



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
2021 Volume IV: The Earth's Greenhouse and Global Warming

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## **Budgeting for a Better Tomorrow**

Guide for Curriculum Unit 21.04.02  
by Larissa Giordano

This unit will teach students about Ecosystems. They will begin by analyzing the four spheres: biosphere, hydrosphere, atmosphere, geosphere and how they are interconnected, understanding that one system cannot exist without the other in order to maintain proper functioning within our planet. Students will learn about the various types of ecosystems that exist and how living organisms depend on other living and non-living organisms for survival by examining how the spheres interact and how changes in one, affects another. Students will understand that ecosystems are fueled by the energy from the sun and cycles from which they are powered.

It will focus on what the carbon cycle is and its' influence in our lives. Carbon is essential for all life on Earth as it regulates the Earth's temperature and provides an essential source of the energy to fuel our economy. By gaining a deeper understanding of how carbon moves throughout the spheres, we can better regulate our daily decisions to help sustain our future.

Human activities, however, are altering the carbon cycle. Deforestation or land use can alter the amount of carbon in the atmosphere faster than it can be absorbed. They will dissect human activity and understand how our actions today affect the carbon budget of tomorrow. They will understand that burning fossil fuels and land use greatly affects the amount of carbon in the atmosphere by conducting investigations and researching how to reduce human impact, consequently leading them to develop possible solutions.

(Developed for Science, grade 5; recommended for Science, grades 5 and 8, if lessons are enhanced to higher level)

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