Teacher Sheet 1

CRITICAL THINKING ACTIVITY:
THE STORY IS IN THE ICE!

OBJECTIVE: Students will:

- Describe how scientists estimate historical data from ice cores;
- Graph the results of an ice core investigation;
- Analyze the results of an ice core investigation.

MATERIALS:

- Student Sheets
- Graph paper
- Paper/pencil

PROCEDURE:

NOTE: The values in the attached table were extrapolated from data obtained by scientists studying the Vostok Ice Core. "Local temperature change" means by how much the temperature at that time was different from what it is today. For example, if the local temperature change 160,000 years ago was -9° C, this means that atmospheric temperatures at that time were 9°C *lower* than today. The term *ppm* means parts per million and is a unit of measurement for gas concentrations.

1. Read and discuss the information on Student Sheets 1-3
2. Go over the data on the table of **CO_2 CONCENTRATIONS AND TEMPERATURE** and explain what students will be responsible for.
3. Students should create 2 graphs to show how temperature and CO2 concentrations have changed over the last 160,000 years.
   - The X-axis should be labeled **"Years Before Present"** and given negative (-) values.
   - **"CO_2 concentration in ppm"** should be on the right Y- axis.
   - **"Temperature"** should be on the left Y-axis.

4. Student should complete the **ANALYSIS** questions.