3.1.1 The Biome You Call Home

Overview

Have you been fortunate enough to travel to a place other than your own community? Did you notice that it looked very much the same as your hometown, or very different? It all depends on whether or not you traveled to a similar or different **biome**. If you stayed in the same latitude, even if you traveled hundreds of miles, you might have been surprised to see some of the same plants and animals as those around your home. But if you traveled up in elevation, drastically changed your latitude, or visited a new continent, you might have encountered very foreign species of plants and animals. **Biomes** are distinct communities of plants and animals that live together under the same environmental conditions. Similar conditions can be found in many places across Earth's surface, so biomes are not restricted by country or continent (political) boundaries.

Learning Objectives

- Biomes, particularly terrestrial ones, often are labeled using the dominant plants that grow there.
- The pattern of plant and animal distribution is closely tied to temperature and precipitation patterns.

Student Activity: The Biome You Call Home

Materials

Access to the Internet
2 sheets of graph paper
Colored pencils

Advance Preparation

Study Unit 3: Ecosystems within the Ocean, Chapter 1: Life in the Ocean, to learn about the ocean biome.

Explore some alternative presentation tools, such as Prezi (prezi.com), Glogster (glogster.com), or Voki (voki.com).

Process and Procedures

1. Even if you live in a big city, your region is part of a natural biome. With your class, identify the biome in which your home is located. Discuss how it differs from nearby biomes of a different type.

2. Using the Internet, conduct research on your biome. Identify the dominant plants and animals. Are these biotic factors familiar to you?

3. Find average monthly temperature data for your location on Earth. Make a graph of the data using graph paper and colored pencils. Think about the following questions as you design your graph:
    - What information belongs on the x-axis? What part of your investigation into average monthly temperatures did you control?
    - What information belongs on the y-axis? What part of your investigation into average monthly temperatures did you need to look up and/or measure?
    - What labels, units and titles need to be included to complete your graph?

4. Find average monthly precipitation data for your location on Earth. Make a graph of the data like you did in step 3.

5. Write a report (or, alternatively, you could produce a video segment, create a Prezi or Gloster poster, or develop a speaking avatar with Voki) that describes your biome. Connect all the information you collected in steps 2-4 and include the following:
    - What does your biome look like? Describe it.
    - How do the temperature and precipitation in your region affect the types of plants and animals found in your biome? What is the connection? Use your graphs as illustrations for your report.
    - How have humans adapted to living in this environment? What do they need to be concerned about in order to survive?

Assessment

The following is an excerpt from an article that appeared in the Denver Post on August 2, 2008:

Bear thrills at Senior Open

By Tom Kensler
The Denver Post

COLORADO SPRINGS — Well, everybody predicted Broadmoor East would become a bear of a golf course.

But during Friday's second round of the U.S. Senior Open, things got even more hairy than usual. An adult black bear wandered onto the course during the noon hour, crossing several fairways on the back nine before heading for the West Course through a drainage pipe. The animal later found another drainage pipe and left The Broadmoor property.

"I never heard of such a thing," said Fred Funk, who, at 6-under-par 134, takes a two-stroke lead over Eduardo Romero into Saturday's third round after both shot a 1-under 69 on Friday. Funk was on another area of the course and did not see the bear. But word spread quickly.

The bear crossed the forward tee box on No. 14 soon after one of Funk's top challengers, Mark McNulty, hit his drive. Tom Watson heard somebody shout "Bear!" while he was in the middle of a backswing. Bernhard Langer stopped his pre-shot routine and waited until the bear got out of sight. Television golf analyst Dottie Pepper ran the other way on the 13th fairway.

"It would be pretty scary if (the bear) got a little panicky and some spectator or some of the golfers were too close," Funk said. "That wouldn't have been an issue if a caddie had got too close," he added, attempting to add some levity to what could have become a dangerous situation.

Use your knowledge of biomes to describe why the presence of a bear on a golf course in Colorado Springs, Colorado, was not a surprise to people who lived there, even though it made national news.

Expected Outcomes

What's the take-away?

There is a strong relationship between the abiotic factors and the biotic factors in a biome. The living things in a biome are all able to exist under the same environmental conditions. Temperature and precipitation patterns in an area determine the types of plants and animals that are able to grow and thrive there.

What does the student work product look like?

Research Biome

Students will use information gained during individual research to write a report or create a digital presentation that describes their biome. Presentations will include a description of the biome and how humans have adapted to live there. Presentations will also include two student-generated graphs: one for the biome's monthly temperature and one for the biome's monthly precipitation.

Assessment

Individual student responses should demonstrate an awareness that biomes are distinct communities of plants and animals that live together. The golf course is in a biome where bears are more commonplace than they are in other areas of the country. Bears thrive in a place like Colorado because the bear is able to meet its needs. The temperature and precipitation patterns enable plants to grow and animals to thrive that contribute to the survival of the bears by providing food and shelter.