indoors. See 6th grade, fall lesson, "Mapping a Prairie Wetland."
- Tour the exhibit area and watch prairie wetlands videos in the sod house theater with the objective of searching for birds, invertebrates, plants, or observing seasonal changes in the land and weather.

PWLC Staff-Led Adaptation

For younger students (K-2), modify the mini-lesson on nature journals by first asking what nature is and then what a journal is. Explain a few reasons why people keep a nature journal. Then continue on with getting ready to go outside, but leave their journals or papers in the classroom. Conduct the field activity and then return to the classroom. Ask students to draw a picture of their favorite thing they did or saw outside (or the most beautiful thing or the strangest thing, etc.). Chaperones can help children who cannot write by adding a few labels or a caption. Collect the papers and provide them to the teacher to bring back to school and make a class journal, each student's paper serving as a page in the journal. A cover can be created with a title such as, "Our Class Nature Journal of the Prairie Wetlands Learning Center." Display the class journal for visitors to see, such as parents during conference, or send it home with a different student each week to share with families.

Teacher-Led Extensions/Adaptations/Assessment Ideas

- Conduct the mini-lesson outlined above at school prior your visit. This will allow your students more time outdoors at the PWLC. Please inform PWLC staff when booking if you will be conducting the mini-lesson at school so staff can plan accordingly.
- Students may wish to make and bring their own nature journal to use at the PWLC. See section, "Make a Nature Journal," for one possibility. To make a twig-bound journal, visit <http://bringinguplearners.com/2008/01/28/homeschool-hacking-tips-make-your-own-nature-journal/>.
- Read an excerpt from The Sense of Wonder by Rachel Carson, and then take a walk to find examples of wonders in nature. Record them in field journals.
- Visit the same place outside with your students on a regular basis, such as daily, weekly, monthly, seasonally, or annually. Record changes over time in journals.
- Explore your school grounds or local park together, and then sit in silence as students use their nature journals to complete a free write.
- Send journals home with students to make observations and discoveries in their yards. They can replicate a field activity done at school and/or at the PWLC, then compare and contrast results from each site.
- Periodically pair students up and have a journal exchange. Students read each others' journals to make new discoveries about how to journal and individualization. Provide prompts to guide discussion. Comments may be shared verbally or in writing.
- If cameras are available, use them in combination with writing and sketching. For example, using field notes recorded when journaling, write a poem to accompany a photo. Compare and contrast something that was both sketched and photographed.
- Draw connections to curriculum with nature journals. Link them to academic activities when possible such as for science concepts and vocabulary, spelling, writing (similes and metaphors, onomatopoeia, punctuation, adjectives, verbs, nouns), poetry, art, math (fractions, percents, mean, mode, median, measurements, benchmarking), local history, and data organization and

interpretation.

- Explore the lives and writings of famous naturalists, role models for nature journaling. Some possibilities include Lewis and Clark, John Muir, Aldo Leopold, and Rachel Carson. Read biographies about them, dress like them, watch or listen to recordings of them, and most importantly, apply their ideas to student journaling.
- Use journal entries to produce polished work in creative writing, science, art, or music, key to preventing nature journaling from becoming a form of “busy work.” Teaching how to use journals outside is a first step. Complete the process by allowing students to productively use it to share their discoveries with others, just as adult naturalists and scientists do. They might write reports, write and present speeches, create a class publication (field guide, newsletter, literary collection, phenology calendar, audio/video recordings), lead guided tours, organize a gallery display and reception, or hold a conference to share discoveries made through journaling. Some of these options would also be adaptable for web site publishing and class fundraisers complete with a book signing, public reading, or celebration.
- As a class, write a free-verse poem using observations from field journals. Each student writes one thought about their experience. Go systematically around the room and ask each student to read their thought aloud. Write each thought on a poster sized piece of paper on the wall. Each student reads the previous student’s sentence and adds their own to it, building the poem. Each sentence gets written on the poster, but cover the preceding lines so only the previous sentence shows. Once each student’s sentence has been read and recorded, then uncover the completed poem and read it aloud. Add photos or art if desired and display for others to enjoy.
- Read student journals periodically and provide written encouragement, questions, or further information.
- Allow students to evaluate their own journal. Provide prompts such as which entries are their favorites and why? Do they see patterns among the entries? What would someone reading their journal 100 years from now discover about them and their place?
- Grade journal entries using an assessment rubric and clear criteria.
- Give an open-journal quiz which bolsters incentive to make complete entries.
- Pair students with buddies to introduce journaling to younger students.

References and Resources

For Adults

- A Sand County Almanac by Aldo Leopold
- Backyard Almanac, a 365-Day Guide to the Plants and Critters that Live in Your Backyard by Larry Weber
- By a Thousand Fires, Nature Notes and Extracts from the Life and Unpublished Journals of Ernest Thompson Seton by Julia M. Seton
- Into the Field, a Guide to Locally Focused Teaching by Clare Walker Leslie, John Tallmadge, and Tom Wessels

