

Teacher Sheet 1

LAB ACTIVITY:

WHAT IF POLAR ICE CAPS MELT?



OBJECTIVE: Students will:

- Simulate the melting of the polar ice cap and the effect it would have on the Earth's coastal regions;
- Compute the rise in sea level using mathematical formulas;
- Analyze the results of their investigation;

MATERIALS:

- **STUDENT ACTIVITY SHEET**
- Sand and pebbles
- Block of ice
- Ruler (mm)
- Calculator

PROCEDURE:

1. A few days before the actual activity is done, freeze several ice blocks and get enough sand and pebbles to fill up the pan.
2. Allow 1-2 days for the complete melting of the ice depending on the size of the blocks of ice.
3. Allow two 45 minutes periods for the activity.
4. Pass out **Student Sheets**.
 - Measure and record the volume of the block of ice, the water surface area and the depth of the water.
 - Students should record all this information on their activity sheets.
5. Using the formula below and following the directions on their activity sheets, students should complete the **OBSERVATION / CALCULATION** section.

$$\frac{\text{Volume of H}_2\text{O in Antarctic ice}}{\text{Area of Earth covered with water}} = \frac{\text{Volume of H}_2\text{O in ice block}}{\text{Area of pan covered with water at sea level}} = \text{rise in}$$

6. Students should then answer the questions in the **ANALYSIS** section.

