

Name _____

The Essential Players: Producers, Consumers, and Decomposers

Open-Ended Response Answer Key

1. Producers, consumers, and decomposers are interconnected through various relationships within ecosystems. For example, producers provide energy for consumers through photosynthesis, while decomposers break down dead organic matter, releasing nutrients that are then absorbed by producers.
2. Human activities such as deforestation, pollution, and overfishing can disrupt the populations of producers, consumers, and decomposers in ecosystems, leading to imbalances and loss of biodiversity.
3. If decomposers were removed from an ecosystem, dead organic matter would accumulate without being broken down. This would lead to a depletion of nutrients in the soil, affecting the growth of plants and ultimately impacting the entire food web.
4. Energy flow through trophic levels in ecosystems involves the transfer of energy from one level to another as organisms consume each other for food.

However, energy is lost at each trophic level, resulting in less energy being available to higher trophic levels. This inefficiency limits the number of trophic levels in ecosystems and influences their overall stability.

