Global Climate Change WebQuest

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Description: This is a model webquest to be used by science and social studies teacher candidates at The University of Akron that presents an interdisciplinary, global approach to Climate Change.
Grade Level: College / Adult
Curriculum: Science
Keywords: Climate Change, Social Studies, Science
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Introduction

The [USDA](#) recently released a new planting zone map, with a clear shift to the north ([Washington post](#), 27 January 2012). This is but one more example of how climate change is affecting people around the globe, with scientists stressing that human activity is a contributing factor. What is climate change? And what role should governments play to reduce its effects? Throughout this webquest, you will learn about global climate change and its impact on the health of people and environments. You will also examine the role of governments around the world to reduce its impact. After drawing on artifacts embedded within the webquest to answer these questions, you will be asked to share your research and offer recommendations to an inter-governmental panel on climate change.

Your Task
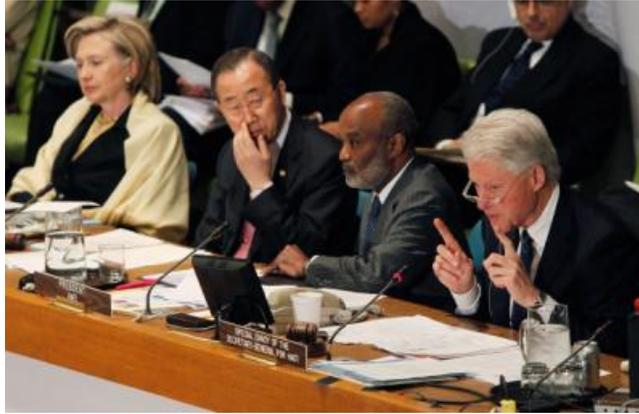
You are playing the role of representatives from different countries at an international summit on global climate change. Your task is to present information on the impact of global climate change on human health and the environment. Furthermore, all representatives should draw from research to discuss what the role of governments should be in controlling global climate change.

Global Climate Change WebQuest

Process
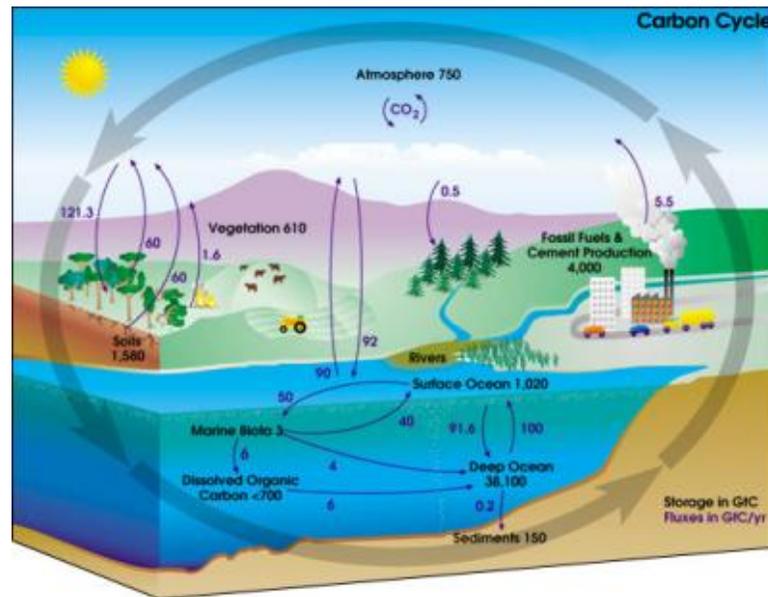
I. Science of Climate Change
A. You will begin the process by researching information to understand the science of climate change. Read the pages on the evidence of global climate change and its causes from NASA's Global Climate Change site , and watch the following video from National Geographic. Then, download the resource below entitled Handout 1: Global Climate Change.   You'll want to record your answers in the text document to answer the following questions:
1. What is climate change?
2. How do scientists know that the earth is warming?
3. What are the causes of global climate change?
4. What is the effect of climate change on the environment?
B. Next, you will investigate the effect of climate change on human health. Read the two articles on climate change and health from New England Journal of Medicine and World Health Organization:
1. Summarize the effect on human health.
2. What other issues do humans face as the earth continues to warm?

C.   Is there a controversy among scientists? Read the following position statement from the American Association for the Advancement of Science:

II. The Social Science and Global Citizenship

You will now begin to explore the ways in which climate change has been interpreted by civic organizations, governments, and individuals from around the world. To do this you must answer a few questions on the social science of climate change. You need to use the links embedded within each question to answer each question.

