Name _____

Water's Thermal Dance: Specific Heat Capacity and Earth's Temperature Regulation

Open-Ended Response Answer Key

1. In a world with low water specific heat capacity, temperature fluctuations would be extreme, making it challenging for organisms to adapt. Ecosystems would be disrupted, and extreme weather events would be more frequent.
2. (Possible answer) Understanding water's specific heat capacity is crucial in climate science for predicting temperature changes and mitigating the impacts of global warming. It helps develop strategies to combat rising temperatures and their consequences.
3. In a world where water had a much higher specific heat capacity, temperature changes would be even slower. This could lead to extended periods of extreme heat and cold, challenging the adaptability of ecosystems and species.
4. To demonstrate specific heat capacity, you can heat equal masses of different substances, like water and oil, and observe their temperature changes. Water's slower temperature change illustrates its higher specific heat capacity.

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