



# Bison Banquet: Pre-Visit Lesson

## Food Webs, Grades 3-4

### Objective:

Students will be able to trace prairie food chains and illustrate a prairie food web.

### South Dakota Life Science Standards:

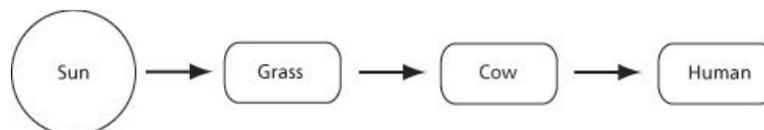
3.L.3.1, 3.L.3.2, 4.L.3.1

### Materials:

- Student worksheets and pencils
- Classroom whiteboard

### Procedure:

1. Tell the class that a park ranger from Badlands National Park will be visiting the classroom this week. Describe where Badlands National Park is. Show a map or tell the students how long it would take to drive to the Badlands.
2. Explain that Badlands National Park is a special place. One reason Badlands is special is that it protects one of the largest remaining mixed-grass prairie ecosystems remaining in the United States. What is a prairie? (North American grassland, usually flat to gently rolling and with few trees.) What living things do we find in the prairie habitat in Badlands National Park? (Some of the many possible answers are: bison, mule deer, prairie dogs, coyotes, swift fox, rabbits, eagles, hawks, snakes, lizards, grasses, and wildflowers.)
3. Discuss how all living things need energy. Where does a person's energy come from? (Food.) What about a plant? Does it eat? Where does its energy come from? Illustrate a simple food chain on the board, drawing arrows to show the direction of energy transfer:



4. Have students brainstorm one or more examples of a prairie food chain featuring animals that live in the Badlands, illustrating the food chain(s) on the board.
5. Introduce the idea of food webs. A food chain shows one specific route that energy can take through an ecosystem, like one path you could walk to get from your home to school. A food web is like a map of the neighborhood that shows all the possible ways you could get from home to school: it shows how all the different species in an area can interact with each other to meet their energy needs. Most species don't get their energy by eating just one thing. For example, a coyote may eat many different small mammals, insects, carrion (dead meat), and plant matter.

6. Hand out the Prairie Food Web worksheet. Have students draw arrows between different members of the food web to show where the different members of the prairie food web get their energy. Students may also draw in one or two additional plants or animals that live in the Badlands and fit them into the food web.
7. Discuss what happens if part of the food web is disturbed. What if there is a bad drought? What if a species goes extinct? Can people have an effect on the food web?
8. Tell the class that the park ranger who visits the class will talk about historic uses of the bison by Native Americans. People are part of the food web, too!

#### Other Resources:

Badlands National Park Website

<http://www.nps.gov/badl>

The following resources are available through Badlands National History Association (BNHA), a not-for-profit organization established to support education and research efforts at Badlands National Park. [badlandsnha.org](http://badlandsnha.org)

