



#9703

GRASSLAND BIOMES: ESSENTIAL AND ENDANGERED

RAINBOW EDUCATIONAL MEDIA, 1998

Grade Levels: 4-8

25 minutes

DESCRIPTION

Steppes, pampas, savannahs, prairies--all are names for the grasslands that are found on most continents. Uses the American prairie to highlight characteristics of grasslands, different kinds of grasses, and examples of plant and animal life. Notes humans' impact on this biome.

ACADEMIC STANDARDS

Subject Area: Science – Life Sciences

- ★ Standard: Understands relationships among organisms and their physical environment
 - Benchmark: Knows that all individuals of a species that exist together at a given place and time make up a population, and all populations living together and the physical factors with which they interact compose an ecosystem (See Instructional Goal #1, 2, and 3.)
 - Benchmark: Knows how energy is transferred through food webs in an ecosystem (e.g., energy enters ecosystems as sunlight, and green plants transfer this energy into chemical energy through photosynthesis; this chemical energy is passed from organism to organism; animals get energy from oxidizing their food, releasing some of this energy as heat) (See Instructional Goal #5.)
 - Benchmark: Knows ways in which humans can alter the equilibrium of ecosystems, causing potentially irreversible effects (e.g., human population growth, technology, and consumption, human destruction of habitats through direct harvesting, pollution, and atmospheric changes) (See Instructional Goal #6.)

INSTRUCTIONAL GOALS

1. To define the characteristics of grasslands including dominant vegetation and location.
2. To compare the major types of North American grasslands: tallgrass prairies, mixedgrass prairies, and shortgrass prairies.
3. To give examples of animal and plant life in grasslands.
4. To describe different plant and animal adaptations that help them survive in grassland environments.
5. To describe how energy flows through grassland communities.
6. To describe the human impact on grasslands, particularly the effects of agriculture.

VOCABULARY

1. adaptation
2. big bluestem
3. biome
4. blue sage
5. buffalo
6. buffalo grass
7. burrowing owl
8. cud
9. dotted gayfeather
10. drought
11. dust bowl
12. erosion
13. forbs
14. foxtail
15. Homestead Act
16. Indian grass
17. little bluestem
18. mixed grass prairie
19. pampas
20. photosynthesis
21. prairie
22. prairie dog
23. prickly poppy
24. pronghorn
25. ruminant
26. savanna
27. short grass prairie
28. sod
29. soddy
30. steppe
31. switch grass
32. tall grass prairie
33. tall thistle



BEFORE SHOWING

1. Obtain a map of North America and locate grassland biomes.
2. Obtain samples of different kinds of grasses from a local plant store. Write descriptions of each kind. Compare sturdiness, color, height, and conditions for growing.

DURING SHOWING

1. View the video more than once, with one showing uninterrupted.
2. Point out the differences of the three main types of prairies as they are shown.
3. Pause at the section showing the diagram of the root system of grasses. Discuss how this is different from most other plants.
4. Pause at the section explaining how buffalo and pronghorn are able to digest grass. Explain how the multi-chambered stomachs of ruminants allow them to regurgitate and chew food again.
5. Pause at the photographs of the pioneers. Discuss their physical characteristics, clothing, and hairstyles.

AFTER SHOWING

► Discussion Items and Questions

1. What is a biome? What are different kinds of biomes?
2. What kind of climate characterizes grasslands?
3. What are grasslands called in Africa? In South American? In Europe and Asia? In North America?
4. What are the three major types of grasslands in North America? How does the climate differ among the major types of prairies?
5. What are some reasons why grass is so durable?



6. In what way do fires play an important role in the ecology of grasslands?
7. What other plants besides grasses grow on the prairie?
8. How does energy flow through a grassland?
9. How are buffalo and pronghorn able to digest grass?
10. Which animal depends on speed for safety and is able to run up to 97 kilometers per hour?

11. Due to the scarcity of trees, where do most grassland birds nest?
12. Where does the burrowing owl hide when it senses danger?
13. How many buffalo grazed on the grass of the prairies in the mid-1800s? For what purposes did the Native Americans hunt buffalo? How many buffalo remained on the grasslands by 1900?
14. Why didn't the first pioneers settle on the prairies on their way to California and Oregon?
15. How did the development of the steel plow have an impact on the prairies of North America? Who is credited for developing the steel plow?
16. What crop replaced the grasses of the tallgrass prairie?
17. Which grass grows well in the drier conditions of the mixedgrass prairie?
18. Why couldn't the early settlers build their houses out of wood? What kind of houses did they build instead?
19. What was used to fuel the fires?
20. What were the provisions of the Homestead Act of 1862?
21. How many acres of prairie were turned into farmland between 1860 and 1900? If the grassland is not suitable for growing crops, what is it used for?
22. The prairies have become the nation's breadbasket. What does this mean?
23. What is the dust bowl?
24. What are the possible effects of overgrazing by cattle?
25. In what ways are some of the natural grasslands being protected?



► Applications and Activities

1. Visit a grassland park or wildlife refuge. Observe the grasslands at different times of the year and document what is seen with photographs or drawings.
2. Establish a grassland research and study area by planting grasses and forbs. Contact the national Wildflower Research Center for more information.
3. Draw a map of the North American prairies that shows the locations of the shortgrass, mixedgrass, and tallgrass prairies. Illustrate the maps with examples of the plants and animals found in each type of grassland.
4. Research and report on the causes and consequences of the dust bowls of the 1930s.
5. Research and report on the settlement of the prairies.
 - a. Choose a particular area such as Kansas, Illinois, South Dakota, or Wyoming.
 - b. Note any hardships the early settlers faced, what kinds of crops they planted, and the effects of their settlement on the ecology of the grassland.

6. Research and report on a tribe of Native Americans that lived in the plains. Possible examples include the Comanche, the Blackfeet, and the Sioux.
 - a. Include information about how these people hunted and how they provided shelter.
 - b. Document what happened to the tribe and whether any members still live on the plains.
7. Research and report on a prairie animal and how it has adapted to its environment. Note what the animal eats and how it protects itself against predators. Present this information in a slide show.
8. Draw a prairie food chain showing how energy flows from the sun to plants and from plants to animals.
9. Design a poster on the grassland biome. Include information such as climate, animals and plants that live there, and characteristics unique to that biome.
10. Research and make a list of movies about the pioneers traveling west to Oregon and California. View one and compare the scenery with that shown in the video.

RELATED RESOURCES

- [Grasslands #8740](#)
- [Habitats #8747](#)
- [River Biomes: Essential and Endangered #9704](#)
- [Wetland Biomes: Essential and Endangered #9706](#)



World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and "kid safe" sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

Blue Planet Biomes

- **GRASSLANDS**

<http://www.blueplanetbiomes.org/grasslands.htm>

Includes photographs and detailed information about different types of grassland and their locations, climates, animals, and plants.



- **THE GRASSLAND BIOME**

<http://oncampus.richmond.edu/academics/as/education/projects/webunits/biomes/grass.html>

Contains a map and information about the grasslands. Includes links to other Web sites.

- **GRASSLAND BIOME LINKS**

http://www.roundrockisd.org/wellsbranch/KidLinks/biomes/grasslands_biome_links.htm

Contains links for additional information on certain grasslands.