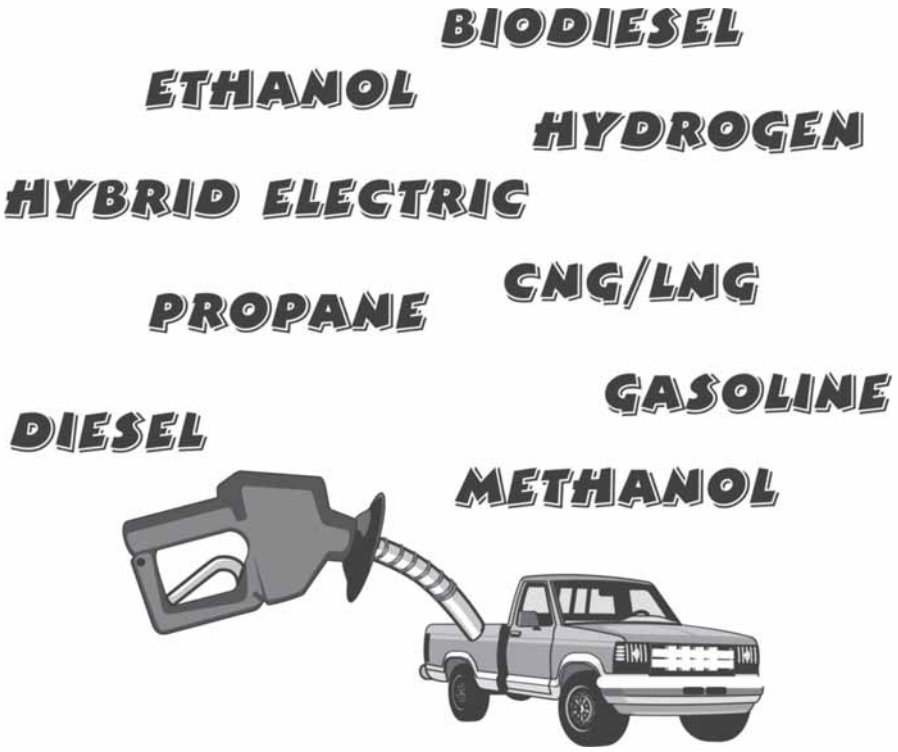
TRANSPORTATION FUELS EXPO

TRANSPORTATION FUELS

GRADE LEVEL
5–12

SUBJECT AREAS
Science
Social Studies
Language Arts
Technology

Students work in groups to create hands-on exhibits about conventional and alternative transportation fuels, then use these exhibits to teach others.



NEED 2008-2009
Putting Energy into Education
NEED Project PO Box 10101 Manassas, VA 20108 1-800-875-5029 www.NEED.org

Teacher Advisory Board

NEED Mission Statement

The mission of the NEED Project is to promote an energy conscious and educated society by creating effective networks of students, educators, business, government and community leaders to design and deliver objective, multi-sided energy education programs.

Teacher Advisory Board Vision Statement

In support of NEED, the national Teacher Advisory Board (TAB) is dedicated to developing and promoting standards-based energy curriculum and training.

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Correlations to National Science Standards

(Bolded standards are emphasized in the unit.)

INTERMEDIATE (GRADES 5–8) STANDARD E: SCIENCE AND TECHNOLOGY

1. Abilities of Technological Design

a. Identify appropriate problems for technological design.

b. Design a solution or product.

c. Implement a proposed design.

d. Evaluate completed technological designs or products.

e. Communicate the process of technological design.

2. Understandings about Science and Technology

c. Technological solutions are temporary and have side effects. Technologies cost, carry risks, and have benefits.

f. Perfectly designed solutions do not exist. All technological solutions have trade-offs, such as safety, cost, efficiency, and appearance. Risk is part of living in a highly technological world. Reducing risk often results in new technology.

INTERMEDIATE–F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES

3. Natural Hazards

b. Human activities can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal.

c. Hazards can present personal and societal challenges because misidentifying the change or incorrectly estimating the rate and scale of change may result in either too little attention and significant human costs or too much cost for unneeded preventive measures.

4. Risks and Benefits

b. Students should understand the risks associated with natural hazards, chemical hazards, biological hazards, social hazards, and personal hazards.

c. Students can use a systematic approach to thinking critically about risks and benefits.

d. Important personal and social decisions are made based on perceptions of benefits and risks.

5. Science and Technology in Society

a. Science influences society through its knowledge and world view. The effect of science on society is neither entirely beneficial nor entirely detrimental.

b. Societal challenges often inspire questions for scientific research, and societal priorities often influence research priorities.

c. Technology influences society through its products and processes. Technological changes are often accompanied by social, political, and economic changes that can be beneficial or detrimental to individuals and to society. Social needs, attitudes, and values influence the direction of technological development.

d. Science and technology have contributed enormously to economic growth and productivity among societies and groups within societies.

e. Science cannot answer all questions and technology cannot solve all human problems or meet all human needs. Students should appreciate what science and technology can reasonably contribute to society and what they cannot do. For example, new technologies often will decrease some risks and increase others.

