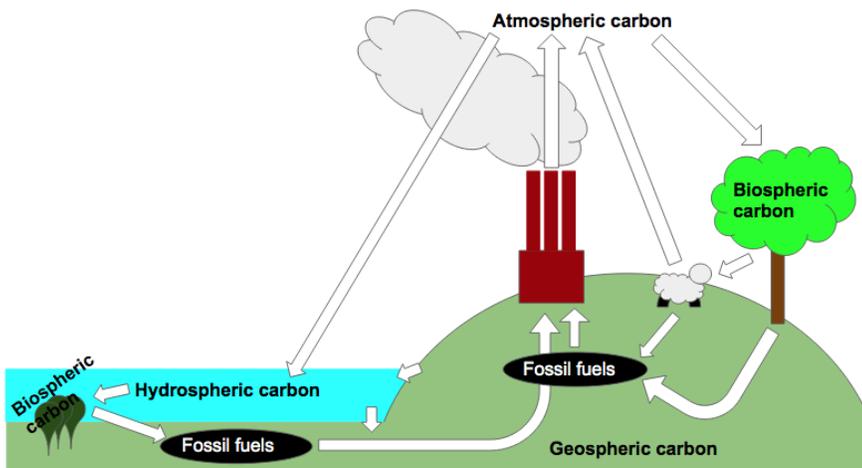


ScienceNews

Visual Answer Key for Teachers: Unbalancing the Carbon Cycle

Carbon cycle question 10: The carbon cycle shows how carbon moves through all four spheres of Earth. Sketch some of the interactions that connect the movement of carbon through the spheres. Describe and/or label the interactions.

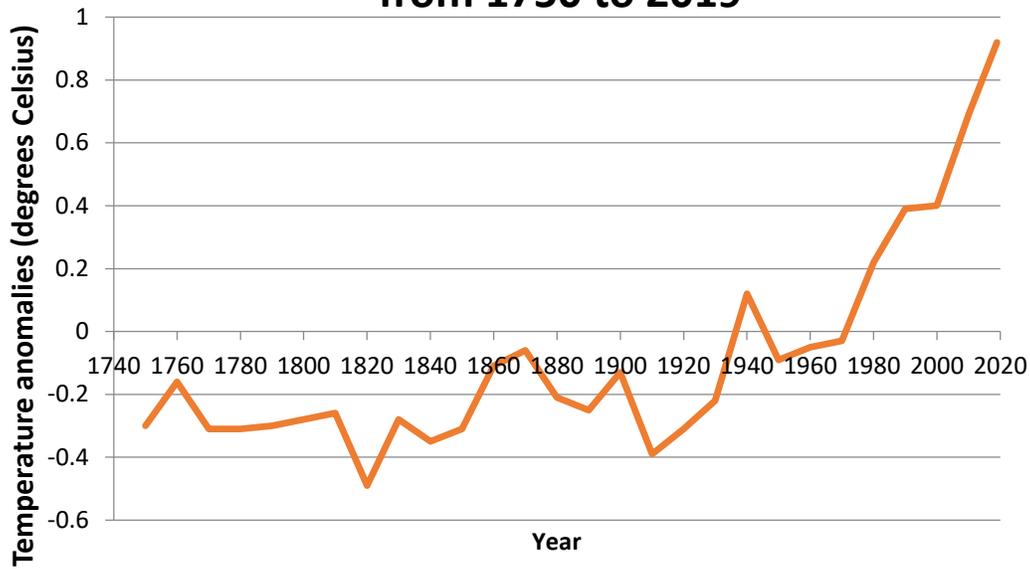
Answers should include a quick sketch that may be similar to the one shown and should include examples of how carbon moves across each of the four spheres.



Animals in the biosphere take in carbon by eating plants and other organisms. When organisms in the biosphere die and their carbon is buried under high pressure, it forms fossil fuels in the geosphere. The carbon in fossil fuels in the geosphere is released to the atmosphere through combustion. Animals in the biosphere exhale carbon dioxide, and it enters the atmosphere. Carbon dioxide in the atmosphere is taken in by plants in the biosphere during photosynthesis, while carbon dioxide in the hydrosphere is taken in by photosynthesizing organisms in the water. Carbon dioxide in the atmosphere is also absorbed by water in the hydrosphere. Carbon in the hydrosphere can form sedimentary rocks in the geosphere, while rocks in the geosphere can be broken down by weathering and have their carbon added to the hydrosphere.

Data analysis and graphing question 20: Graph the data presented in the table. Graph the atmospheric carbon dioxide levels on one graph and the temperature anomalies on another. Refer to your teacher's instructions for where to create your graphs.

Temperature anomalies (degrees Celsius) from 1750 to 2019



Atmospheric carbon dioxide levels (ppm) from 1750 to 2019

