



## Neal Smith National Wildlife Refuge

School visits to the Prairie Learning Center (PLC):

**Mission:** Study Neal Smith NWR and use the Iowa prairie ecosystem as an integrating and motivating context in each related curricular area to engage school children at all grade levels in real world, field-based learning experiences.

**Goals:**

All student visits and developing school partnerships will include:

1. A search for *wonder*
2. Nature journals
3. A place-based curriculum, focused on studying the land and wildlife at Neal Smith NWR, while highlighting global connections when appropriate
4. Integrated Phenology study, tracking changes overtime
5. Studying and modeling past and present naturalists (e.g. Rachel Carson, Aldo Leopold, Byrd Baylor, Ernest Seton, Lewis and Clark) as a pathway to exploration
6. Inviting all school children, teachers, and chaperones to become naturalists, or people who always ask wonder questions and make discoveries about the environment
7. Developing the skills of critical thinking, problem solving, teamwork, stewardship, and citizenship
8. Connecting 1<sup>st</sup> American and early settlement history when appropriate

**Guiding principles:**

- The main subject of any school group visit to PLC should be the tallgrass prairie ecosystem. The prairie and the life in it should be the main focus of all activities.
- A minimum of materials and objects will be required for all activities; realizing that materials and equipment distract from field study.
- This document and enclosed lessons should be continually reviewed and adapted as Neal Smith NWR and environmental education evolve.



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## Fall Units

“Winter is an etching, spring a watercolor, summer an oil painting and autumn a mosaic of them all.” - Stanley Horowitz

Grade 4:



### 1. Reading the Landscape:

Objective: Students map a study site of the prairie including traditional map symbols. As students hike, they plot important personal discoveries on their maps.

Students brainstorm about important components of maps and how to make maps. Students are presented with examples of maps created by explorers and naturalists such as Ernest Seton and Lewis and Clark to glean more ideas. Next, students go on a hike through the prairie and record details on their maps that reflect their adventure, journey, and important discoveries. When they return, students are invited to share their maps and highlight the events that they thought were especially important.

### 2. Prairie Celebrations:

Objective: Students write, sketch, and reflect on personal prairie discoveries that they think are worth celebrating.

Students have an open discussion about activities, memories, or achievements that they believe are worth celebrating. The field leader records their answers on the board. Next, students listen to the book I'm in Charge of Celebration written by Byrd Baylor. While reading, the field leader draws students' attention to the words and detailed language Baylor uses to describe her celebrations and what she deems worth celebrating. Afterwards, students share their thoughts about Byrd Baylor's celebrations and how her celebrations are different than the celebrations they listed. The field leader uses a T-chart, with one side labeled "Our Celebrations" and the other side labeled "Byrd Baylor's Celebrations", to compare the different types of celebrations. Next, students are asked to use their nature journals and search for a celebration in the prairie that fits with Byrd Baylor's definition of a celebration. Students are expected to write and draw about their celebration. Students then reflect on their celebration by sharing it with a partner. Students contemplate if they could find something worth celebrating everyday in nature.

### 3. Habitat Comparisons:

Objective: Students predict and then investigate how different elevations are related to specific forms of prairie life.

This is a student-led activity that puts learners in charge of answering the question, "How does elevation affect prairie life?" Students work in small groups to make observations from two pre-selected elevation areas. One elevation area is at the top of a hill and the other elevation area is near the bottom of the hill. As the observations are made, each student uses field I.D. sheets to record the species they find at each level in their nature journals. Back inside with the students, the field leader draws a Venn diagram on the board, labeling one side "Top of Hill" and other side "Bottom of Hill". Students share their findings and instruct the field leader where to place them within the Venn diagram. Once the diagram is complete, students speculate what types of environmental factors or variables contributed to the patterns they discovered. From their evidence, students work to draw a conclusion about the influence elevation has on prairie habitats.



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## Spring Units

*"If we had no winter, the spring would not be so pleasant."*

– Anne Brandstreet



### Fourth Grade:

#### 1. Bison Investigation:

Objectives: Students use nature journals and binoculars to answer their own questions about bison characteristics and behavior.

Students listen to and look at journal entries about bison from the early 1800s, including Lewis and Clark's journal. A field leader holds a discussion about how these nature journals documented bison history and how recording daily observations is important for history. Next, students ask questions about bison characteristics and behavior and set up entries in their nature journal. Students are provided with binoculars to aide in their bison observations. Students head outside and record the number of bison they find, describe their behavior and characteristics, and sketch the bison just like Lewis and Clark and other early settlers did during the 1800s. Lastly, students share their discoveries and discuss the implications of their field work for future generations.

#### 2. Bio Blitz in Prairie and Oak Savanna Habitats:

Objective: Students make predictions and then discover which animals live in prairie and oak savanna habitats.

During an investigation, students ask and answer their own questions about tallgrass prairie and oak savanna habitats. Students then search for plants and animals in the prairie and oak savanna. Using nature journals, they record their observations of each habitat and the birds, plants and animals found there. Lastly, they review the animals and plants they found in each habitat. They draw conclusions as to why certain plants and animals prefer one habitat over the other. Students also use their observations of living and non-living things to write in their own words the definition of an oak savanna and prairie.

\*This lesson will use require the time length of 2 lessons. One group will learn about the prairie for 45 minutes, while the other group learns about the oak savanna for 45 minutes. Then they will switch and reconvene at the end to make a final conclusion about the similarities and differences of oak savanna and prairie habitats.