GYC101MerrimanPHS101.doc

This group research project and presentation is being designed for my Introduction to Physical Science (PHS-101) course for use in the Fall 2013 semester. One of the key topics we discuss in this course is that of energy, all of its forms, the way we harness it and the way we use it as a society. We return to this discussion throughout the semester, as energy is a governing principle of all of the physical sciences. I also make time in this course to discuss the effects of our energy choices on society and the environment, and to discuss the difference between renewable and non-renewable sources of energy. I am creating this assignment to take that discussion a step further, and give the students the chance to do some independent research on a particular form of renewable energy that interests them.

1. Greening Your Curriculum 101
2. Steven Merriman, PHS-101, Introduction to Physical Science
3. Renewable Forms of Energy Group Presentations
4. Relate the principles of physical science to daily experience, demonstrate an understanding that scientific knowledge changes with time as discoveries are made, improvement of personal critical thinking skills
5. Students will display an understanding of the need for society to begin using renewable forms of energy, the importance of breaking away from fossil fuels, and the urgency of the issue.
6. Students will utilize critical thinking skills in formulating the presentation, showcasing the research they have done, and displaying a deep understanding of the ins and outs of the form of renewable energy they have chosen.
7. This project will be relevant to the lives of the students as it is their generation that will have to act towards a greener, more renewable energy based society.

Introduction to Physical Science

Research Project: Renewable Energy

Renewable Energy Choice: _____

With your lab group, choose the type of renewable energy you would like to present to the class from the list below. This choice will be taken on a first come, first serve basis with no two groups doing the same project.

List of Possible Topics

Wind Turbines	Photovoltaic Cells (solar panels/home use)
Geothermal (large scale/power plant)	Geothermal (small scale/home use)
Hydropower/Hydroelectric Dams	Water Turbines
Biomass/Biofuels	Solar Electricity Plants (large scale/power plant)

Assignment

With your lab team, create a 10-12 minute presentation about your choice of renewable energy source. In the presentation you will:

1. Highlight the pros and cons of the source
2. Discuss any negative environmental effects
3. Discuss the maximum energy generation by today's standards
4. Give a general history and the future of the technology
5. Discuss the general physical principles that govern the technology (ex. How does a wind turbine, solar panel, hydroelectric dam, etc. work?).
6. Highlight the regions where this form of renewable energy would be most beneficial (maximum energy yield). For example, wind turbines will probably yield the most energy in a place where it is windy most of the year. Discuss the beneficial effects your form of renewable energy can have on our society (creation of jobs, cutting down on pollution, lower dependence on foreign oil, etc.).

Include with the presentation a 2 page summary of the presentation material.

General requirements for the project are as follows:

a. Use at least 5 sources

   1. One can be the textbook

   2. Two can be from the internet

   3. One has to be from a magazine or newspaper article

   4. One has to come from the MVCC Library

b. The presentation can contain a video from YouTube (or other website/dvd), but it can be no more than 2 minutes long.

c. All members of the group must contribute to both the creation of the presentation and its execution. Any member not participating will receive an automatic grade of 0.

d. Have fun with it. You are in no way confined to using PowerPoint. Use any method of presentation your group can come up with.

Introduction to Physical Science

Project 1: Renewable Energy Grading Rubric

Pros and Cons	What are the positive aspects of this form of renewable energy? How about the negative aspects?	/10
Environmental Effects	What effects will this form of energy have on the environment around it? Is there anywhere we cannot use it due to negative environmental effects?	/10
Energy Output	How well does this renewable source produce energy? Give in terms of average homes that can be powered, etc.	/10
History and Future	What is the history of the technology involved? How has it evolved over the years? Where do we see it going in the future?	/10
How does it work?	How does this technology work?	/10
Greatest Benefit	Where can we really benefit from the use of this technology? Where will it have the greatest energy creation? Where will it most benefit society?	/10
Overall Completeness	Were all topics covered in the presentation? Did the presentation show that all group members understood the material? Was the presentation thorough?	/15
Summary	Simply summarize the topics covered in your presentation in a 1.5-2 page paper (typed, 12 pt. font, 1.5 spacing)	/15
	Total	/100