



Alternative Transportation and Technology Researching Ethanol Fuels DRAFT

Title: Researching Ethanol Fuels

Objective:

Through research, students will investigate the environmental and economic benefits, and production of ethanol.

Standards:

Investigation & Experimentation –Grades 9-12

- 1.m. Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings.

Materials:

Several articles discussing Ethanol fuels
Poster Paper
Markers and colored pencils

Manpower Resources:

- Internet connection

Big Question?

Is Ethanol fuel a viable solution to our over consumption of fossil fuels?

Procedure:

1. Place students in small groups depending on the class size
2. Give each group an article about Ethanol to read. It is helpful to give students a specific question or topic to address. Ex. What is Ethanol?, What are the economic benefits of Ethanol?, How is Ethanol fuel made?, etc.
3. Have all groups silently read their article. The students should use active reading strategies (highlighting, underlining, starring, writing in the margin, questioning, etc.)
4. Give the students an opportunity to share what they have learned with their group.
5. Give each group a piece of butcher or poster paper. Have the students create a poster to answer their question or tell about their topic using words, pictures, **AND** symbols.

6. Have each group share their information in front of the class while displaying their poster.
7. Have the students take notes in a journal or on note paper, for each presentation.

Post – Lesson:

1. Students reflect on what they have learned by answering the question. Is Ethanol fuel a viable solution to our over consumption of fossil fuels?

Vocabulary to Know:

Ethanol, Alternative Fuel, Carbohydrate, Sugars, MTBE, Alcohol, E-10, E-85

Links to articles:

<http://www.eere.energy.gov/afdc/altfuel/ethanol.html>

http://www.eere.energy.gov/news/news_detail.cfm/news_id=9694

http://www.ilcorn.org/Ethanol/85_Ethanol/85_ethanol.html

<http://www.ilcorn.org/Ethanol/EthanolFact/ethanolfact.html>

http://www.livescience.com/environment/060126_ethanol_better.html

http://www.livescience.com/environment/060126_ethanol_better.html

http://www.livescience.com/environment/070523_corn_fuel.html

<http://news.carjunky.com/ethanol-fuel-abc261.shtml>

http://oee.nrcan.gc.ca/publications/infosource/pub/vehiclefuels/ethanol/M92_257_2003.cfm

<http://www.oee.nrcan.gc.ca/transportation/fuels/ethanol/ethanol.cfm?attr=8> (you can also use each link on the right hand side of this page to produce several articles of the students)

http://pubs.acs.org/subscribe/journals/esthag-w/2002/oct/policy/jp_ethanolassess.html

http://running_on_alcohol.tripod.com/id7.html

http://www.transportation.anl.gov/research/systems_analysis/fuel_ethanol.html