

Global Warming Project

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CET 726

The purpose of this project is to create a student-centered activity for freshmen physical science students to reinforce the concept of conservation of energy by relating it to the environmental concerns of global warming. The advantage of this activity over traditional text book delivery is in the higher ordered thinking skills the students will utilize. Students will brainstorm, make predictions & hypothesize, gather information, collaborate, analyze, and develop multimedia, all in an effort to foster a greater sense of ownership over their learning. Listed below are the two main South Dakota standards this project will address:

9-12.P.3.1. Students are able to describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy.

9-12.S.2.3. Students are able to analyze and describe the benefits, limitations, cost, and consequences involved in using, conserving, or recycling resources.

The project's objective is that the students will be able to apply the Law of Conservation of Energy, which states that energy can't be created or destroyed only transferred from one form to another, in an effort to inform the local community on how to better utilize electricity. The class goal is that student teams will work together to inform and hopefully promote change within the community with respect to electricity production/consumption and its effects on global warming. Team projects can be but are not limited to: a newspaper article, PowerPoint, pamphlet, poster, photo story, wiki, blog, or even possibly a social networking application such as MySpace or FaceBook. They are encouraged to use their imagination and keep in mind the finished product needs to have the ability to reach an audience outside of our classroom.

Problem for the Students

According to a June 14, 2007 National Geographic article *Global Warming Fast Facts*, “The 20th century's last two decades were the hottest in 400 years and possibly the warmest for several millennia, according to a number of climate studies. And the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports that 11 of the past 12 years are among the dozen warmest since 1850”. Average temperatures have climbed 1.4 degrees Fahrenheit (0.8 degree Celsius) around the world since 1880, much of this in recent decades, according to NASA's Goddard Institute for Space Studies. Based on the work of some 2,500 scientists in more than 130 countries, concluded that humans have caused all or most of the current planetary warming. Human-caused global warming is often called anthropogenic climate change.

For this activity we are going to look at what we can do to slow down the effects of global warming by focusing on electricity production and consumption. This just isn't a class assignment; it is a major concern for all mankind. How can you change the world? I know what you are thinking, “How can I make a difference as one person”, but you can. I want to recall what you learned earlier in history class about the civil rights movement in the U.S. in the 1950's. One woman, Rosa Parks, in 1955 fed up with mistreatment and discrimination refused to give up her bus seat, resulting in her arrest. What followed was a 381 day Montgomery, Alabama bus boycott, Martin Luther King, U.S. Supreme Court and a full blown civil rights movement. Small changes can produce Big results.

Part One – 10 points

I want you brainstorm with your partner what you think some of the causes are to global warming and post them on the Wiki I have created.

Part Two – 20 points

You need to research global warming & electricity production and consumption answering the following questions.

1. List renewable and nonrenewable energy sources.
2. Give examples of each source and how they are utilized.
3. List advantages & disadvantages to the listed energy sources.
Make sure to include environmental impact.
4. What is U.S. consumption (%) of energy compared globally?
5. What is the U.S. (%) of electricity generation by energy source?

Part Three – 60 points

Your group will inform and promote reducing global warming to our local community by using one or more of the following: a newspaper article, PowerPoint, pamphlet, poster, photo story, wiki, blog, or even possibly a social networking application such as MySpace or FaceBook. This isn't a complete list of options so use your imagination and let me know if you have other ideas. Make sure to identify your target audience and keep it age relevant. Some examples of a target audience might include an elementary class, senior citizen home, church, or supermarket.

Part Four – 10 points

As a class we will determine the best method to figure out the percentage of people in the community we were able to reach and also try and measure the affects of our efforts.