SECONDARY (GRADES 9–12) STANDARD E: SCIENCE AND TECHNOLOGY

1. Abilities of Technological Design

a. Identify a problem or design an opportunity.

b. Propose designs and choose between alternative solutions.

c. Implement a proposed solution.

d. Evaluate the solution and its consequences.

e. Communicate the problem, process, and solution.

SECONDARY–F: SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES

3. Natural Resources

a. Human populations use resources in the environment to maintain and improve their existence.

b. The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources, and depletes those resources that cannot be renewed.

c. Humans use many natural systems as resources. Natural systems have the capacity to reuse waste but that capacity is limited. Natural systems can change to an extent that exceeds the limits of organisms to adapt naturally or humans to adapt technologically.

4. Environmental Quality

c. Many factors influence environmental quality. Factors that students might investigate include population growth, resource use, population distribution, overconsumption, the capacity of technology to solve problems, poverty, the role of economic, political, and religious views, and different ways humans view the earth.

5. Natural and Human-induced Hazards

b. Human activities can enhance potential for hazards. Acquisition of resources, urban growth, and waste disposal can accelerate rates of natural change.

d. Natural and human-induced hazards present the need for humans to assess potential danger and risk. Many changes in the environment designed by humans bring benefits to society, as well as cause risks. Students should understand the costs and trade-offs of various hazards—ranging from those with minor risk to a few people to major catastrophes with major risk to many people.

6. Science and Technology in Local, National, and Global Challenges

b. Understanding basic concepts and principles of science and technology should precede active debate about the economics, policies, politics, and ethics of various science and technology related challenges. However, understanding science alone will not resolve local, national, and global challenges.

Introduction

INCLUDED IN THIS BOOKLET

Teacher Guide with Resource List

Student Guides for each Exhibit

OBJECTIVES

Students will work in groups to create and present exhibits on conventional and alternative transportation fuels.

Students will enhance reading, writing, researching, public speaking, art, and critical thinking skills.

ABOUT THE ACTIVITY

The Transportation Fuels Expo is a cooperative learning activity. Students work together in small groups to create an exhibit on one fuel to educate themselves and teach others.

EXHIBIT TOPICS

Exhibit 1–Petroleum Fuels: Gasoline & Diesel
Exhibit 2–Biodiesel
Exhibit 3–Ethanol
Exhibit 4–Hydrogen
Exhibit 5–Electricity
Exhibit 6–Hybrid Electric
Exhibit 7–Propane
Exhibit 8–CNG/LNG
Exhibit 9–Methanol

GRADE LEVEL

This activity is designed for students in grades 5–12.

TIME NEEDED

Students can complete this activity in four-five days (one period per day for four/five days.)

MATERIALS NEEDED

NEED's The Future is Today (7-12) or What Car Will You Drive? (5-6) resource booklet.

Other resources and materials for creating the exhibits.

Teacher Guide

ASSIGN STUDENTS TO GROUPS

Divide students into nine groups.

Assign the groups to the topics listed on page 6.

MAKE EXHIBIT FOLDERS

Make an informational packet for each exhibit. Put all the materials in a folder and label it with the exhibit's topic. Each folder should include:

- ☐ Transportation Fuel Factsheet (one per student in the group)
- ☐ Student Exhibit Guide (one per student in the group)
- ☐ Any special materials and/or resources you have on the topic/source

COLLECT SUPPLIES AND OTHER MATERIALS

- ☐ one exhibit board for each group *(optional)*
- ☐ construction paper and posterboard
- ☐ colored markers, crayons, paints

Lesson Plan for Day 1

1. **Introduce the activity to the students. Topics to cover in your introduction include:**
   - ☐ A general overview of the role of transportation in our lives and the impact of transportation fuels.
   - ☐ The concept that all fuels have economic and environmental advantages and disadvantages.
   - ☐ A review of how students should work together in small groups and a timetable for working on the exhibits.
2. **Divide the students into their groups and assign their topics. Hand out the folders.**
3. **Review the Student Guide format and the information in the folders with the students. Explain the grading rubric with a total of 40 possible points as follows:**

5 = Excellent	Total points 36-40	Excellent (A)
4 = Very Good	Total points 31-35	Very Good (B)
3 = Satisfactory	Total points 24-30	Satisfactory (C)
2 = Fair	Total points 20-23	Fair (D)
1 = Poor	Total points < 20	Poor (F)

