

Lab: Biome Match MAKEUP ASSIGNMENT

Remember: As per GHHS Policy, you have two days for each day absent to make up assignments.

Background:

Biomes are regions with characteristic types of natural, undisturbed ecological communities adapted to the climate of the region. Biomes are sometimes confused with similar ecological concepts, such as habitats and ecosystems. Ecosystems are the interactions between biota, such as plants and animals, within the environment, and many ecosystems can make up a single biome. Nutrient and energy flow also play a critical role in ecosystems. A habitat, on the other hand, is specific to a population or species; it is the area in which that group lives. Meanwhile, biomes describe life on a much larger scale than either habitats or ecosystems.

The term “biome” was first used in 1916 by Frederic E. Clements, an American ecologist, to describe the plants and animals in a given habitat. In 1939, it was further defined by Clements and fellow ecologist Victor Shelford. Over time scientists continued to expand and refine the definition of biome and related concepts in the burgeoning field of ecology, and in 1963, Shelford characterized the following biomes: tundra, coniferous forest, deciduous forest, grassland, and desert. Later, ecologist Arthur Tansley created a separate definition for ecosystems, which was more inclusive of biological processes than the definition of a biome.

What unites all biome definitions is that biomes can be differentiated by the organisms residing there and by the climate, as well as the fact that the organisms within a biome share adaptations for that particular environment. Climate is a major factor in determining types of life that reside in a particular biome, and there are several factors that influence climate, such as latitude, geographic features, and atmospheric processes disseminating heat and moisture.

(National Geographic, 2022)

What We Did in Class:

Students played a game similar to Go Fish where they match biomes to their common characteristics.

Prelab Questions:

1. Define Biome.
2. How is an ecosystem different from a biome?
3. Who first coined the term “biome”?
4. Describe how the biome of a particular region is determined.
5. How does the classification of an aquatic biome differ from that of a terrestrial biome? (not given)

Procedure:

Match the appropriate characteristics and organisms below with their respective biome in the table.

Characteristics

- a. *Trees lose leaves in winter, four distinct seasons, high nutrient soils*
- b. *Tall, lush grass, also known as veldt or pampas, deep, high nutrient soils*
- c. *Distinct wet and dry seasons, large herds of herbivores*
- d. *Lentic freshwater, often highly stratified*
- e. *Little rainfall, nutrient poor soil, sparse vegetation*
- f. *Halophytic plants, greatly influenced by tides*
- g. *Very cold, mostly treeless with permafrost*
- h. *Dominated by hardy shrubs, high risk of fire, rocky soil*
- i. *Most biodiverse terrestrial biome, nutrient poor soil, highly stratified*
- j. *Most productive aquatic biome, mix of salt & freshwater*
- k. *Flowing freshwater, often starts in mountains*
- l. *Long, cold winters, nutrient poor soil, dominated by coniferous trees*
- m. *Most biodiverse aquatic biome, many symbiotic relationships*

Typical Organisms

- a. *Painted turtle, leopard frog, carp*
- b. *Kangaroo rat, rattlesnake, scorpion*
- c. *Mangrove tree, raccoon, great blue heron*
- d. *Cheetah, giraffe, ostrich*
- e. *Coyote, mountain lion, roadrunner*
- f. *Blue crab, oyster, flounder*
- g. *Prairie dog, bison, grouse*
- h. *Sea anemone, clownfish, white tip shark*
- i. *Lynx, moose, horned owl*
- j. *Otter, beaver, trout*
- k. *Snowy owl, caribou, arctic fox*
- l. *Toucan, sloth, howler monkey*
- m. *Turkey, squirrel, black bear*

Biome	Characteristics	Organisms
Tiaga (Boreal Forest)		
Temperate Deciduous Forest		
Tropical Rainforest		
Chaparral		
Temperate Grassland		
Savanna		
Desert		
Tundra		
Coral Reef		
Estuary		
Coastal Wetland		
Stream River		
Lake Pond		

PostLab Questions:

- 6. Identify two biomes with nutrient rich soils.
- 7. Discuss the similarities that lead to high biodiversity in Coral Reefs and Tropical Rainforests. (not given)
- 8. Choose one biome and discuss similarities in the organisms found there. Why do these similarities occur?
- 9. Which biome would you most like to visit and why?
- 10. What did you learn in this makeup lab?