Contents

Section 1 | Biomes and Ecosystems

Unit 2 Quiz 1		
2.4	Change and Succession in Ecosystems 12	
2.3	Biomes, continued	
2.2	Biomes	
2.1	Introduction to Biomes and Ecosystems1	

Section 2 | Communities and Populations

2.5	Community Interactions 17	
2.6	Symbiosis 21	
2.7	Species Diversity	
2.8	Population Requirements, Density, and Dispersion	
2.9	Population Change	
Unit 2 Quiz 2		
	Lab 2A: Conducting a Mark-Recapture Survey	

Section 3 | Human Interactions With the Biosphere

2.10 The Importance of Biodiversity	41	
2.11 Threats to Biodiversity	46	
2.12 Stewardship of Biodiversity	50	
Unit 2 Review	53	
LightUnit Test		
Lab 2B: Ecosystem in a Bottle (Part 2)	57	

Section 1 | Biomes and Ecosystems

2.1 Introduction to Biomes and Ecosystems



Exercises

Circle the letter of the best answer.

- 1. All the squirrels living in a certain area would compose which ecology level?
 - **a.** community
 - b. ecosystem
 - c. individual
 - d. population
- 2. A prairie in Manitoba would most closely match which level of ecology?
 - a. biome
 - **b.** biosphere
 - **c.** community
 - **d.** ecosystem
- 3. Which level of ecology is broader than a biome?
 - **a.** biosphere
 - b. ecosystem
 - **c.** individual
 - d. population
- 4. What is a thermal optimum?
 - a. the highest body temperature an organism can survive
 - b. the highest environmental temperature an organism can survive
 - c. the body temperature range in which an organism's cells function best
 - d. the environmental temperature range in which an organism functions best
- 5. Which factor directly affects metabolism?
 - a. diet
 - b. precipitation
 - c. temperature
 - d. nutrient availability

Circle *T* **if the statement is true or** *F* **if it is false.**

- **6. T F** The earth consists of only one biosphere.
- 7. T F The nonliving components of an ecosystem are called its abiotic factors.
- 8. T F Abiotic factors directly affect biotic factors.
- 9. T F Living organisms are only affected by abiotic factors.

Match each example with the level of ecology it describes.

10	all the plants and animals in the Grand Canyon	a. biome
11	a single western diamondback rattlesnake	b. biosphere
12	the eastern slope of the Colorado Rockies	c. community
13	all the American alligators in the Everglades	d. ecosystem
14	Planet Earth	e. individual
15	the tropical savannas of South America, Africa, and Asia	f. population

Write A for abiotic factor or B for biotic factor.

16. wind	19. soil composition
17. water pH	20 decomposers
18. humans	21 predators

Complete these exercises.

- 22. List the levels of ecology from broadest to most specific.
- 23. How can natural selection improve the fitness of a population over time?

24. How can opposite sides of the same mountain range have different climates (which creates different ecosystems)?

$\stackrel{\Lambda}{\searrow}$ Complete this exercise.

25. Write a paragraph about an animal of your choice, explaining how it responds to two biotic and two abiotic factors that affect its life in its native biome. You may use additional resources for research if necessary.



2.2

Read 2.2 (pp. 71-78).

Exercises

Circle the letter of the best answer.

- 1. What characteristic is most important in defining the area of a biome?
 - a. plants
 - **b.** animals
 - c. abiotic factors
 - d. geographic location
- 2. How can tundra plants complete their life cycle in a short time?
 - a. They grow very quickly.
 - **b.** They skip the reproduction phase.
 - c. They only grow to half their normal size.
 - **d.** They photosynthesize nearly all the time during summer.
- 3. Where might you find tundra characteristics outside of the Arctic?
 - a. on mountaintops
 - **b.** in grasslands
 - c. in deserts
 - d. nowhere
- 4. Which biome receives the most precipitation?
 - a. grasslands
 - b. rainforests
 - c. taiga
 - d. tundra
- 5. Which two biomes are most common in the tropics?
 - a. taiga and rainforest
 - b. prairie and savanna
 - c. tundra and rainforest
 - **d.** savanna and rainforest

Circle *T* **if the statement is true or** *F* **if it is false.**

- 6. T F The tundra is boggy during the summer.
- **7. T F** Many Arctic animals change hair color to blend in with their surroundings.
- 8. T F Grasslands can be found on every continent.

- **9. T F** Grasses are the primary vegetation in grasslands because these ecosystems are too windy for trees to grow well.
- **10. T F** Grasslands are mostly treeless because they have too little moisture and too many fires to support most trees.
- **11. T F** There are few natural grassland areas left in North America.
- **12. T F** The canopy is the highest layer in a tropical rainforest.

Write *F* for *forests*, *G* for *grasslands*, or *T* for *tundra*.

13. trees	18 evergreen
14 permafrost	19. polar bear
15. deciduous	20. antelope
16. savanna	21. boa constrictor
17. prairie	22. lemming

Complete these exercises.

- 23. What characteristics of Arctic animals allow them to live in the tundra year-round?
- 24. What are three ways in which temperate grasslands differ from savannas?

- **25.** How has human civilization impacted grasslands?
- 26. What are four benefits humans receive from forests?
- **27.** List the three main forest types and briefly describe the abiotic factors and plant communities that distinguish each type.