



Emerging Ecology

Experience Interchange
For The Global Classroom

December 2012

Essays by students at
Forsyth Country Day School

Green Campus Class

Focus Question:

Saving Energy

These essays respond to 8 prompts or questions.

1. Decide your focus. Choose your home, your school or your neighborhood / village.
2. List some of the things you do that require energy from coal, oil and gasoline, electricity or the sun.
3. Describe how much the energy costs affect the costs of the things you do.
4. Explain whether you need to use more or less energy to do the things you want to do.
5. Discuss how you might shift from fossil fuels to renewable energy sources.
6. If possible, report on any alternative energy programs in your area.
7. State how the answers you made to the first five items makes a difference for the way you will live five years from now.
8. Give your document a memorable title.

Student #66, 11th Grade Male

Mean, Green, House Machine

The focus of my Energy Essay will be my home. I am most familiar with the various uses of energy at home and will be able to quickly see the effects of my recommendations to reduce the amounts of fossil fuel used and increase the amounts of alternative energy at home.

In preparation for my essay, I began to look around the house to see how various forms of energy are used in my day to day life. Almost everything I do or touch throughout the day is related to energy and fossil fuel usage in some way. Some of the things at my house that require energy from coal, oil, gasoline, and natural gas, electricity, or the sun are listed below:

Coal

- Coal is burned to produce steam which generates about fifty percent of the electricity used in the United States. Therefore, anything that uses electricity in my house indirectly comes from coal.
- Charcoal is used on the BBQ grill to cook our food when we “grill out”.
- Charcoal is also used in filters to clean the air in our home, and we even have charcoal in a sock in the refrigerator we have stored in the basement to reduce odors when not being used.

Oil

- Motor oil is used in my car engine, the lawnmower motor, and basically any motor that has moving parts.
- Anything plastic is made from oil so food containers, plastic water bottles, plastic appliances (hair dryers, toaster, etc), plastic cups and bowls all use this fossil fuel.
- Oil is also the active ingredient in laundry detergent and a byproduct of crude oil is used to make crayons.

Gasoline

- Gasoline is the fuel that powers most all combustible engines such as my car, dirt bike, and the lawnmower.
- Gasoline and oil are mixed together for smaller, two-stroke engines such as the leaf blower, the chainsaw, and the outboard engine for my John boat.

Natural Gas

- The heating furnace, cook top stove, and water heater in my house all burn natural gas to create heat.
- Our gas grill for “cooking out” uses LP gas that comes in a recyclable tank.

Electricity

- Electricity is used for almost all appliances in my house such as the toaster, refrigerator, air conditioner, lights, computer, and even my i-phone charger.

The cost of the energy used in my home is more that I would have thought. After researching how much my family spends on electricity and natural gas, my portion of the monthly expenditure is \$100 a month.

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If I fill up my car with gasoline twice during the month, this adds another \$150 per month. That means that I spend about \$250 a month, or \$3000 a year on energy related items. The more my family saves on energy, the more we can spend on other basic necessities like food and shelter. It also allows us to be able to take nicer vacations and allows me to attend a private instead of a public school.

Obviously, I need to use less energy to do the things I want to do. I can make small changes regarding energy usage at home to conserve energy, save money, and help the global environment. Some of the changes that I plan to make won't affect how I live my daily life are listed below:

- Turn out the lights and TV when not in the room.
- Put my computer on "sleep" mode when it's not being used.
- Replace incandescent light bulbs with energy efficient bulbs.
- Take shorter showers. Turn off the water when "soaping up".
- Turn on the ceiling fan in my room and turn up the thermostat for the air conditioner.
- Close the blinds/curtains in the summer and open them in the winter to help lower heating and air conditioner energy by using more of the sun's alternative energy.
- Drive fewer miles in my car by planning trips better. Carpool more with my family and friends. Don't accelerate from stoplights as fast and try to drive a little slower.
- Add more insulation in the attic, consider adding another attic fan.
- Buy a new energy efficient dishwasher to replace our old one.
- Drink less bottled water and drink more water from the filtered water tap in our kitchen.

