



Performance Expectations: Next Generation Science Standards:

MS-LS2-2.

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

<http://www.nextgenscience.org/msl2-ecosystems-interactions-energy-dynamics>

Key Understandings

The prairie ecosystem is defined by local abiotic conditions and interactions between the abiotic factors and biotic factors in the area. One example of a keystone species in this ecosystem is the prairie dog. The presence or absence of this species has a profound effect on the system.

Common Student Misconceptions or Challenges

Many students believe that prairie dogs are a pest that only cause damage to the prairie ecosystem. Most students do not understand the positive affects prairie dogs have on the biodiversity of this system.

Lesson 2: Visit Berry Biodiversity Conservation Center:

Take a trip to the Center and investigate the resources available there. Explore what Biodiversity means.

Grade Level: Middle School 6-8

Essential Question:

What can we learn from local institutions about biodiversity?

Objectives:

At the end of this lesson:

- Students will have *visited* and *engaged* in the University of Wyoming’s Berry Biodiversity Conservation Center to explore what biodiversity is, and how scientists study biodiversity.

Assessment opportunities:

At the end of this lesson, you will be able to assess students through:

- Journal entries prompted by:
 - What was the most interesting activity you visited at the Center? Why?
 - What was your least favorite activity? Why?
 - What activity would you like to know more about? Explain why.
 - What do you think biodiversity is now that you have taken this trip? Explain.

Background Information

Contact the University of Wyoming Biodiversity Institute (www.wyomingbiodiversity.org) for information on scheduling a trip to this site. You may have an opportunity to collaborate with staff on a project at your site. Discuss this possibility with staff at the Center.

Choosing a theme and learning goals can be done at this point; this lesson focuses on prairie systems but there are plenty of other options.



Lesson 2: Visit Berry Biodiversity Center:

Explore what Biodiversity means.

Materials:

- Journal or Lab notebook
- Pens

Time Commitment:

1 day plus prep time

Preparation:

- Contact the Biodiversity Center to confirm date and group size.
- Set up collaboration groups for while at the Berry Center
- Introduce Biodiversity before the trip using ideas below.

Directions:

1. Overview: The focus for this trip could be on prairies and prairie dogs—how prairie dogs affect vegetation and the other organisms that rely on prairie dogs for habitat. Students also explore the effects of loss of prairie dog communities, and how that has changed the prairie. Both the vertebrate collection and the stable isotope facility will provide perspectives on how to study historical changes.

2. Before the field trip:

Have students explore what biodiversity means.

Bio/diversity= means different kinds of life

bio=means Life

diversity=means a variety

Explain, if someone says a place has a high biodiversity, that they mean the place has many different kinds of organisms. If a place has a low biodiversity, that means there are relatively few types of living things in the area.

3. Questions:

- What does biodiversity mean?
- Ask students to give an example of a place they think has a high amount of biodiversity? Why?
- A low amount of biodiversity? Why?

4. Journal: see graphic organizer below.

5. At the Berry Center

15 minutes opening activity/introduction

6. Divide the students into 5 groups to rotate through 30-minute activities:

- Wyoming Natural Diversity Database
- Vertebrate Collection
- Stable Isotope Facility
- Berry Prairie (green roof garden)
- Rocky Mountain Herbarium
- Animal Identification (to relate to Lesson 5)

7. 15 minutes closing activity

8. After the Field trip:

Journal reflection piece:

- What was the most interesting activity you visited at the Center? Why?
- What was your least favorite activity? Why?
- What activity would you like to know more about? Explain why.
- What do you think biodiversity is now that you have taken this trip? Explain.

