Trees and Paleoclimate

Goals
After completing this investigation, you should be able to:
- explain what "proxy data" is and give examples of how proxy data provides information about climate of the past.

PART A: Records of the Past: Predictions for the Future

1. Define paleoclimatology and name three types of proxy data.

2. How is proxy data different from instrumental data?

3. What trends in the temperature record (from the past 150 years) do the proxy data and instrumental data *both* show?

PART B: Where Were the Trees of the Past?

1. Observe the image from 21,000 years ago. In what region of the country was the sugar maple tree located?

2. In the years between 12,000 and 8,000 years ago the maple tree gained abundance in the Midwest and Great Lakes region. Based on what you know about the climate of present day Vermont, what does that tell you about the climatic conditions of the time in this region?

3. Consider the change in the maple concentration in the past 500 years. What factors, *other than climate*, may have altered its abundance?

PART C: Pollen and Paleoclimate Lab

See student worksheet for this activity: Pollen and Paleoclimate for full instructions.

1. Based on the climatic preferences for the plant species in your sample, what type of climate do you think occurred during the time your sediment was deposited?

2. Compare your sample with the others in your class that had same sample number. Did you come to the same conclusions about the climate?

3. Share your findings about your sample with other teams. Record their data, remember the core at the bottom of the core (sample #5) is the oldest of the samples.

4. After you have recorded the climate descriptions for the rest of the class samples, write a paragraph describing the climatic changes in this area for the past 20,000 years. Hypothesize what you think contributed to the changes in climate during this time period.