



UNIT 5: CHEMISTRY OF CLIMATE CHANGE

Workbook 5.2: Climate Change

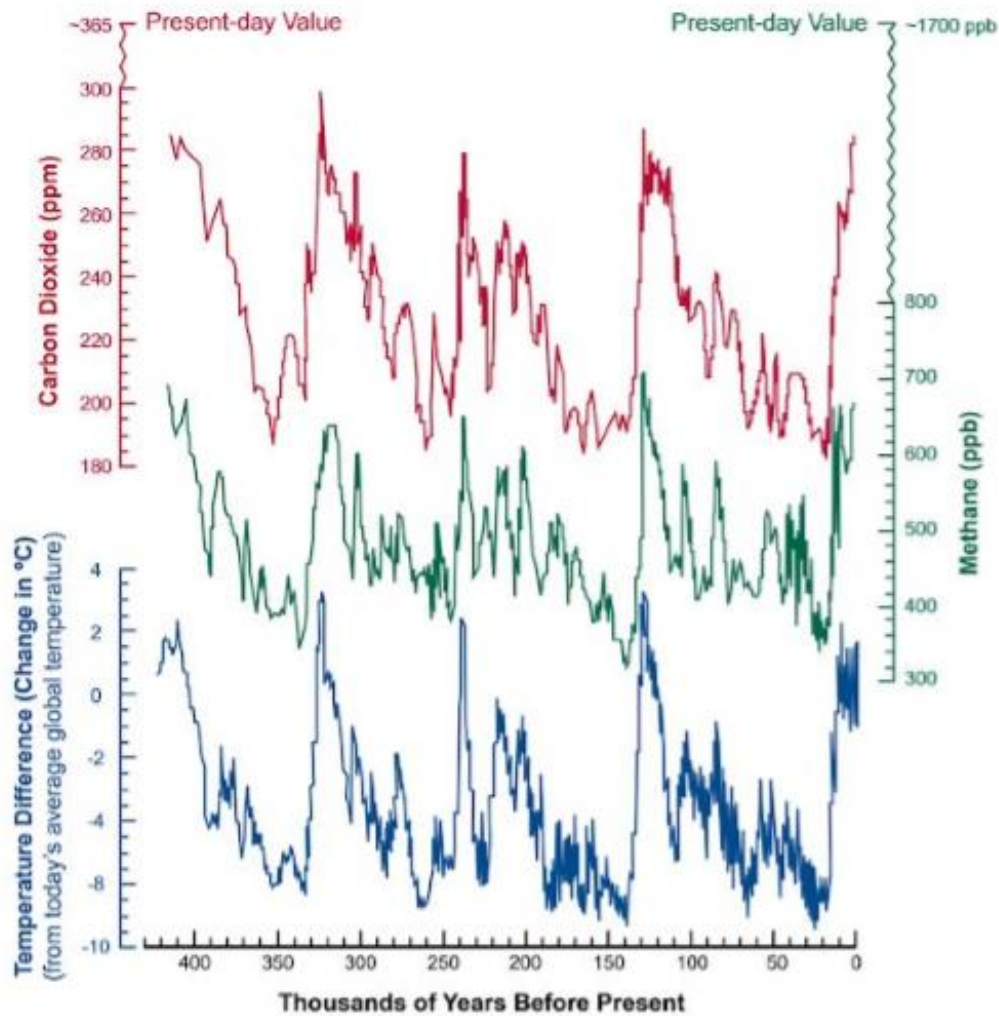
Lesson 12: Reading the Ice



GUIDING QUESTION: DESCRIBE THE FACTORS THAT LIMIT KNOWLEDGE ABOUT THE SCOPE AND POTENTIAL ENVIRONMENTAL EFFECTS OF GLOBAL CLIMATE CHANGE.

- **Do Now:**

Which of the four greenhouse gases we discussed (water vapor, carbon dioxide, methane, nitrous oxide) do you think is most damaging? Why?



The data to the left is from an ice core drilled at Vostok, Antarctica. The red line (top) shows the concentration of carbon dioxide there. The green line (center) shows the concentration of methane at the site. The blue line (bottom) shows the average temperature, plotted as the difference from today's average temperature (represented by the 0° C line).

Notes: These are the values measured in the ice cores.

0 on the Y-axis indicates the average temperature over time, not the actual temperature. Other numbers on the Y-axis indicate the difference from the average temperature.





NOTES

- Increases in GHGs can result in increases in global temperatures.
 - There is a direct relationship between changes in greenhouse gas concentrations and temperature changes.
- Concentrations of carbon dioxide and methane are at the highest in our available historical records from ice cores.
- There is a connection between GHGs and climate change.
 - An increase in GHGs does result in increased temperatures, which causes shifts in climate.

CLOSURE

- Answer Guiding Question on page 13:
 - Describe the factors that limit knowledge about the scope and potential environmental effects of global climate change.
- Benchmark #4 next block (5/2 & 5/3).
 - Workbook 5.2 due at the Benchmark.
 - Benchmark Review is your homework this week – due 5/4.
- Achieve 3000: “Making the World Clean and Safe” due Friday, 5/4.