

Carbon's Trip Through Earth's Spheres

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This unit is intended for a tenth-grade Biology course where students study the cycling of carbon and conservation of matter in Earth's systems. The unit has been modified to accommodate remote learning. It includes modeling, simulating, and data analysis as it aligns with the Next Generation Science Standards. Students model the flux of carbon atoms as rearranges into different molecules in Earth's spheres. The analysis questions and classroom discussions are heavily focused on the conservation of matter and human impacts toward climate change. Students are challenged to analyze carbon data and geographic data to develop predictive models for the cycling of carbon. Authentic scenarios about Toronto's tree planting policy and global deforestation, with a focus on the Amazon Rainforest, are the basis for phenomena and assessments. At the completion of this unit, students are able to explain conservation of matter and the cycling of carbon, as it applies to climate change and human impact. Students are asked to model, simulate, analyze, and participate in classroom discussions as major components of this unit.