

**LESSON: Discovering Diversity****GRADE: 5th****TIME: 45 min.****SUMMARY:**

During this investigation, students conduct small transects with sweep nets in two pre-selected plant communities. One of the communities is a disturbed habitat and the other is a restored prairie. They observe, collect, and record the number of different types of prairie insects they find at each location. Inside, the field leader uses a Venn diagram to compile a class set of data. One side of the Venn diagram is labeled “Location 1” and the other is labeled “Location 2.” Students share their findings of insect diversity from each location, as the field leader records these into the appropriate category. Students speculate what types of environmental factors or variables contributed to the patterns in the diversity of prairie insects. From their evidence, students work to draw a conclusion about how plant communities might affect prairie insect life.

OBJECTIVES: Iowa Core**Science****Ecosystems: Interactions, Energy, & Dynamics**

- **5-LS2-1** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

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 & RESOURCES:

- Blank paper or nature journals
- Pencils
- White board
- Dry erase marker
- Bug boxes
- Sweep nets
- Insect ID sheets or field guides

PRESENTATION:

Explain to students that today they are going to be doing an investigation about how plant communities might affect prairie insect life. Write the question, “How do plant communities affect prairie insect life?” on the board. Help students deconstruct the questions. Ask them what are plant communities? What is an insect? Ask students to predict- how might the plants found in an area change the insects found there as well? What factors might influence this?

DIRECTIONS:

1. Explain to students the procedure of the investigation. One group will be going to a certain location outside and another group will be going to a different location. Draw a Venn Diagram on the board. Label one side of the Venn Diagram “Location 1” and other side “Location 2”. Each group will have sweep nets to collect insects and each group will be in charge of recording the number of different types of insects they find at their location. Explain that once they come back inside, they will share their data to fill in the Venn Diagram and compare the locations as a class.
2. Hold a discussion about the best way to record the number of insects. From the answers they generate, help students prepare their journal entries by modeling it on the board. Include: name, date, location, weather conditions.



3. Distribute sweep nets and insect ID sheets or field guides to each group before going outside. Make sure that the students have all of 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.
4. When outside, direct adult chaperones where you would like them to go. Provide them with boundaries. While the students are journaling and collecting insects, rotate among groups. Ask students questions and try to help with any problems they have with identifying insects.
5. After about 10 minutes, ask students and adult chaperones to line up to head back inside. Instruct students that while they are walking to go back inside, they should think about the discoveries they made and get ready to share them with the other students/naturalists.
6. Once inside, ask the students to consider the question posed at the beginning of the activity and share what they discovered. Record their answers in the appropriate place on the Venn Diagram.
7. Discuss as a class why students may have found different insects at different locations. What would influence it?
8. Instruct students to write a few sentences about what they discovered. Provide starters for them if they need help “We found different insect diversity at each location because _____ (there were different plants, soil, sunlight, management, public use etc.)”

At the end of the lesson, explain to students that today they did the same investigation that scientists are asking all over the world. And at Neal Smith NWR, we are still investigating the question of how plant communities are affecting insect populations. Maybe they could be the person to continue researching it and find us answers!

REFLECTION/JOURNAL PROMPT:

“We found different insect diversity at each location because _____.”