Some examples of alternative energy programs in our state and local area are:

- The North Carolina Sustainable Energy Association has produced "A Citizens Guide" for wind, hydroelectric, solar, geothermal, and biomass ideas to educate us on alternative energy.
- Duke Energy has a program where neighbors compare electricity bills (use of peer pressure to lower energy usage and costs).
- Wake Forest University Baptist Medical Center has developed a biodiesel fuel produced from vegetable oil and animal fat.
- Winston Salem State University has a sustainability committee that is converting the campus fleet vehicles to use biofuel and recycling cooking oil to use as biofuel.

I do plan to make a difference in how I live and use energy five years from now. I'll begin by changing my actions to include the ideas listed above, since those are easy to implement. When its time to buy another car, I'll consider a hybrid model. I will try to reduce, renew, and recycle everything possible. But most important of all, I will act as a role model and set the example for others to follow. If we all make small changes in our behavior in our individual lives, it will result in huge changes in our global energy usage and sustainability efforts.

Energy in My Home and Daily Life

1. Energy from—
 - a. Coal: none.
 - b. Oil: heat.
 - c. Gasoline: cars.
 - d. Electricity: air conditioning, lights, sockets.
 - e. Sun: none.
2. Energy costs affect how much you can drive, when we can/cannot use heat/ac.
3. More energy if we want more AC/Heat.
4. Getting solar panels, trying wind energy.
5. Solar panels at school. Not sure of any other alternative energy.
6. Hopefully there will be more alternative energy in the next 5 years and more green-friendly housing and cars.

Student #181, 11th Grade Female

Changing Our Ways

1. My house!

2. **Energy-** hair dryer, straightener, curling iron, lights, shower, the toilet, heat, air conditioning, phone charger, refrigerator, stove, oven, dishwasher, garbage disposal, toaster, coffee maker, microwave, computer, printer, tv, fan, water heater, washer, dryer, radio, leaf blower, flood lights.

Gas- My car, gas grill

3. Can't use as much of it, have to watch how much you use, can't over use, if costs increase the less we can use something, the higher the gas prices the higher the cost goes up on products in stores that require gas to be transported to the store.

4. In today's society we need to start using less energy, but currently we use more energy to do the things we want to do. But, we need to shift our focus on producing things that require less energy. The older we get the more places we want to go, (ex: a concert in Greensboro) in order to go to this concert we have to use our car more and travel farther, therefore using more energy. A way to be able to travel to Greensboro with friends and use less energy would be, carpooling, using a hybrid car, taking the bus, or using an electric car. Even though all of these options require energy, it is cutting down on the energy use slightly. In order to use even less energy, a new idea has to be made that is an alternative to using energy and gas to get someplace.

5. Instead of burning fossil fuels, we need to use other alternatives like, solar power, and wind power. Instead of relying on energy to heat your house or cool it off in the summer, you can use a solar panel which will take in the sunlight and convert it to energy to heat and cool your home.

6. In Forsyth County there are four main focuses on how to improve Forsyth environment. This was found off of a site called, cityofws.org. There first point is "protect high-quality natural areas and sites with rare plants and animals". The second is, "provide clean, high quality water to meet the domestic, economical and recreational needs of the community". The third is, "improve air quality". And the fourth is, "enforce scientifically- based and cost –effective environmental regulations". Yes we definitely need to add more to this to help improve the environmental conditions, but it's a good start.

7. Not just by answering these questions, but by being in the green campus class has changed my ways of living thus far. I am more conscious of what I recycle and how I recycle, I recycle more, I turn off the lights more, I reuse paper, I print less often, I take shorter showers etc. I have become more consciously aware of my actions and I have changed them. I even speak up to people to be sure they are turning the lights out and that they are recycling properly. It's amazing that only half of a quarter at school has had this much impact on me, I wonder what I will be like by the end of the school year.

