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Curriculum Units by Fellows of the National Initiative
2007 Volume V: Renewable Energy

Petroleum: Our Best Transportation Option?

Guide for Curriculum Unit 07.05.01, published September 2007

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This is a unit designed for a high school environmental technology program. This unit explores the carbon cycle almost in a "cradle to grave" sense, starting with plants fixing carbon using solar radiation during the process of photosynthesis, tracking inputs from anthropogenic sources (most notably transportation), exploring the global fluxes of carbon and cycling into the carbon sinks and quantifying how carbon is sequestered by our oceans and our terrestrial systems. Students research alternatives to current transportation fuels to determine the best options for transportation in order to lower the carbon output of our transportation sector. Students gain field experience when they run biometry measurements on local woodland and then calculate the amount of carbon the woodland can sequester. Students use molecular models to understand hydrocarbons and the chemistry of the products made out of them as well as the process of combustion. Using the new knowledge gained from the unit, the students gain an appreciation for conserving our petroleum resource as feed stock for products instead of burning it all as a fuel.

(Developed for Environmental Landscape Technology, grade 10; recommended for Environmental Science, Agriscience, and Natural Resources, grades 9-12)

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