

Name _____

Exploring Ecosystems: Nature's Complex Communities

Open-Ended Response Answer Key

1. Example: Abiotic factors like sunlight and soil composition influence the distribution and abundance of biotic factors such as plant and animal species. Conversely, the presence of living organisms can also modify abiotic factors, creating feedback loops that shape ecosystem structure and function.
2. Example: Energy flows through an ecosystem in a unidirectional manner, starting with primary producers like plants that capture sunlight and convert it into chemical energy. Herbivores consume these plants, transferring energy to higher trophic levels through successive levels of consumers, with energy lost as heat at each trophic transfer.
3. Example: Ecological succession refers to the process of gradual change in the species composition and structure of an ecosystem over time. Disturbances like wildfires or human activities can disrupt the existing community, leading to pioneer species colonizing the area and initiating primary succession, or facilitating secondary succession by promoting the growth of new vegetation.
4. Example: Biodiversity refers to the variety of life forms within an ecosystem, including different species, genes, and ecosystems. High biodiversity enhances ecosystem resilience by providing a range of species with different traits and functions, increasing ecosystem stability, and improving its capacity to withstand environmental changes.