Student #90, 11th Grade Female

Environmental Power

1. Decide your focus. Choose your home, your school or your neighborhood / village.
Home
2. List some of the things you do that require energy from coal, oil and gasoline, electricity or the sun.
 - Heating and air conditioning in the house
 - Lighting for the home (usually not used during the day)
 - Driving to school and soccer practice use gasoline
 - The gasoline stove in the kitchen
3. Describe how much the energy costs affect the costs of the things you do.
My family and I can't always have the heating and air conditioning on because it cost so much therefore we don't have the air conditioning and heat on when we are not there during the day.
4. Explain whether you need to use more or less energy to do the things you want to do.
I think my family and I need to use less energy in our home. Sometimes we will have the lights on during the day when they are not needed because the sun provides enough light
5. Discuss how you might shift from fossil fuels to renewable energy sources.
Most of the light bulbs in my house are the original light bulbs that are not environmentally friendly. Therefore, I can switch out all the light bulbs possible to conserve more energy
6. If possible, report on any alternative energy programs in your area.
None at my home but at school the solar power panels on the roof
7. State how the answers you made to the first five items makes a difference for the way you will live five years from now.
Five years from now I think everyone is going to be more willing to save energy. Also, it is going to get cheaper every year. Plus, it will save the economy money by switching to more economically friendly materials.

Student #148, 11th Grade Male

Staying Green in the United States

1. My focus is my home.
2. I need coal to keep my house warm during the winter. Oil and gasoline is necessary for my car. My stove uses electricity to heat my food.
3. Energy cost hardly has an effect on the things I do. If I am not in a room I turn the lights off which will save me some money.
4. I need to use a lot of energy when I am home. I do not spend a lot of time at home but, when I am home I need my computer for home work. I need my stove for dinner and I would also like to watch television before I go to bed.
5. Buy a hybrid and run E85 Ethonal. Sense a hybrid car does not run on gasoline you do not have to worry about pollution. The hybrid runs on renewable energy, which means that you can charge your car.
6. In my area we have alternative energy programs. These programs include ethonal and corn syrup.
7. I feel that that I will be fine five years from now. I don't use energy in my home unless necessary. However, now that I know more about energy I'll be more aware of the environment and how to save money when possible.

Student #148, 11th Grade Male

The Things I Wish I Would Do

1. Decide your focus. Choose your home, your school or your neighborhood / village.

My house

2. List some of the things you do that require energy from coal, oil and gasoline, electricity or the sun.

Occasionally when we have a big get together at my house, we use coal to cook on our grill. It is the cheapest energy source for when we cook for a large group of people. We use oil in our cars that we use day to day. We also use oil in our mowers and other machines that we use to care for our house. We use natural gas in our stove at our house. It's a safe way to cook and use a source of gas. Electricity is used all through out our house with lights, plugs, oven, microwave and other home used items.

3. Describe how much the energy costs affect the costs of the things you do.

If gas prices rise very high, our travel will become limited and we will try to not use the stove and other appliances that aren't necessary for survival. We will still continue to run the lawn mower and things like that but only the necessities.

4. Explain whether you need to use more or less energy to do the things you want to do.

Technically, my family could use a lot less energy than we use as of now. We leave lights on all the time and we continuously drive two cars to places and waste gas. The most important thing we could do at this point to use less energy would be to turn the lights off when we aren't home and unplug random cords from the wall that are not being used.

5. Discuss how you might shift from fossil fuels to renewable energy sources.

We might install a wood fireplace to use during the winter instead of a gas logs. The fumes will be less dangerous to the environment and to the people inside the home. Also, we have considered using solar power to heat our house sometimes during the winter.

6. If possible, report on any alternative energy programs in your area.

In my area we are trying to reduce greenhouse gas emission. We are also recycling more to use things more than once and for different reasons.

7. State how the answers you made to the first five items makes a difference for the way you will live five years from now.

Five years from now, I believe the world will have put in an advanced way to supply energy to homes. It will more cost effective. I will be more aware of when I am wasting energy and also I will be out on my own and have to pay my own bills for my own home. I will be much more aware of how I can save energy and how I can save money because I will just be getting out on my own with no money to waste on wasted energy.

Student #29, 11th Grade Female

Green House

The area that I wish to focus on is my home. In my house my family and I use most of our energy from the gas fireplace, gas stove, heating and air conditioning, laundry and the dishwasher. The cost of energy absolutely affects the things my family and I do in our household. Such as, we only turn the heat on in our house in the winter, we only use the fireplace a couple hours at a time during the winter, we only turn the air conditioning on during the summer time, and we turn off lights when we are not in rooms to save energy and money. I use more energy in my house because of all the appliances and electricity it takes to circulate through the entire house and in my household we are almost always using some appliance so we use more energy which cost more money. To make my house more economically friendly we could switch out all of our normal light bulbs for LED light bulbs, also insert solar panels on our roof to save energy which then alternatively saves money, we could install automatic on/off switches so that when a person enters the room the light goes on and stays on until that person leaves then it will automatically cut off. Also, we could go wireless and not have any cords plugged into the wall, thus, also saving money and energy. In the future, I will definitely be more cautious on my energy and economic decisions I make for my family and I. I will choose green house hold products that are natural and have no chemicals present in the container. Also, I will drive a hybrid car which does not run on gasoline to save money over time. Also, I will only turn on lights if I am in that room and then as soon as I exit I will turn it off behind me. All these ways are great ways to environmentally improve my house and live green.