4. **Have students begin working on their assignments. Have the groups get your approval of the lists and scripts they are to write before they proceed to the next step.**

Lesson Plan for Day 2

1. **Monitor group work. Students should complete Steps 2 and 3 and begin working on Step 4 of the Student Guide.**
2. **Check work product. At the end of the assigned time, check each group's script.**
3. **Take a few minutes to review the schedule of presentations for Day 4 (or Day 5, if you determine that the students need more time).**

LESSON PLAN FOR DAY 3

1. **Monitor group work. Students complete Step 4.**
2. **Check work product. Make sure that students are ready to make presentations on Day 4.**

LESSON PLAN FOR DAY 4 (AND 5 IF NECESSARY)

1. **Set up exhibits.**
2. **Student presentations.**
3. **Evaluate student performance using the rubric.**

EXTENSION/OUTREACH

1. **Invite other classes in to visit your expo or take your expo to other schools.**
2. **Put on a presentation for the PTA.**

RESOURCES, LANGUAGE ARTS & TECHNOLOGY CONNECTIONS

Have the students create PowerPoint presentations instead of exhibits.

For graphics and other materials to use as resources for this activity, look on NEED's website (www.NEED.org) and in the following NEED booklets: The Future is Today, What Car Will You Drive?, Intermediate and/or Secondary Energy Infobooks.

The NEED website has links to many different energy organizations, including the ones listed on the next page. These organizations can provide supplemental resource materials on energy or a specific energy source. As a language arts activity, consider having your students write to these organizations for additional information a few weeks before you begin the activity.

WEB RESOURCES

www.kentuckycleanfuels.org - Kentucky Clean Fuels Coalition

www.afdc.doe.gov - Alternative Fuels Data Center of Department of Energy

www.ott.doe.gov - Office of Transportation Technologies of Department of Energy

www.eere.energy.gov/hydrogenandfuelcells - Department of Energy Hydrogen Fuel Cell Program

www.ccities.doe.gov - Clean Cities Program of the Department of Energy

www.eia.doe.gov - Energy Information Administration of the Department of Energy

www.epa.gov - U.S. Environmental Protection Agency

www.nrel.gov - National Renewable Energy Laboratory - Department of Energy

www.energy.ky.gov - Kentucky Division of Energy

www.doyourshare.org - Regional Ozone Coalition

www.evaa.org - Electric Electric Drive Transportation Association

www.energy.ca.gov - California Energy Commission

www.biodiesel.org - National Biodiesel Board

www.honda.com - Honda

www.fleet.chrysler.com - DaimlerChrysler

www.fleet.ford.com - Ford

www.gmaltfuel.com - General Motors

www.toyota.com - Toyota

www.parcar.com - Columbia Par Car

www.kypropane.org - Kentucky Propane Council

www.suburbanpropane.com - Suburban Propane

www.biog3000.com - Griffin Industries

www.ridetarc.org - Transit Authority of River City

www.apcd.org - Jefferson County Air Pollution Control District

www.transportation.ky.gov - Ky Transportation Cabinet

www.kysoy.org - Kentucky Soybean Council

www.ethanol-gec.org - Governors' Ethanol Coalition

www.fueleconomy.gov - Fuel Economy U.S. Department of Energy and Environmental Protection Agency

www.dieselforum.org - Diesel Technology Forum

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 1—Petroleum Fuels: Gasoline & Diesel

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuels.

How fuels are produced and distributed.

Vehicles that use the fuels.

Environmental impact of fuels.

Economic impact of the fuels.

Challenges to considering use of other fuels.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuels are produced.

Chart showing advantages and disadvantages of the fuels.

Pictures/models of vehicles that use the fuels.

Diagram comparing fuels to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 2—Biodiesel

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 3—Ethanol

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 4—Hydrogen

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 5—Electricity

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 6—Hybrid Electric

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 7—Propane

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 8—CNG/LNG

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

STUDENT GUIDE TO CREATING AN ENERGY EXHIBIT

Exhibit 9—Methanol

Step 1—Learn about Energy.

[1-5 pts] Read about your topic in your infobook and in your other materials. Underline the main ideas. Put a star (*) by the most important facts.

[1-5 pts] As a group, make a list of the facts you want to teach others. Make sure you discuss these topics:

Introduction to the fuel.

How fuel is produced and distributed.

Vehicles that can use the fuel.

Environmental impact of fuel.

Economic impact of the fuel.

Challenges to widespread use.

Step 2—Plan your Exhibit.

[1-5 pts] As a group, make a list of the displays you can use to make your exhibit interesting. Here are some suggestions:

Poster showing how fuel is produced.

Chart showing advantages and disadvantages of the fuel.

Pictures/models of vehicles that use the fuel.

Diagram comparing fuel to other fuels.

Step 3—Use your Talent.

