



Curriculum Units by Fellows of the National Initiative
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It Don't Come Easy: The Promises and Challenges of Biofuel Production

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This curriculum unit is designed to provide engaging lessons in biofuels and biofuel production. Students will start by discovering the levels of carbon dioxide that are created by the combustion of the fossil fuel gasoline, and move on to explore the deficiencies and environmental consequences of using corn as a feedstock for ethanol production. The effects of farming the corn as well as its production will be discussed in class. Students will engage in activities exploring the production of cellulosic ethanol and discuss the advantages of biobutanol over cellulosic ethanol. Emphasis will be placed on the principles of sustainability and environmental unity to teach the students about the promise and possible drawbacks of the use of biofuels as an energy source. Implementation of the lessons will involve hands-on student centered activities in order to engage the students and have them understand the issues at a very high order. Energy will be tracked from photosynthesis through to combustion, and students will gain an understanding of the complexities of energy and carbon dioxide pollution. Student led debates and group discussions will form a large part of my assessment of the success of the curriculum.

(Developed for AP Environmental Science, grades 11-12; recommended for Environmental Science and Chemistry, grades 9-12)

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