

#10408 ECOSYSTEMS AND BIOMES



BIG KIDS PRODUCTIONS, INC., 2001
GRADE LEVEL: 4–6
17 MINUTES
1 INSTRUCTIONAL GRAPHIC INCLUDED

DESCRIPTION

What is an ecosystem? A biome? Where are they located? Briefly covers the seven major biomes around the globe. Denotes their main characteristics, climates, typical plants and animals, and location on a world map. Shows how to create a mini-ecosystem by making a terrarium.

ACADEMIC STANDARDS

Subject Area: Science

- 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 GOALS 1 and 2.)
 - Benchmark: Knows factors that affect the number and types of organisms an ecosystem can support (e.g., available resources; abiotic factors such as quantity of light and water, range of temperatures, and soil composition; disease; competition from other organisms within the ecosystem; predation). (See INSTRUCTIONAL GOALS 3.)

INSTRUCTIONAL GOALS

1. To define ecosystem.
2. To list and locate seven major biomes of Earth.
3. To describe the physical characteristics of each biome.

VOCABULARY

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|--------------|---------------|---------------|
| 1. biome | 5. permafrost | 9. symbiosis |
| 2. ecosystem | 6. prairie | 10. temperate |
| 3. fertile | 7. scarce | 11. terrarium |
| 4. nutrient | 8. subsoil | 12. tropical |

BEFORE SHOWING

1. Display pictures of people living in different parts of the world.
 - a. What clothing do they wear?
 - b. What animals are likely to live in their area?
 - c. What kind of crops do they grow?
 - d. Do they have four seasons?
 - e. What factors determine how a person lives in a certain habitat?
2. This program covers seven major biomes found on Earth. Discuss the use of "seven" in other lists:
 - a. Days of the week.
 - b. Wonders of the world.
 - c. Continents of the world.
 - d. Dwarfs (Snow White).



DURING SHOWING

1. View the media more than once, with one showing uninterrupted.
2. Pause at the scenes showing the definitions of ecosystem and biome.
 - a. Rewrite the definitions in other ways.
 - b. Express each definition in ASL (American Sign Language).
3. Pause after each biome is described and summarize the physical characteristics of each.

AFTER SHOWING

Discussion Items and Questions

1. What is *symbiosis*, and what is its role in an ecosystem?
2. What are the seven major biomes found on Earth?
3. What is the temperature range in the Arctic tundra?
4. What is *permafrost*?
5. How much rain does the Arctic tundra get annually?
6. What attracts birds to the tundra in the summer?
7. What animals live in the tundra?
8. What kinds of plants survive in the tundra?
9. Where is the coniferous forest biome found?
10. What kinds of plants and animals are found here?
11. Why isn't the soil in the coniferous forest fertile?
12. What is the temperature range and the average yearly rainfall of these forests?
13. Why is the soil fertile in the deciduous forest biome?
14. What kinds of animals and plants are habitats of this biome?
15. Where are deciduous forests found?



C a p t i o n e d M e d i a P r o g r a m





16. What is the world's largest desert and where is it found?
17. What is the temperature range in this desert?
18. What kind of climate does the Gobi Desert have?
19. What kinds of plants and animals are found in the desert biome?
20. Which continent does not have a desert biome?
21. What is the name of a hot tropical grassland located in Africa?
22. What kinds of animals live in this kind of grassland?
23. What kind of climate do temperate grasslands have?
24. What is another name for the grassland in North America?
25. What two basic regions can the aquatic biome be separated into?
26. What kinds of bodies of water are included in the marine regions?
27. What kinds of animals and plants are found in the marine regions?
28. What kinds of bodies of water are included in the freshwater regions?
29. What kinds of animals and plants are found here?
30. What are two types of rain forests?
31. Where are *tropical* rain forests found, and what is their average annual rainfall?
32. Where are *temperate* rain forests found, and what is their average annual rainfall?
33. How can people help save rainforests?



