

# INTERNATIONAL 2007 2008 POLAR YEAR

## International Polar Day - Sea Ice

*21 September 2007*

### **Who:**

Teachers, students, scientists, artists, travellers - anyone interested in Polar Regions.

### **What:**

A global community event as part of the International Polar Year, focussed on Sea Ice.

### **Why:**

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

### **Where:**

Schools, education centres and communities around the world.

### **When:**

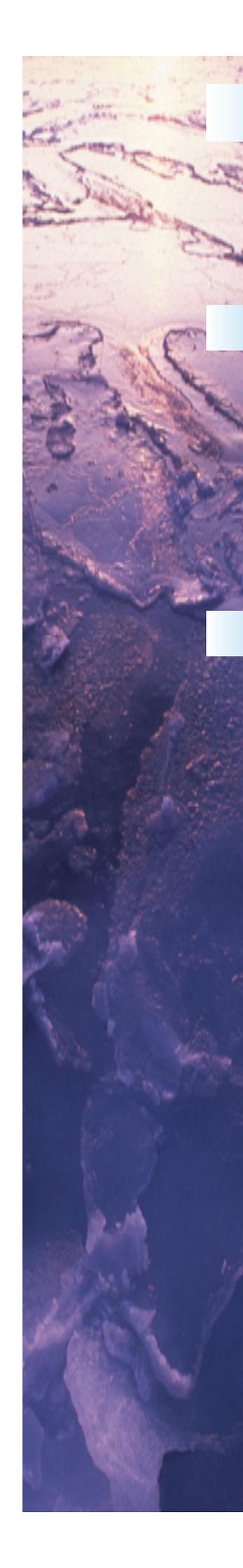
Friday, 21 September 2007.

### **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 the IPY website, for specific ideas.



Learn more about Sea Ice at [www.ipy.org](http://www.ipy.org)



# International Polar Day - Sea Ice

*A thin layer of sea ice covers most of the Arctic Ocean and surrounds most of the Antarctic continent. Sea ice plays an essential role in our planet's climate. It influences winds and currents, and sustains polar ecosystems and wildlife. Small changes in temperature have large impacts on sea ice.*

## To Get Involved:

1. Do the Sea Ice Experiment, below, or visit [www.ipy.org](http://www.ipy.org) for more activity ideas.
2. Launch a Virtual Balloon showing your location, at [www.ipy.org](http://www.ipy.org).
3. Watch the balloon launch page to see other balloons appear 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.

## Sea Ice Investigation:

### Materials per pair of students:

- Two blue ice cubes made with water and food colouring
- One cup of tap water
- One cup of tap water saturated with salt

### Directions:

1. Discussion: Draw what you think will happen when the ice cubes are placed in each cup.
2. Have pairs place one ice cube in each cup.
3. Do not touch or disturb the cups while the ice cubes melt.
4. Observe and watch carefully for at least 10 minutes, or until the ice has melted.
5. Record your observations, and draw the results.
6. Measure the temperatures at the top and bottom of the glasses.
7. Discuss.

For discussion ideas, and extensions to this experiment, see [www.ipy.org](http://www.ipy.org).

### Concepts:

1. Different densities as a result of temperature and salinity cause ocean currents which circulate water throughout the world's oceans.
2. In the freshwater glass, the only variable is temperature. Cold water is more dense than the warmer water, so the blue water sinks to the bottom. It gains heat energy as it moves through the warmer water column so as it moves along the bottom it begins to rise.
3. In the saltwater glass, the cold blue water melts and sits in a band on top of the warmer salt water, showing that even though it is much colder, it is less dense than the heavily saline water.

Produced by the IPY International Programme Office

[www.ipy.org](http://www.ipy.org)

Images: Front - E. Calvert, NOAA; Back - Norwegian Res. Council