

Name _____

Thriving in Diverse Environments: How Vascular Plants Adapt

Open-Ended Response Answer Key

1. Water conservation adaptations such as succulent stems and leaves allow desert plants to store water for extended periods, enabling them to survive in arid environments where water is scarce.
2. Forest canopy trees and understory plants have evolved different adaptations to compete for sunlight. Canopy trees have broad leaves and expansive root systems to capture sunlight, while understory plants have specialized photosynthetic structures to thrive in low light conditions.
3. Aquatic plants obtain nutrients through various mechanisms, including specialized root systems, root hairs, and symbiotic relationships with nitrogen-fixing bacteria. These adaptations are essential for supporting aquatic ecosystem productivity and biodiversity.
4. Alpine plants have evolved adaptations such as compact, low-growing forms and specialized structures to cope with extreme environmental conditions in high-altitude environments. While these adaptations enable alpine plants to survive in harsh conditions, they may also limit their growth and reproductive potential compared to plants in more favorable environments.

