

Name _____

Photosynthesis Powerhouses: Where Most of the Magic Happens

Open-Ended Response Answer Key

1. Terrestrial and aquatic environments are interconnected through the global ecosystem, with photosynthesis being a vital link. Terrestrial environments provide essential oxygen and carbon sequestration, while aquatic environments, particularly oceans, contribute to oxygen production and support marine life through photosynthesis.
2. Climate change can affect photosynthesis by altering sunlight availability, increasing temperatures, and affecting water availability. For example, rising temperatures can stress plants, and changing rainfall patterns can impact the distribution of photosynthetic organisms.
3. In a world without photosynthesis, the availability of oxygen and food would significantly decrease, disrupting the balance of life on Earth. Oxygen-dependent organisms would suffer, and the food chain would collapse.
4. The conservation of natural environments where photosynthesis occurs is crucial for maintaining biodiversity, oxygen production, and climate regulation. Individuals and communities can contribute by supporting conservation efforts, reducing their carbon footprint, and promoting sustainable land and water management practices.

