

Name _____

The Carbon Cycle Demystified: A Journey Through its Phases

Open-Ended Response Answer Key

1. Photosynthesis is the process by which plants capture carbon dioxide from the atmosphere and convert it into organic compounds, primarily glucose. This process is crucial because it takes carbon out of the atmosphere and forms the basis of the food web, providing energy and sustenance for all life on Earth.
2. The carbon cycle demonstrates the interconnectedness of Earth's systems by showing how carbon atoms move between the atmosphere, living organisms, soil, and the oceans. It highlights how changes in one part of the cycle can have far-reaching effects on other parts and ultimately impact our climate and environment.
3. The ocean is essential in regulating Earth's climate within the carbon cycle because it absorbs and stores vast amounts of carbon dioxide from the atmosphere. By reducing the levels of carbon dioxide in the air, the ocean helps prevent excessive warming and maintains a stable climate.
4. One specific human activity that contributes to the release of excessive carbon dioxide into the atmosphere is the burning of fossil fuels for energy. This activity leads to higher levels of carbon dioxide in the atmosphere, which, in turn, contributes to global warming, climate change, and related environmental impacts such as rising temperatures and sea-level rise.

