

## Ecosystems

1. Define ecosystem: \_\_\_\_\_  
\_\_\_\_\_

2. Identify each of the following as **Abiotic** or **Biotic**.

\_\_\_\_\_ Nonliving factors

\_\_\_\_\_ Living factors

\_\_\_\_\_ Light intensity

\_\_\_\_\_ Temperature range

\_\_\_\_\_ Amount of rainfall

\_\_\_\_\_ Soil type

\_\_\_\_\_ pH

\_\_\_\_\_ Mineral supply

\_\_\_\_\_ Supply of gases (O<sub>2</sub>, CO<sub>2</sub>)

\_\_\_\_\_ Predators

\_\_\_\_\_ Saprophytes, herbivores

\_\_\_\_\_ Parasites

3. Why is the transfer of energy in an ecosystem referred to as energy flow, not energy cycling?

\_\_\_\_\_  
\_\_\_\_\_

4. What is the source of energy for each of the following?

Primary producer	
Primary consumer	
Secondary consumer	
Tertiary consumer	
Detritivores (decomposers)	



5. Describe the efficiency of energy transfer between trophic levels.

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6. How does the amount of energy available at each trophic level affect the structure of the ecosystem?

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7. **Carbon Cycle:** What is the role of each of the following in the carbon cycle?

<b>Photosynthesis</b>	
<b>Respiration</b>	
<b>Eating</b>	
<b>Burning</b>	

8. **Nitrogen Cycle:** Match the description with the correct term.

- A. Ammonification  
B. Assimilation  
C. Denitrification  
D. Nitrification  
E. Nitrogen-fixation

\_\_\_\_\_ Soil bacteria or bacterial in root nodules convert nitrogen gas ( $N_2$ ) into usual forms

\_\_\_\_\_ Bacteria convert ammonium ( $NH_4^+$ ) into nitrites ( $NO_2^-$ ) and nitrates ( $NO_3^-$ )

\_\_\_\_\_ Decomposers and some nitrogen-fixing bacteria produce ammonium ( $NH_4^+$ )

\_\_\_\_\_ Plants absorb nitrates from the soil and animals eat plants or other animals to obtain nitrogen-containing compounds

\_\_\_\_\_ Bacteria convert nitrates into nitrogen gas



Name:

Date:

Hour:

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AP Biology: Unit 3: Ecology

9. **Phosphorus Cycle:** Answer the following questions.

a. What acts as the reservoirs of phosphorus in the environment?

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b. How do plants obtain (assimilate) phosphorus?

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c. How do animals obtain (assimilate) phosphorus?

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d. What is the role of decomposers in the phosphorus cycle?

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10. Describe what happens during the greenhouse effect.

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11. What are epiphytes?

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In what biome do they live?

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12. Identify the terrestrial biome described in each of the follow.

Biome	Climate	Vegetation
	High temperature Heavy rainfall	Tall trees
	Tropical High temperature Less rainfall than tropical rainforest	Grasslands Scattered trees
	Hot Dry	Cacti Succulents
	Season droughts Occasional fires Less water and lower temperatures than savannas	Grasses
	Warm summers Cold winters Moderate precipitation	Deciduous trees
	Cold winters Heavy snowfall	Cone-bearing trees
	Very cold winters Permafrost High winds, little rainfall	Grasses Sedges