Applications and Activities

1. Complete a worksheet about the seven biomes. (See INSTRUCTIONAL GRAPHIC.)
2. Fill a jar with pond water and let it sit for a few days.
 - a. Put a drop of the water on a slide and view it under a microscope.
 - b. Illustrate and write a paragraph describing what is seen.
 - c. How does this qualify as an ecosystem?
3. Develop a math activity to convert the metric units mention in the video to U.S. customary units.
 - a. Use conversion formulas.
 - b. Use online converters.
4. Obtain a large map of the world. Color-code the areas to show the locations of various biomes.
5. Research to find how much of Earth each biome covers. Report the results in a bar graph or pie chart.
6. Compile the information about rainfall in the various biomes and make a bar graph.
7. Work in pairs and research an assigned biome. Prepare a trifold display or a slide show presentation to share the information with the class.
8. Make a mobile of a specific biome.
 - a. Cut out pictures of animals and plants living in that biome.

C a p t i o n e d M e d i a P r o g r a m

- b. Use a hanger covered with construction paper and attach the pictures to the hanger with string.
 9. Create a 3-D model of a biome in a box that is larger than a shoebox.
 - a. Paint the inside walls of the box to match the environment of the biome.
 - b. Use appropriate materials to represent the plants, animals, and terrain.
 - c. On one side of the box tape a written description of the characteristics of the biome.
 - d. On the other side tape a world map showing the locations of this biome.
 10. Choose an animal that lives in a certain biome.
 - a. Write a life history of that animal from birth to death.
 - b. Describe that animal's interactions with the environmental factors of that biome.
 11. Design a brochure for a trip to a certain biome.
 - a. Include information such as temperature ranges, rainfall averages, and animals and plants that live there.
 - b. Include a "what to bring" list (e.g., clothing, survival kit, water canteen, etc.).
 12. Using ASL, reenact the demonstration of how to set up a terrarium. Videotape the activity and show it to younger students.
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INSTRUCTIONAL GRAPHIC

- SEVEN MAJOR BIOMES OF THE EARTH WORKSHEET

RELATED RESOURCES

Captioned Media Program

- [*The Biosphere #9978*](#)
- [*Communities of Living Things #2460*](#)
- [*Ecosystem Dynamics #9975*](#)
- [*Exploring the Diversity of Life #3606*](#)
- [*Grassland Biomes: Essential and Endangered #9703*](#)
- [*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.

• BIOMES--HABITATS

<http://www.allaboutnature.com/biomes/>

Contains information about each biome. Includes a printable biomes calendar, an outline map of biomes, charts, and animal printouts.

• WORLD BIOMES

<http://www.blueplanetbiomes.org>

Includes a color-coded map of the location of biomes in the world.

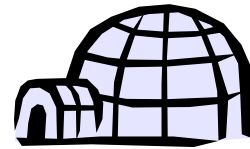
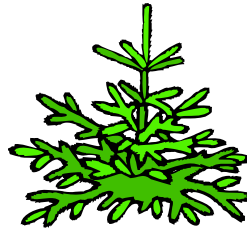
• BIOMES

http://cybersleuth-kids.com/sleuth/Science/Earth_Science/Biomes/

Contains links to informational sites on the seven biomes.

SEVEN MAJOR BIOMES OF THE EARTH WORKSHEET

Directions: Write the correct word in the blank.



tundra

coniferous forest

deciduous forest

grassland

aquatic biome

desert

rainforest

1. Trees that change color in the autumn are found here.
2. Buffalo and prairie dogs are found here.
3. This biome covers 75 percent of the earth's surface.
4. This biome has cone-bearing trees with needles.
5. This biome has less than 25 cm of rain annually.
6. Animals such as the moose, rabbit, and owl live here.
7. The subsoil in this biome remains frozen all the time.
8. This biome gets up to 400 cm of rain a year.
9. The trees here are very tall, dense, and green.
10. Animals with thick fur live here.
11. The soil in this biome is usually very fertile.
12. The Gobi in northern China is an example of this biome.
13. In the United States, this biome is referred to as "the bread basket of America."
14. The climate of this biome can be hot and dry or cold and dry.
15. The climate definitely has four seasons.
