

Renewable Energy

An Introduction to Greenhouse Gasses in the Atmosphere

Fall 2010

Name _____

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Introduction:

Possible resource for more information/general introduction on Global Warming (gives a little history, explains some of the difficulties in the data). This is a good site to visit while the data is being collected.

http://earthguide.ucsd.edu/globalchange/global_warming/03.html

Materials:

500 mL beaker, 7 Alka-Seltzer tablets, Logger Pro with temperature probe, Water, Plastic wrap, Rubber band, Ultraviolet lamp

Procedure:

1. Measure 100 mL of water into 500 mL beaker
2. Turn on LoggerPro
3. Change the time settings to 20 minutes with data taken every 15 seconds
4. Place temperature probes into water
5. Attach plastic wrap to top of beaker with rubber band
6. Place ultraviolet lamp directly over beaker
7. Run Logger Pro for 20 minutes
8. Save this data to a spreadsheet
9. Pour out heated water and replace with 100 mL of water
10. Place one Alka-Seltzer tab into beaker and quickly seal with plastic wrap
11. Before starting LoggerPro observe the reaction, what is happening to the temperature in the solution? Why does this take place?
12. Once the temperature reaches equilibrium begin taking LoggerPro data for 20 minutes
13. Repeat 9 with two and then four tablets
14. Graph
15. Fit the data to an exponential (or 1- an exponential) as indicated by your instructor and determine the settling (asymptotic) temperature (at time = infinity).
16. Compare the two settling temperatures and discuss.