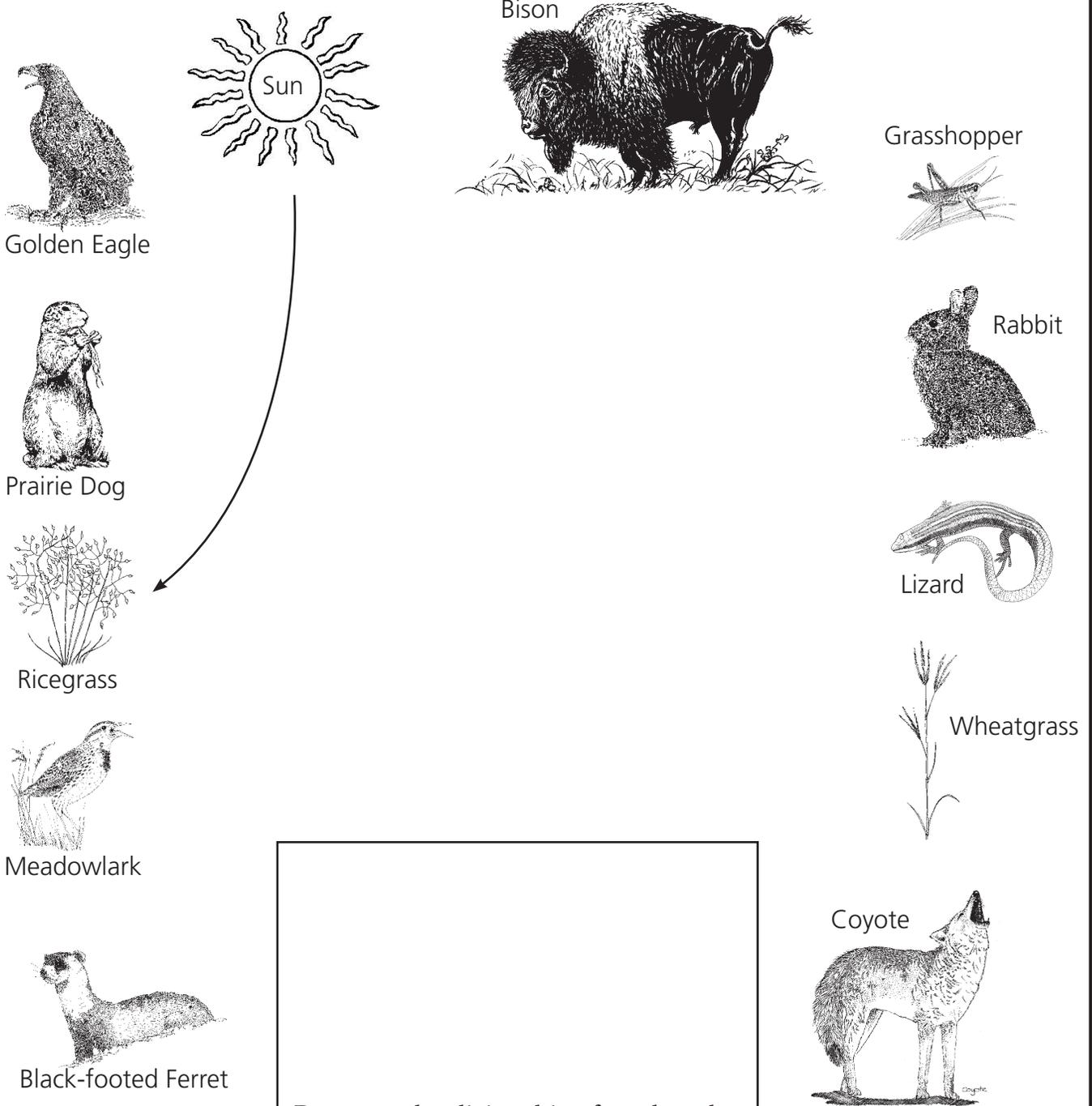
- *America's Prairie and Grasslands* by Marianne D. Wallace
- Local Tracks of North America "Quick Guide"
- *Golden Guide: Mammals*
- *Badlands Suite: Land of Stone and Light, From Field to Lab, Multiple Perspectives* DVD

Teachers participating in a ranger-led Badlands National Park Education Outreach Program receive a 15% discount on purchases from BNHA. Discount is valid from the time a program is scheduled to one month after the program. Please provide name, school, and discount code **BIYC Education** when you place your order at [badlandsnha.org](http://badlandsnha.org).

# Prairie Food Web

Name: \_\_\_\_\_

Directions: A food web shows how energy is transferred in the environment. Energy is transferred from the sun to plants, then to *herbivores* (plant eaters), then to *carnivores* (meat eaters). Draw an arrow from each picture to another to show where the energy goes. Your food web should have at least fifteen arrows.



Draw another living thing found on the prairie, and fit it into the food web, too!

# Prairie Food Web

## Answer Key

The most common energy transfers in the Prairie Food Web are shown as arrows:

from sun to wheatgrass  
from sun to ricegrass  
from ricegrass to bison  
from ricegrass to prairie dog  
from ricegrass to grasshopper  
from ricegrass to rabbit  
from wheatgrass to bison  
from wheatgrass to prairie dog  
from wheatgrass to grasshopper  
from wheatgrass to rabbit  
from bison to coyote  
from prairie dog to coyote  
from prairie dog to golden eagle  
from prairie dog to black-footed ferret  
from grasshopper to meadowlark  
from grasshopper to lizard  
from rabbit to golden eagle  
from rabbit to coyote  
from lizard to golden eagle  
from black-footed ferret to coyote

Other possible (though less common) energy transfers could be drawn:

from black-footed ferret to golden eagle  
from lizard to coyote  
from grasshopper to coyote  
from meadowlark to eagle  
from rice grass to meadowlark  
from wheatgrass to meadowlark

... This means, for example, that meadowlarks sometimes eat seeds, but that most of their diet comes from insects and caterpillars.