

Name _____

The Kaleidoscope of Life: Understanding Species Diversity

Open-Ended Response Answer Key

1. Each species plays a unique role in ecosystem functioning because they have specific adaptations and ecological niches that allow them to interact with other species and their environment in distinct ways. For example, predators help control prey populations, herbivores graze on plants, and decomposers break down organic matter, cycling nutrients back into the ecosystem.
2. An example of an ecosystem service provided by species diversity is the regulation of climate and weather patterns by forests. Forests help regulate temperature and precipitation by absorbing carbon dioxide, releasing oxygen, and influencing atmospheric circulation patterns, which in turn affects weather patterns and climate stability.
3. Connecting with nature and encountering species diversity is important for human well-being because it fosters a sense of connection and belonging, reduces stress and anxiety, and promotes physical and mental health. Spending time in natural environments provides opportunities for relaxation, recreation, and reflection, which are essential for overall well-being.
4. Individuals and communities can contribute to the preservation and protection of species diversity by supporting conservation efforts, practicing sustainable lifestyles, and advocating for policies that protect natural habitats and wildlife. This can include reducing consumption, recycling and reducing waste, supporting local conservation organizations, and participating in citizen science initiatives to monitor and track biodiversity.

