

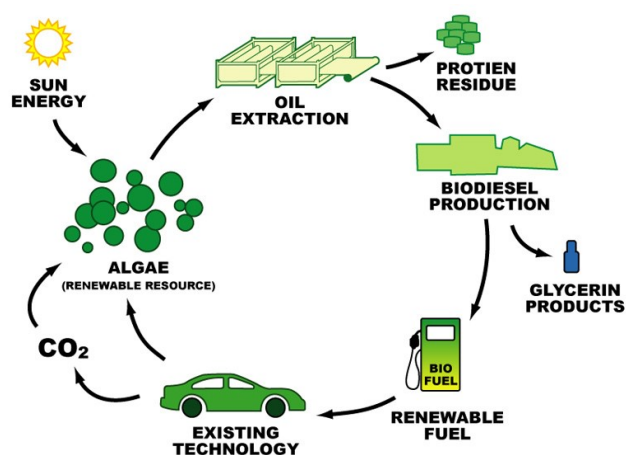
Activity 5 - WE-LAB - Transportation Fuels Debates

Activity Description/Overview

All transportation fuels have economic, environmental, and societal advantages and disadvantages. Many factors such as economic and environmental impacts, as well as societal needs, and personal beliefs go into deciding what transportation fuels are used either personally or for fleet vehicles. In this activity students will investigate the economic and environmental impacts of different transportation fuels, and participate in a debate-style game.

Research

Students should start by gaining an understanding of what transportation fuels are and how it relates to alternative transportation. This activity will focus on: biodiesel, diesel, electricity, ethanol, gasoline, hybrid electric, hydrogen, natural gas, and propane. A great resource for information can be found here: <http://www.need.org/files/curriculum/guides/Transportation%20Fuels%20Infobook%20web.pdf> What are other forms of transportation that do not involve fuels? How is water used in the production and consumption of transportation fuels?



Take Action

- The activity to be completed can be found here: <http://www.need.org/files/curriculum/guides/TransportationFuelsDebate.pdf>

- It provides a teacher guide, the debate game board, transportation fuel debate sheets, and instructions for completing the activity.
- Students will be assigned in groups to represent different transportation fuels and then complete a debate sheet to help them learn about their fuel.
- Students will present the advantages and disadvantages of their fuels to a panel of judges in debate style in order to move up on the game board.
- The activity suggests having two debates, one for personal vehicles and one for fleet vehicles. You are only required to complete one debate, but feel free to have both if you can!
- After the debate be sure to 'Interpret the Debate Results' with the questions on page 6.
- Additionally, have students discuss other modes of alternative transportation that do not involve fuels. How do these compare with the environmental and economic impacts of transportation fuels?
- Go one step further by investigating how water is involved in the processes of transportation fuels. How is water used and what amounts are required to make the fuel? What is better: saving water or avoiding fossil fuel use and emitting CO₂? Students may quickly realize there is not always a clear, perfect answer.

Results

Submit the following items to the program coordinator:

- Monthly challenge submission form describing the students research and debate on transportation fuels
- Pictures or, even better, video(s) of the students debating
- Copies of students' reflections/short essays interpreting the debate results, as well as the questions about alternative transportation and water use from the activity.