Unit 3 Lesson Plan developed for Grade(s) 6-8

Title: Lake Mendota Seasonal Ice Cover

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Applies to Lesson(s) 9 *from* http://cimss.ssec.wisc.edu/climatechange/

Objective:
Students will use Lake Mendota "Ice Off" data to produce a scientific explanation (claim, evidence, reasoning) about the changes in the "Ice Off" times over the last 150 years.

Total Time Expected: 1 day

Overview:
In small groups students will analyze a 20-year span of Lake Mendota "Ice Off" data, by calculating the mean, median and mode. Each group will produce a scientific explanation (claim, evidence, reasoning) to what they see happening in the data. All groups will then compare their findings to produce a scientific explanation for the 150 years and then look at the reasons for the changes they see.

Sequence:
- Review mean, median, mode
- Review "scientific explanations"
- Divide class into small groups, pass out Lake Mendota "Ice Off" data sheets and explain what the data represents.
- Work time for students. Write Scientific Explanations on large paper to be posted on the wall to be used for a gallery walk.
- Compare each 20-year segment of data to produce a scientific explanation for the 150 years of data.
- Discuss results and determine what could be causing the change seen.
- Show YouTube video clips listed in supplies

Supplies or references required:
- Lake Mendota "Ice Off" data sheets
- Calculators
- Large sheets of paper
- Markers
- 1958 Global Warming – "The Unchained Goddess" http://www.youtube.com/watch?v=0lgzz-L7GFg
- Global Warming 101 http://www.youtube.com/watch?v=oJAbATJCugs&feature=fvw

National Science Standards addressed:

A. Science as Inquiry - Science as inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science.

M.A.1 Abilities necessary to do scientificinquiry

c. Use appropriate tools and techniques to gather, analyze, and interpret data.

d. Develop descriptions, explanations, predictions, and models using evidence.

e. Think critically and logically to make the relationships between evidence and explanations.

f. Recognize and analyze alternative explanations and predictions.

g. Communicate scientific procedures and explanations.

h. Use mathematics in all aspects of scientific inquiry.

Related URLs or recommended reading:

Braasch, Gary and Cherry, Lynne, How We Know What We Know About our Changing Climate, Dawn Publications, Nevada City, CA, 2008

David, Laurie and Gordon, Cambria, The Down-to-Earth Guide to Global Warming, Orchard Books, NY, NY, 2007, pages 1-29

Johnson, Rebecca L., Investigating Climate Change, Twenty-first Century Books, Minneapolis, MN, 2009

1958 Global Warming – "The Unchained Goddess"
http://www.youtube.com/watch?v=0lgzz-L7GFg

Global Warming 101
http://www.youtube.com/watch?v=oJAbATJCugs&feature=fvw