What Are Biotic and Abiotic Factors in an Ecosystem?

Worksheet

Biotic factors are the living parts of an ecosystem - plants, animals, fungi, bacteria - while abiotic factors are non-living physical and chemical conditions like sunlight, temperature, water, and soil.

Questions

1. Which of these is a biotic factor?

A) Sunlight
B) Bacteria
C) Temperature
D) Soil pH

2. Which of these is an abiotic factor?

A) Fish
B) Trees
C) Rainfall
D) Insects

3. What defines an ecosystem?

A) Only the living organisms in an area
B) Only the physical environment of an area
C) Living organisms interacting with each other and their physical environment
D) A single species living alone

4. If a lake's abiotic oxygen level drops sharply, what is most likely?

A) Nothing changes for fish
B) Fish and other biotic life may struggle to survive
C) The lake becomes more biotic
D) Sunlight increases automatically

5. In a pond ecosystem, classify: fish, water temperature, algae, dissolved oxygen.

6. A drought lowers rainfall in a grassland. Which factor changed, and how might it affect biotic factors?

7. List 3 biotic and 3 abiotic factors you'd find in a desert ecosystem.

8. Define: What is a biotic factor?

9. Define: What is an abiotic factor?

10. Define: Give an example of an abiotic factor in a forest.

Answer Key

1. B) Bacteria - Bacteria are living organisms, making them a biotic factor.

2. C) Rainfall - Rainfall is a non-living physical condition - an abiotic factor.

3. C) Living organisms interacting with each other and their physical environment - An ecosystem includes both the community of organisms and their non-living surroundings.

4. B) Fish and other biotic life may struggle to survive - Abiotic conditions like dissolved oxygen directly affect the survival of biotic organisms.

5. Fish biotic (living organism) Water temperature abiotic (physical condition) Algae biotic (living organism) Dissolved oxygen abiotic (chemical condition)

6. Rainfall is an abiotic factor Less water stresses plants (biotic), which may wilt or die Herbivores that eat those plants (biotic) then have less food, so their populations can decline

7. Biotic: cacti, lizards, scorpions Abiotic: intense sunlight, sandy soil, extreme temperature swings Together these define what can survive in the desert

8. Any living component of an ecosystem, like plants, animals, fungi, or bacteria.

9. Any non-living physical or chemical component, like sunlight, water, or soil.

10. Sunlight, temperature, rainfall, or soil pH.