1. What will happen to the climate in different countries as the Earth continues to warm?
2. Can one country or region of countries address this problem alone? Why or why not? And, what are the consequences of global inaction?
3. There been a growing climate justice movement on this issue. Explain whether you think developed countries have a responsibility to reduce green house gas emissions faster than developed countries.
4. Opponents of action claim that such green house gas reductions will have devastating consequences on the global economic recovery. Do you agree? Why or why not?
5. What are the major international efforts underway to address global climate change? Provide examples of what different governments are doing. In particular, what existing regulations are in place in the US?

III. Intergovernmental Panel on Climate Change

Drawing from your conducted research, what are three policy recommendations that you can provide to delegates at an upcoming international meeting on climate change? Furthermore, what's your rationale for each of these recommendations? You can focus your recommendations on energy policy, international treaties, environmental policy, global investment and trade, etc.

Global Climate Change WebQuest Evaluation

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You will be evaluated on the completion of the questions above and the thoughtfulness of your answers. See the webquest rubric below.
In the near future: You will be working with a group to develop a webquest on a global issue that relates to science or technology. Examples of issues include: access to water, eugenics, food shortages, bioethical issues, etc. You can follow the example of the webquest that was provided here. Feel free to post your webquest using a wiki, Zunal, a Google site, etc.

Evaluation Rubric

Score

Part I: Response Questions: Science and Climate Change	The responses are inundated with spelling/grammatical errors and fail to draw from significant arguments embedded in the resources.	At least two or more responses draw from at least one of the provided resources. (6)	Each response uses correct spelling and grammar and draws from at least one of the provided resources. (8)	Each response uses correct spelling and grammar and draws from at least two of the provided resources. (10)	10
Part II: Response Questions: Social Science and Global Citizenship	The responses are inundated with spelling/grammatical errors and fail to draw from significant arguments embedded in the resources.	At least two or more responses draw from at least one of the provided resources. (6)	Each response uses correct spelling and grammar and draws from at least one of the provided resources. (8)	Each response uses correct spelling and grammar and draws from at least two of the provided resources. (10)	10
Part III: Intergovernmental Panel on Climate Change	The student fails identify or substantiate their recommendations to be offered to delegates at an upcoming intergovernmental conference on climate change.	Drawing from research within the webquest, the student identifies and substantiates at least one recommendation they would offer to delegates at an upcoming intergovernmental conference on climate change. (6)	Drawing from research within the webquest, the student identifies and substantiates at least two recommendations they would offer to delegates at an upcoming intergovernmental conference on climate change. (8)	Drawing from research within the webquest, the student identifies and substantiates three recommendations they would offer to delegates at an upcoming intergovernmental conference on climate change. (10)	10

Total Score: 30

Global Climate Change Conclusion

The above questions focused on what can be done about global climate change at the international government level. However, there are choices humans can make personally to reduce the impact of climate change. Compare the lifestyle of a typical adult in the US, and an adult from a developing country.

Go to the earth day ecological footprint and calculate your carbon footprint: http://www.earthday.org/footprint-calculator

Now investigate the lifestyle of a young adult in a developing country. Go back and take the quiz using their data. What is their ecological footprint?

Global Climate Change Resources

Resource for children: http://climate.nasa.gov/kids/index.cfm

In depth science: http://dels-old.nas.edu/climatechange/

Data from the World Resources Institute (great figures and charts):
http://cait.wri.org/
The Social Science of Climate Change: Policy Initiatives & Civic Action
Intergovernmental Panel on Climate Change (IPCC) reports: Work Group III
Press Release US climate policy initiatives:
http://www.pewclimate.org/states-regions/about

Pew Center for Climate and Congress:
http://www.pewclimate.org/federal/congress

Comparing Countries: http://www.pewclimate.org

International Negotiations and Climate Change:
http://www.pewclimate.org/international/negotiations

UN convention on climate change: http://unfccc.int/2860.php
Curriculum Materials:
Teaching Climate Literacy and Energy Awarness:
http://cleanet.org/clean/literacy/index.html

National Center for Science Education �Climate: http://ncse.com/climate

Readings on climate change: https://nice.larc.nasa.gov/?q=resources/articles-reading

Teaching about climate change:
https://www.facingthefuture.org/Curriculum/PreviewandBuyCurriculum/tabid/550/CategoryID/16/List/1/Level/a/ProductID/15/Default.aspx

http://www.ucar.edu/learn/1_4_1.htm

Epals project on climate change:
http://www.epals.com/projects/info.aspx?DivID=GlobalWarming_elements

Examples of and resources for teaching about global issues:

https://www.facingthefuture.org/Curriculum/PreviewandBuyCurriculum/tabid/550/List/1/CategoryID/16/Level/a/Default.aspx

http://www.un.org/cyberschoolbus/

http://www.choices.edu/

http://www.oxfam.org.uk/education/gc/curriculum/

http://www.nationalgeographic.com/xpeditions/lessons/16/g912/energydebate.html