

Name _____

The Marvelous Carbon Cycle: How Earth Recycles Carbon

Open-Ended Response Answer Key

1. The carbon cycle is crucial because it ensures a continuous supply of carbon for plants, animals, and humans. Carbon atoms are constantly on the move, being used by living organisms, stored in various forms, and then released back into the environment. Without the carbon cycle, life as we know it would not be sustainable.
2. One human activity that negatively impacts the carbon cycle is the burning of fossil fuels. When we burn fossil fuels like coal, oil, and natural gas for energy, we release large amounts of carbon dioxide into the atmosphere. This excess carbon dioxide contributes to global warming and climate change, leading to rising temperatures, extreme weather events, and sea-level rise.
3. The carbon cycle demonstrates the interconnectedness of Earth's systems by showing how carbon moves between the atmosphere, land, water, and living organisms. It highlights the way in which processes in one part of the Earth, such as photosynthesis in plants or the absorption of carbon dioxide by the ocean, can affect other parts of the planet and ultimately impact our climate and environment.
4. Decomposers, such as bacteria and fungi, play a crucial role in recycling carbon in the carbon cycle. When they break down dead organisms and organic matter, they release carbon into the soil in the form of organic matter. This carbon can then be used by plants during photosynthesis, completing the cycle and ensuring that carbon is continuously available for living organisms.