Student #90, 11th Grade Female

Adjusting the resources in my surroundings

1. Decide your focus. Choose your home, your school or your neighborhood / village.
My house

2. List some of the things you do that require energy from coal, oil and gasoline, electricity or the sun.

At my house we have a gas stove and gas grill. This means for pretty much every meal we use gas. My car is another large consumer of gas. I drive a lot and am constantly refilling my tank it feels like. Lawnmowers use, but I don't know how much because I don't mow my lawn my older brother does.

3. Describe how much the energy costs affect the costs of the things you do.

Honestly I don't really think about the cost of energy when I am doing something. The only time it crosses my mind is before I fill up my gas tank. That is probably because filling up my tank is the only time I see how much me using energy cost.

4. Explain whether you need to use more or less energy to do the things you want to do.

I could be more fruitful when it comes to my consumption of energy. I should probably carpool and not just drive around aimlessly on nice days.

5. Discuss how you might shift from fossil fuels to renewable energy sources.

We could conserve fossil fuels by switching from regular electricity to solar powered panels. This would conserve the fuels needed to create much of the electricity used throughout the day.

6. If possible, report on any alternative energy programs in your area.

Duke University which is only about two hours away from my house has an excellent green campus program. They have established a completely green house. That is able to be lived in my members of the green campus class.

7. State how the answers you made to the first five items makes a difference for the way you will live five years from now.

Well five years from now we will have considerably less fossil fuels left. I imagine we will be close to using all renewable energy sources. Like solar power, wind power, and water power.

The Inescapable Energy We Use

My focus is my house. Electricity is used to power many things such as the air conditioner, washer and dryer, the dishwasher, the refrigerator and freezer, kitchen appliances such as a microwave and toaster, and the television. This energy comes from power plants such as Duke Energy. We use oil in cars and to power lawnmowers. Gasoline is used to power our fireplace and to power our cars. The cost of using this energy can be expensive and in some ways puts limits on what I do. We have decreased the amount we drive cars as much as possible due to rising gas prices. We make an extra effort to turn off lights when we leave a room so we aren't spending money on wasted energy. During the summer and the winter we try avoid using the air conditioner and the heat as much as we can. Our system is set on a timer to turn off during the night and hours we are not there, and to turn back on when we are home. I use energy for technologies my family uses such as charging cell phones, ipods, and computers. I like to travel and go places with friends, which requires energy. I play sports at my school and around North Carolina, so traveling to those places makes gasoline necessary. There is always the potential to convert from non-renewable resources to renewable energy resources by means of solar panels, collecting wind power into energy, or switching to electric cars over gasoline powered cars. My grandparents have a large windmill next to their house they use to power some of the energy needs they to provide electricity for their land. I believe that 5 years from now there are going to be so many new and more efficient renewable resources. The technology improvements concerning cars and the amount of gas they require will improve as awareness of the need to going green continues to spread. House will be much more green as new appliances continue to develop and are created for the purpose of saving energy. The appeal to going green will depend on the money saving opportunities that green products have the potential to be.

Student #185, 11th Grade Male

Ways to make the place I live safer and greener

1. Decide your focus. Chose your home, your school or your neighborhood / village.

I have chosen to focus on my home because we as Americans tend to be very wasteful at our homes.

2. List some of the things you do that require energy from coal, oil and gasoline, electricity or the sun.

During my everyday encounters I use gasoline at least twice a day. I commute around 30 miles to school every single day. Once a week we mow our lawn. Every bit of the lighting in our house, heat, and air conditioning use coal.

3. Describe how much the energy costs affect the costs of the things you do.

Energy costs pose a huge problem when it comes to the everyday things I do. I live far away from all of my friends and me having to pay for my gas can damper how much I see my friends.

