

Name _____

Exploring Reproduction in Woody Plants

Open-Ended Response Answer Key

1. Seed reproduction involves the development of seeds from fertilized ovules following pollination and fertilization, while vegetative reproduction generates new plants from existing vegetative structures without the need for seeds. Seed reproduction promotes genetic diversity through recombination, while vegetative reproduction maintains the genetic makeup of the parent plant. Seed reproduction allows for dispersal over long distances, while vegetative reproduction leads to the formation of genetically identical offspring in close proximity to the parent plant.
2. Seed dispersal in woody plants plays a crucial role in colonizing new habitats, avoiding competition with parent plants, and promoting genetic diversity within populations. Different dispersal mechanisms, such as wind, water, animals, or gravity, facilitate the establishment of plants in diverse environments and contribute to ecosystem diversity and resilience.
3. Genetic diversity in woody plant populations increases the likelihood of survival and adaptation to changing environmental conditions. It provides a pool of genetic variation that allows populations to respond to selective pressures, such as disease outbreaks, climate change, and habitat destruction. Higher genetic diversity can enhance ecosystem stability and resilience by ensuring the availability of traits that enable plants to thrive in diverse conditions.
4. Human activities, such as habitat destruction, deforestation, urbanization, and climate change, can impact the reproductive success of woody plants by disrupting seed dispersal mechanisms, reducing habitat availability, and altering environmental conditions. These activities can lead to habitat fragmentation, loss of genetic diversity, and increased vulnerability to pests and diseases, ultimately threatening the long-term survival of woody plant populations.

