



*Revised 4/17/20*  
*Neal Smith National Wildlife Refuge*

## **Habitat and Space (modified “hoopin’ it up on the prairie)**

**5th Grade**

**60 Minutes**

**Fall**

### **Summary**

The field leader opens with a discussion about habitat and space. Next, students investigate whether these two things are related. Does the number of plant types we find in the prairie increase as space increases? Students look at test areas and find the smallest area with the most types of plants. Later students share their findings and make suggestions about how they would change or improve their investigation for next time.

### **Next Generation Science and Iowa Core Standards**

#### **Next Generation Science**

- **3-5-ETS1-1**
  - Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- **3-5-ETS1-2**
  - Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
- **3-5-ETS1-3**
  - Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.



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## **Literacy**

### **Speaking and Listening**

- **SL.5.1**
  - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.5.4**
  - Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

### **Materials and Resources**

- Blank paper or nature journals
- Pencils & Colored pencils
- Clip boards
- Field Tools – tape measure, ruler, flags.
- Beginning field guides or ID sheets for prairie plants

### **Presentation**

Explain to students that today they are going to be studying prairie habitat. Write the word “habitat” on the board. Ask a student volunteer to explain what the word habitat means. Discuss examples of plants and animals students anticipate finding in prairie habitat. A grasshopper and bison might eat, drink and sleep in the prairie, but what habitat need is different? Space! Today, we will examine how habitat and the size of space are related.

### **Directions**

1. Tell the students that today they will explore a small portion of habitat. Before they can go outside to explore prairie habitats, they must define what "space" means. Write it on the board and guide students as they come up



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with a definition. Today, we are investigating the question: how does space affect the types of plants we find? Guide students toward forming hypotheses or educated guesses. Record questions on the white board.

2. Explain that soon the class will be splitting into groups and heading outside to test their hypotheses. Groups will be investigating either 1' x 1' or 10' x 10' test plots, and recording the number of species at. Afterward, we will compare our observations and share our discoveries.
3. Help student prepare their journal entries by modeling on the board. **See example on final page.** Each student should make a hypothesis they would like to answer during this investigation. This hypothesis should be written in their nature journals so that students will remember what they are investigating while they are outside. Ask students what they think will be the most important observations to record while outside.
4. Tell students that they are now almost ready to go outside to explore. Put students into small groups, and put an adult with each group if possible. When the class gets outside, each group will have a flagged area of the prairie to study. They will search inside the area, recording how many plant species they find in each. While journaling, students should try to be quiet, so that each naturalist can think about their questions and concentrate on their observations. However, the adult leaders are welcome to ask their fellow naturalists questions or help the students identify plants. If students are not sure if a plant is a different species, they can use their best guess.
5. Distribute one backpack with materials to each group. Have all the groups form a single file line to get ready to head outside. Make sure that the students have all their materials. Remind students that naturalists are happy outside, explorers, adventurers, respectful, prepared, responsible and quiet. They ask questions, use words, numbers and pictures, and share their discoveries.
6. When outside, provide them with boundaries. While the students are journaling, rotate among groups. Ask students questions like: How many types of plants have they found? What makes working in the prairie difficult? Have they found any signs of animal life? Why or why not?



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7. After about 20 minutes, ask students to line up to head back inside. While students are walking to go back inside, they should think about the discoveries they made and get ready to share them with the other naturalists.
  
8. Have students record in their journals what the class found. Be sure to ask students how they came to their conclusions or what evidence they collected that supports their answers. Ask students how they might change or improve their investigation next time.



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## Resources

### Journal Prompt

Ask the students to consider the question posed at the beginning of the activity and their hypotheses. Ask each group to share which plot had the most plant species. Did we all get the same information? Why or why not? Why might this information be useful to scientists studying an animal?

### Journal Example

<b>Habitat and Space</b> <small>Name, Date, Location, Weather, Time</small>	
I think _____ square feet will be the space with the most plant species.	
Space Size	# Plant Species
1 ft x 1 ft = _____ square feet	
10 ft x 10 ft = _____ square feet	