

INTERNATIONAL 2007 2008 POLAR YEAR

International Polar Day - Ice Sheets

13 December 2007

Who:

Anyone interested in the Polar Regions (Students, Teachers, Scientists, Artists, Travellers...).

What:

A global community event as part of the International Polar Year (IPY), focussed on Ice Sheets.

Why:

During the IPY, tens of thousands of scientists, engineers and technicians from around the world study the Polar Regions. Polar Days provide an interactive hands-on way to learn and to get involved.

Where:

Schools, education centres, and communities around the world.

When:

Thursday, 13 December 2007.

How:

Through a variety of science activities, art projects and other explorations of the role of ice and snow in our lives and on the planet. See the reverse side, and website, for specific ideas.



Learn more about Ice Sheets at www.ipy.org

International Polar Day -Ice Sheets

Large ice sheets covering Greenland and Antarctica hold most of the world's fresh water. Annual snowfall, compacted and compressed, builds the ice sheets, which can grow to a thickness of 3 km. Ice sheets can cover mountain ranges; in other places only the tops of mountains protrude. Ice sheets flow slowly, from plateaus to valleys and eventually to the ocean. Ice sheets can extend into the ocean as ice shelves. Once an ice sheet reaches the ocean, it cracks into icebergs and melts.

To Get Involved:

1. Do the Ice Sheet Experiment below, learn about polar exploration, or visit www.ipy.org for more activity ideas
2. Launch a Virtual Balloon showing your location at www.ipy.org
3. Check back frequently and see balloons go up around the world
4. Take part in IPY by learning about polar science, by becoming a polar ambassador, and by participating in future IPY Polar Days.

Ice Investigation: See how Ice Sheets Grow and Flow:

Materials per pair of students:

- Clay [for continent] [to make your own clay, see www.ipy.org]
- Small plate, bowl, or pan
- Cornstarch mixed with a little water [for ice sheet]

Directions:

1. Use clay to build a continent with features like mountains and valleys.
2. Place 5-6 tablespoons of cornstarch mixture in the location that the ice sheet will first form. Watch where the ice sheet moves.
3. Add more cornstarch mixture at the ice center.
4. Observe where the "ice sheet" moves.

Concepts:

1. The cornstarch behaves somewhat like a real ice sheet: it flows around mountains, it will flow over an ocean, it can cover the whole landscape.
2. The cornstarch does not show all aspects of a real ice sheet. Large ice sheets can have continuous flows from high point to low point and from surface to bottom. Often, ice at the bottom of an ice sheet, under the most pressure, moves fastest.
3. What would happen if your ice sheet flowed over a thin layer of liquid water?

For more discussion ideas, details of live connection to the poles, and other activities, see www.ipy.org .



Produced by the IPY International Programme Office
www.ipy.org

Images: Front - US National Science Foundation; Back - Byrd Polar Research Center