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## **The Fuel of the Future: My Work in Creating and Promoting Biodiesel**

### **Culminating Project Overview:**

For my culminating project, I will be researching, creating, and participating in the widespread use of an alternative fuel in my community. I will a) learn how to create biodiesel, b) actually create and use biodiesel in a car, c) research the feasibility of biodiesel as an alternative fuel source in the community, d) promote the use of biodiesel in my community, and e) explore the demographics of biodiesel use in my community, northeast Seattle.

By learning the science of the internal combustion engine, and learning how to create an alternative to fossil fuel, I will be enhancing my understanding of science AND doing my part to address global warming. I will be able to educate members of my community about the negative political, social, and environmental effects of continued reliance on fossil fuels, and will make it possible for more people to use an alternative fuel by providing a biodiesel filling station

I love Science, and want to use my understanding of Science to help make the world a better place. I hope to be able to continue studying and researching climate and energy issues in College and in my career so that I can be a positive part of the future.

### **Prior Knowledge**

Last year I attended Nathan Hale's biodiesel club meetings just twice. I never learned how to make biodiesel fuel myself, but I saw it being made, and I also visited a local biodiesel station. I know that biodiesel is made from recycled cooking oil,

and I have a limited understanding of how an internal combustion engine works.

I have always been interested in Science. When I was five years old, I conducted my first experiment in my kitchen, combining baking soda with various liquids, including vinegar, to see the outcome. I figured out that some substances created a reaction and others didn't. Ever since then, I've been experimenting with the world around me. I have curiosity, but not a lot of discipline. To complete this project, I will have to learn to take careful notes, to record my data, and to do thorough research.

I am also planning to use the skills I'm developing in my Statistics class as I go out into the community to explore the feasibility of biodiesel use in my community. I will be creating and giving a survey and analyzing the data.

### **Expected Outcomes**

I hope to learn several things: a) How to make biodiesel; b) How to successfully dispense biodiesel to community members in a biodiesel filling station that I will run, c) how to encourage the use of an alternative fuel in my community, and d) what the attitudes are about biodiesel in my community.

I hope to learn how skilled I am at persuading people to care about an abstract issue like global warming. I'm not a naturally very talkative person, so this will be a challenge for me. I also hope to learn about statistical analysis and how to interpret data that I collect myself. Most of all, I want to learn how to make the environment cleaner.

If I am successful, I will learn some important science skills, some important math skills, and some very important social skills. If I am successful, more people in my community will think twice about filling up their car tanks with petroleum products. They will become aware that there are other fuel alternatives, and they

will be more concerned about global warming.

### **Research Focus**

I will need Mr. Feigal-Stickles to guide me in my project. He started the bodies club at Nathan Hale, and he understands the Science as well as the issues about alternative fuels. I will also need the book *Do It Yourself Guide to Biodiesel: Your Alternative Fuel Solution for Saving Money, Reducing Oil Dependency, Helping the Planet* by Guy Purcellato help me as I undertake this project. As my expert advisor, Mr. Feigal-Stickles will a) show me how to make biodiesel, b) help me set up a biodiesel fueling station. I will have to work on my own to explore the feasibility of biodiesel use and conduct my survey.

My sources are:

[http://www.biodiesel.org/resources/legissues/2008\\_extenders\\_package.shtm](http://www.biodiesel.org/resources/legissues/2008_extenders_package.shtm)

(information about biodiesel legislation)

[http://journeytoforever.org/biodiesel\\_make.html](http://journeytoforever.org/biodiesel_make.html) (information on making biodiesel)

*Biodiesel: Growing A New Energy Economy* by Greg Pahl

I will be collecting data on local fuel use through a survey that I will create, administer, and analyze.

### **Vision of Final Exhibition Presentation**

I hope that the panelists who hear my presentation will walk away with an understanding of the need for alternative fuels, the feasibility of biodiesel use, and the dangers of global warming.

I will present images from the creating of biodiesel, the dispensing of biodiesel at my own filling station (the Anti-Fossil-Station), an image of the survey I will give, and charts showing the feasibility of more widespread biodiesel use in my

community.

I will share these images with PowerPoint presentation. I will also give a hands-on demonstration of biodiesel creation, complete with a miniature biodiesel car.

I hope to be a scientist and social activist in the future. The research and analysis of data I will be doing will help to prepare me for my career.