

Unit 4 Lesson Plan developed for Grade(s) 6-8

Title: Understanding Climate Models

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Applies to Lesson(s) 13 from <http://cimss.ssec.wisc.edu/climatechange/>

Objective:

Students will understand how scientists are able to construction climate models from mathematical equations. Students will try to produce a simple equation for the “Ice Off” of Lake Mendota based on the data from the Unit 3 lesson. They will then predict the “Ice Off” for this school year.

Total Time Expected: 1 day

Overview:

After a discussion about models in general, students will watch the Understanding Climate Model movie from NASA. We will then look at the data from Lake Mendota “Ice Off” to see if, in small groups, they can construct a simple equation to predict the “Ice Off” for 2010-2011.

Sequence:

- Review models, in particular, scientific models.
- View the movie “Understanding Climate Models from NASA
- Review the data and claims from Unit 3, Lesson 9, “Lake Mendota Ice-off”
- Break into small groups and construct simple equations, taking into account only the patterns seen over the past 150 years.
- Predict the number of days of ice on Lake Mendota for 2010-2011. Post the predictions in the classroom.
- Compare predictions to actual data when available.

Supplies or references required:

NASA QuickTime movie – Understanding Climate Models.

http://earthobservatory.nasa.gov/Experiments/PlanetEarthScience/GlobalWarming/Movies/Mov07_CCM.mov

Calculators

Previous “Claims” from Unit 3 Lesson 9

Chart Paper

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 scientific inquiry

- 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:

Simple Climate Model from Unit 4 Activities

<http://cimss.ssec.wisc.edu/climatechange/modeling/lesson10/activity1.html>