[1-5 pts] As a group, decide who will do which jobs. Write down the name of each person in the group. Next to each name, write the person's jobs. You can have more than one person helping on each job.

Who will write the script?

Who will make the displays?

Who will collect the materials we need?

Who will learn the script and teach the others?

Step 4—Create your Exhibit and Write your Script.

[1-5 pts] Write a two minute script using the list of important facts.

[1-5 pts] Create an interesting display with posters and hands-on materials. Make sure the display and the script cover the same information.

[1-5 pts] Practice the script so that you don't have to read it. Use notecards with the important facts listed on them.

Step 5—Teach Others!

[1-5 pts] Give a presentation of your exhibit to others.

Total Points: _____

TRANSPORTATION FUELS EXPO

Evaluation Form

State: _____ Grade Level: _____ Number of Students: _____

1. Did you conduct the entire activity?	Yes	No
2. Were the instructions clear and easy to follow?	Yes	No
3. Did the activity meet your academic objectives?	Yes	No
4. Was the activity age appropriate?	Yes	No
5. Were the allotted times sufficient to conduct the activity?	Yes	No
6. Was the activity easy to use?	Yes	No
7. Was the preparation required acceptable for the activity?	Yes	No
8. Were the students interested and motivated?	Yes	No
9. Was the energy knowledge content age appropriate?	Yes	No
10. Would you use the activity again?	Yes	No

How would you rate the activity overall (excellent, good, fair, poor)?

How would your students rate the activity overall (excellent, good, fair, poor)?

What would make the activity more useful to you?

Other Comments:

Please fax or mail to:
NEED Project
PO Box 10101
Manassas, VA 20108
FAX: 1-800-847-1820

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Energy Training Solutions
Energy and Mineral Law Foundation
Energy Training Solutions
Equitable Resources
Escambia County School District–FL
FPL Energy Encounter–FL
First Roswell Company
Florida Department of Environmental Protection
Foundation for Environmental Education
Robert Gorham
Guam Energy Office
Halliburton Foundation
Gerald Harrington, Geologist
Houston Museum of Natural Science
Hydropower Research Foundation
Illinois Clean Energy Community Foundation
Illinois Department of Commerce and Economic Opportunity
Independent Petroleum Association of America
Independent Petroleum Association of New Mexico
Indiana Office of Energy and Defense Development
Interstate Renewable Energy Council
Iowa Energy Center
Kentucky Clean Fuels Coalition
Kentucky Office of Energy Policy
Kentucky Oil and Gas Association
Kentucky Propane Education and Research Council
Kentucky River Properties LLC
Keyspan
KidWind
Llano Land and Exploration
Long Island Power Authority–NY
Maine Energy Education Project
Maine Public Service Company
Marianas Islands Energy Office
Maryland Energy Administration
Massachusetts Division of Energy Resources
Michigan Energy Office
Michigan Oil and Gas Producers Education Foundation
Minerals Management Service–
U.S. Department of the Interior
Mississippi Development Authority–Energy Division
Montana Energy Education Council
Narragansett Electric–
A National Grid Company
NASA Educator Resource Center–WV
National Alternative Fuels Training Center–
West Virginia University
National Association of State Energy Officials
National Association of State Universities and Land Grant Colleges
National Hydropower Association
National Ocean Industries Association
National Renewable Energy Laboratory
New Jersey Department of Environmental Protection
New York Power Authority
North Carolina Department of Administration–State Energy Office
Nebraska Public Power District
New Mexico Oil Corporation
New Mexico Landman's Association
New York State Energy Research and Development Authority
Offshore Energy Center/Ocean Star/
OEC Society
Offshore Technology Conference
Ohio Energy Project
Pacific Gas and Electric Company
Petroleum Equipment Suppliers Association
Poudre School District–CO
Puerto Rico Energy Affairs Administration
Puget Sound Energy
Roswell Desk and Derrick Club
Roswell Geological Society
Rhode Island State Energy Office
Sacramento Municipal Utility District
Saudi Aramco
Schlumberger
Sentech, Inc.
Shell Exploration and Production
Snohomish County Public Utility District–WA
Society of Petroleum Engineers
David Sorenson
Southwest Gas
Spring Branch Independent School District–TX
Tennessee Department of Economic and Community Development–Energy Division
Toyota
TransOptions, Inc.
TXU Energy
University of Nevada–Las Vegas, NV
United Illuminating Company
U.S. Environmental Protection Agency
U.S. Department of Energy
U.S. Department of Energy–Hydrogen, Fuel Cells and Infrastructure Technologies
Virgin Islands Energy Office
Virginia Department of Mines, Minerals and Energy
Virginia Department of Education
Virginia General Assembly
Wake County Public Schools–NC
Western Kentucky Science Alliance
W. Plack Carr Company
Yates Petroleum