- Keeping a Nature Journal, Discover a Whole New Way of Seeing the World Around You by Clare Walker Leslie and Charles E. Roth
- Moon Journals: Writing, Art, and Inquiry Through Focused Nature Study by Joni Chancer and Gina Rester-Zodrow
- Nature Journaling, a Creative Path to Environmental Literacy, a Guide for Sinking Roots in Place and Branching Out Toward Environmental Literacy in Grades 4-8 by Kate Hofman
- One Square Mile, an Artist's Journal of America's Heartland by Cathy Johnson
- Project Bluestem, Neal Smith National Wildlife Refuge, U.S. Fish and Wildlife Service
- Rhythms of the Refuge, Horicon National Wildlife Refuge
- The Naturalist's Field Journal, a Manual of Instruction Based on a System Established by Joseph Grinnell by Steven G. Herman
- The Sense of Wonder by Rachel Carson
- Using Science Notebooks in Elementary Classrooms by Michael P. Klentschy
- "A Nature Journaling Guide: Fostering a Naturalistic Outlook" session presented by Kate Hofmann and Joe Passineau, University of Wisconsin-Stevens Point, at the North American Association for Environmental Education Conference, Biloxi, Mississippi
- "Folding Memories" by Janine Newhouse, Strides newsletter by Leopold Education Project, Winter 2006
- "Writing and Drawing in the Naturalist's Journal," by Joseph M. Dirnberger, Steven McCullagh, and Tom Howick. The Science Teacher, January 2005
- Teaching in the Outdoor Classroom educator workshop, Prairie Wetlands Learning Center, Dave Ellis, instructor
- How to Draw Birds for a Naturalist Journal, <http://www.wildernesscollege.com/how-to-draw-birds.html>
- Introduction to Nature Journals, http://www.smithsonianeducation.org/educators/lesson_plans/journals/index.html
- Keeping a Nature Journal, http://www.sierraclub.org/education/nature_journal.asp
- Make a Twig Nature Journal, <http://bringinguplearners.com/2008/01/28/homeschool-hacking-tips-make-your-own-nature-journal/>
- Nature Journaling Blog, http://www.eeweek.org/nature_journal.htm
- Nature Journaling, http://pbskids.org/backyardjungle/info/nature_journaling.php
- Nature Journaling, <http://www.care2.com/greenliving/nature-journaling.html>
- Nature Journaling, <http://gnmparents.com/the-littlest-naturalists-part-iii-nature-journaling/>
- The Nature Journal as a Tool for Learning, <http://www.newhorizons.org/strategies/environmental/matsumoto.htm>
- Writing and Drawing in the Naturalist's Journal, http://www.nsta.org/store/product_detail.aspx?id=10.2505/4/tst05_072_01_38
- The Illustrated Nature Journal, a Handbook, <http://www.pinicola.ca/jourbook.htm>

For Children

- By the Shores of Silver Lake by Laura Ingalls Wilder, excerpts from “The West Begins,” “Shanty on the Claim,” and “Where Violets Grow.”
- Cloud Dance by Thomas Locker
- Draw and Color Insects by Walter Foster and Diana Fisher
- Everybody Needs a Rock by Byrd Baylor
- Guess Who My Favorite Person Is by Byrd Baylor
- I’m in Charge of Celebrations by Byrd Baylor
- Lewis and Clark, the Adventure in the West by Frank Burd
- My Nature Journal by Adrienne Olmstead
- Salamander Rain: a Lake and Pond Journal by Kristin Pratt-Serafini
- The Lewis and Clark Expedition, Join the Corps of Discovery to Explore Unchartered Territory by Carol A. Johmann
- The Other Way to Listen by Byrd Baylor
- Where Does the Wind Blow? by Cindy Rink
- Nature journal template,
http://www.sierraclub.org/education/nature_journal_template.pdfv

Credits

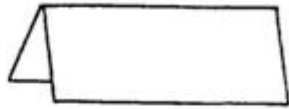
This field investigation was developed and written by Prairie Wetlands Learning Center Staff, U.S. Fish and Wildlife Service. Thanks to Prairie Science Class naturalist Tia Thysell for reviewing this lesson plan. Thanks to Dave Ellis, Prairie Science Class coordinator, for contributing to this lesson. Thanks to the following teachers for reviewing this lesson plan: Sarah Collins, home school parent/teacher, kindergarten and 2nd grade; Renee Larsen, 2nd grade, Fergus Falls; Kari Kreft, 2nd grade, West Central Area Schools; Vicki Hanneman, 3rd grade, Fergus Falls; Dorothy Droll, 5th grade, St. Henry’s School, Perham; Stacy Lundquist, Battle Lake, 5th and 6th grade math and reading; Deb Strege, licensed teacher. Thank you to Mark Baldwin, Director of Education, Roger Tory Peterson Institute of Natural History, Jamestown, New York, for reviewing this lesson.

Student material follows.

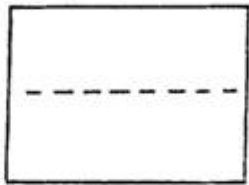
Make a Nature Journal

Student-Made Journals for Prairie Celebrations

1. Fold paper in half lengthwise (hotdog fold).



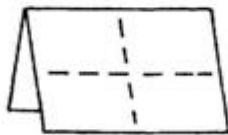
2. Open.



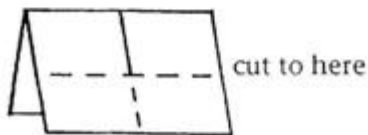
3. Fold paper in half the other way 3 times (hamburger fold).



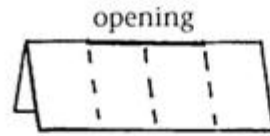
4. Open to first fold.



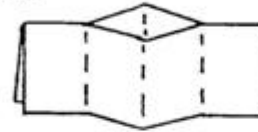
5. Cut from top fold down center foldline to middle foldline.



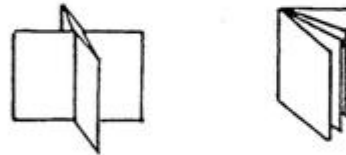
6. Open. Refold on very first fold lengthwise (hotdog fold).



7. Push from each end so opening forms a diamond.



8. Keep pushing until you have an "X". Fold "X" into a book.



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