

## Unit 4      Lesson Plan developed for Grade(s) 7

Title: Create A Climate Change Poster

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Applies to Lesson(s) 1-9 from <http://cimss.ssec.wisc.edu/climatechange/>

Objective: To allow students to organize information they learned about climate change and present communicate what they learned by creating a poster that they will share with their peers.

Total Time Expected: 1 class period—about 45 to 50 minutes

Overview: In previous lessons students learned what global warming was, who is at risk due to global warming, and how humans contribute to release of greenhouse gasses. This activity will allow students to organize what they have learned allow them to communicate their ideas in a poster presentation. Students will be encouraged to expand on their base of knowledge they already have by using internet sources.

Sequence:

1. Students will review their sorting activity from the previous lesson.
2. Students will use papers, markers, and colored pencils to design a poster to outline what they now know about global warming and climate change. They can make a poster based on answering these questions
  - A. How does global warming work?
  - B. What are the main greenhouse gasses?
  - C. How are humans helping to cause global warming?
  - D. What can humans do to help to lessen climate change?
  - E. What are the risks involved in Climate change?
3. Students will be directed to choose 2 or more questions to answer as they complete their posters. They should use the information that they recorded throughout the three previous lessons in their science notebooks to make up most of the content of their posters.
4. Students will also be provided an opportunity to look up further sources on the world wide web to find further in depth information on climate change. Attached to the bottom of this lesson is the list of web sources that were provided for this course. Students will be given time to refer to one or more of these websites to enhance the content of their posters.

Supplies or references required:

- Climate Internet Resources from Atm and Ocn 509 class
- Computers with internet access
- Poster paper, colored pencils, markers
- Science Notebooks

National Science Standards addressed:

C.8.2 Identify\* data and locate sources of information including their own records to answer the questions being investigated

A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems

## **Select Internet Sites for Climate Data & Climate Change Resources**

**NASA Global Climate Change** - <http://climate.nasa.gov/>

Includes vital signs, videos, articles and imagery

**NASA Global Climate Change Education** - <http://gcce.larc.nasa.gov/>

Features search engine that aligns educational resources with concepts outlined in the "Climate Literacy" document grouped by grade levels based on the lowest grade level applicable to that resource.

**NASA Earth Observatory** - <http://earthobservatory.nasa.gov/>

Features images, stories, and discoveries about climate and the environment that emerge from NASA research, satellite missions and climate models.

**CIMSS Educational Resources** - <http://cimss.ssec.wisc.edu/education/>

Features interactive weather and climate activities, (applets) complete curriculums, and student and teacher workshop information. CIMSS satellite imagery and software products are used by professional meteorologists, teachers and students worldwide.

**CIMSS Global and Regional Climate Change Course** -

<http://cimss.ssec.wisc.edu/climatechnage>

**Wisconsin Weather Stories Climate Activity**

[http://weatherstories.ssec.wisc.edu/stories/armistice\\_day/climate.html](http://weatherstories.ssec.wisc.edu/stories/armistice_day/climate.html)

**NOAA Climate Services** - <http://www.climate.gov/>

**United States Global Change Research Program** <http://globalchange.gov/>

USGCRP coordinates and integrates federal research on changes in the global environment and their implications for society.

Site features numerous climate research publications including ecosystem toolkits and two Great Lakes lesson plans

**Union of concerned scientist - [http://www.ucsusa.org/global\\_warming/](http://www.ucsusa.org/global_warming/)**

Features policy orientated articles and regional information about climate change, similar to USGCRP.

**Environmental Protection Agency (EPA) Climate Change Indicators -**

**<http://www.epa.gov/climatechange/indicators.html>**

Features a report and slide show with 24 environmental indicators describing trends related to causes and effects of climate change.

**The Story of Stuff - <http://www.storyofstuff.com/>**

Educational video explaining traditional product production and consumption before promoting ecological sustainability.

**Intergovernmental Panel on Climate Change (IPCC) - <http://www.ipcc.ch/>**

In 2007 the IPCC published its fourth comprehensive assessment of Earth's Climate. This publication and other resources are on this web page, including the Summary for Policy Makers based on the Working Group I Report "The Physical Science Basis".

## **Select Internet Sites for Climate Data Activities**

**My NASA Data <http://mynasadata.larc.nasa.gov/>**

Mentoring and inquiry using NASA Data for Atmospheric and earth science for Teachers and Amateurs ([MY NASA DATA](http://mynasadata.larc.nasa.gov/)) is a project to enable K-12 teachers and students, as well as citizen scientists, to explore the large volumes of data that NASA collects about the Earth from space. A main goal of the MY NASA DATA project is to remove the barriers (such as file size and format, and complicated computer tools) that prevent the use of authentic NASA Earth System Science data in the classroom or by the interested public. Among other features, this site includes a list of lesson plans related to climate change:

[http://mynasadata.larc.nasa.gov/ClimChg\\_lessons.html](http://mynasadata.larc.nasa.gov/ClimChg_lessons.html)

**Exploring Albedo with NASA NEO and ImageJ -**

**<http://serc.carleton.edu/eet/albedo/index.html>**

This is a toolkit where users access satellite images of land surface temperature, snow cover, and reflected short wave radiation (albedo) data from the NASA Earth Observation (NEO) Web site. They download, explore, and animate these images using

ImageJ, a public domain image analysis program from the National Institutes of Health (NIH). Then they utilize the Web-based analysis tools built into NEO to observe, graph, and analyze the relationship between these three variables.

### **NASA Earth Observatory Global Maps**

<http://earthobservatory.nasa.gov/GlobalMaps/>

The Earth Observatory's mission is to share with the public the images, stories, and discoveries about climate and the environment that emerge from NASA research, including its satellite missions, in-the-field research, and climate models. Global Maps are an excellent resource to view current and recent satellite images showing global views of what's happening on our planet. Enables exploration of how key parts of Earth's climate system change from month to month, including recommended related maps.

### **GLOBE (Global Learning and Observations to Benefit the Environment)**

[www.globe.gov](http://www.globe.gov)

The GLOBE Student Climate Research Campaign (SCRC) will engage students from around the world in the process of investigating and researching their local climate and sharing their findings globally. SCRC is comprised of learning activities, events, and research investigations. [http://www.globe.gov/explore\\_science/conduct\\_research/scrc](http://www.globe.gov/explore_science/conduct_research/scrc)

**GLOBE** reference with activities to study earth images like those found on NASA Earth Observatory ...

[http://classic.globe.gov/fsl/pdf/Earth\\_System\\_Poster\\_Activities.pdf](http://classic.globe.gov/fsl/pdf/Earth_System_Poster_Activities.pdf)