4. Explain whether you need to use more or less energy to do the things you want to do.

With everything I do it basically requires the use of energy. Everything from hanging out with my friends to my everyday commutes to school.

5. Discuss how you might shift from fossil fuels to renewable energy sources.

One of the main ways of switching from fossil fuels would be to use all E 85 ethanol in my vehicle. That is one of the most practical ideas but way in the future I could move closer to school where a hybrid vehicle would be useful.

6. If possible, report on an alternative energy programs in your area.

Where I live other that Forsyth Country Day I do not know any programs that are one step ahead and really trying to go green like my school.

7. State how the answers you made to the first five items makes a difference for the way you will live five years from now.

In the next five years the things I said would only alter my life a little, but it certainly makes me think with every decision I make is there a greener or more environmentally friendly way to do this.

The Era We Live In and what is to Become

In order to run a school, there is a lot of energy that the school uses to power all the sources that enable us to learn. Computers, lighting, machinery, water systems, and many other sources of energy are necessary in order to have a learning environment that enables the students to learn at their best potential. In order to do the things I like to do, energy is not necessary. The things I like to do, like extra-curricular activities, does not really involve and energy source because both of the activities I do are outside. The sun, of course, is needed in order for me to ride horses or play field hockey. In order to do what I like, I have to have some way to get there. By saying that, gas prices are going to have to stay a certain price or around the certain price for me to pay and put that oil into my car. If I wanted to switch to renewable energy sources, I would buy a hybrid car and run it on E85 ethanol. In our community, we are trying to reduce greenhouse gas and emission. Five years from now, technological improvements will have been made to improve the world we live in. In the future, I see that everybody in the United States will start driving all hybrids and smaller cars be more eco-friendly. Gas is always going to be a limited resource so people will down size on their automobiles and drive smaller, more efficient vehicles. I suppose that technology, in the future, will be made that will only be using energy when being used by the operator. They will have switches that allow one to turn the energy power off in order to save energy.

Student #146, 11th Grade Male

“Global Warming is a Global Warning”

1. My focus is on my school and my home.
2. Some of the things that I do that require energy from coal, oil and gasoline, electricity or the sun include: driving my car, using computers at school and at home, cooking, and using the lighting/heating/AC in my house.
3. The cost of gasoline affects the how much I drive my car. When gas prices increase; the amount I drive decreases.
4. I should use less energy to do the things I do on a daily basis so that I save energy and support global warming.
5. The shift from fossil fuels to renewable energy sources would take place by replacing wood with coal, whale oil with petroleum, fossil fuels to alcohol. Solar energy, wind energy, and geothermal energy are great sources of energy to use.
6. There is a “Wind for Schools” program that occurs at Appalachian State University which consists of installing small scale wind turbines at schools in North Carolina so that they can use wind power. Wind Power is more affordable and more efficient. Although, the schools cannot be in a dead wind zone, like our school, for this to be able to take place.
7. Later on in my life, the amount of energy I use will decrease in order to save money and help the environment. I may even be in a city so that I can walk everywhere and not use a car.

Don't Throw Away Money

1. I would like to focus on my use of energy involving school since I am there almost every day.
2. I use energy to get to school through my car and at school I use paper and electricity (computer and lights) constantly.
3. I regret to admit it, but the cost of my energy use has not affected me very much. This is because I am simply not the one paying for it. My parents pay for the gas for my car and the school pays for the energy I use at school. Although I do not worry about the cost of energy very much it does not mean that I am wasteful with it.
4. In the future I would like to be an investment banker which is a job I would most likely use more electricity but I believe I would still try to conserve energy by submitting documents electronically.
5. In my opinion we have not discovered a completely renewable resource that would efficiently supply energy, but I do believe that we should stop using gasoline and replace it with natural gas. Natural gas is not only cheaper to use, but it also cleaner, although it is not completely clean I think it is worth a start.
6. At school the engineering class created some solar panels to power a very small portion of the school. I think it is very impressive that students managed to create an alternative clean energy source even if it only powered a small portion of the school.
7. In the future I will make sure I am much more aware of the costs of energy because I know eventually I will be the one paying for it. I will also try to make that I do not waste energy and will try to keep others from wasting it.