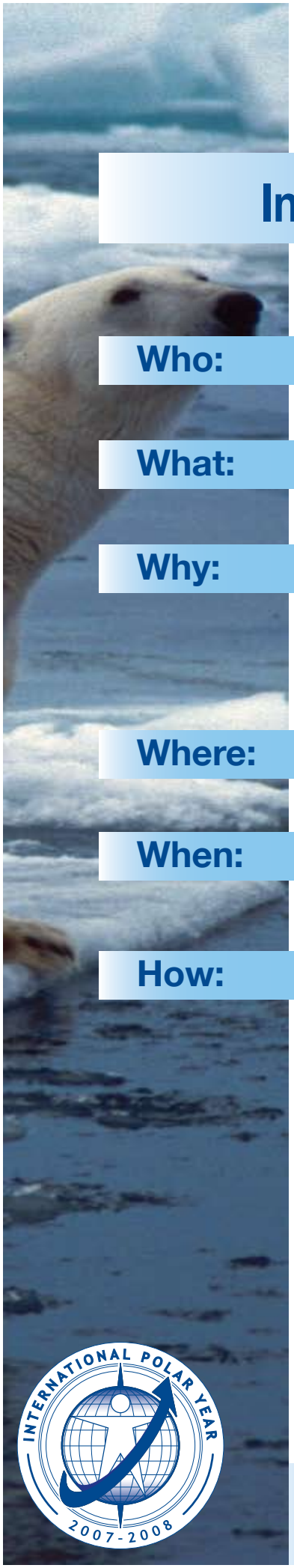

INTERNATIONAL 2007 2008
POLAR YEAR

International Polar Day - Polar Oceans

18 March 2009, and beyond

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 'Polar Oceans'.

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, communities, and education centres around the world.

When: Wednesday 18 March, and the following week.

How:

1. Do the activity on the reverse side, or visit www.ipy.org for more activity ideas.
2. Launch a Virtual Weather Balloon showing your location at www.ipy.org.
3. Check back frequently and see balloons go up around the world.
4. Talk with scientists during a live event.
5. Learn about polar science, become a polar ambassador, participate in future IPY Polar Days.

Learn more about 'Polar Oceans' at www.ipy.org

International Polar Day - Polar Oceans (2)

Cooling and sinking processes in polar oceans, and circulation of polar waters throughout the global deep ocean exert a powerful control on the Earth's climate. The polar oceans also play very important roles in the global carbon cycle, removing carbon dioxide from the atmosphere through chemical and biological processes. Polar oceans support globally-important fisheries and ice-dependent polar birds and mammals, including polar bears in the Arctic and penguins in the Antarctic. All of these important polar ocean functions have a critical relationship with sea ice; changes in the integrated polar ocean - ice system thus have far-reaching impacts.

"What's for lunch?" - Polar Oceans Food Web Activity

Materials: Card for each student or team; markers or crayons; reference materials about polar marine life; string.

Procedure:

- Create a list of polar marine life including whales, birds, seals, fish, krill, zooplankton and phytoplankton.. and polar bears (Arctic) or penguins (Antarctic).
- Each student or team chooses an organism and makes a large drawing, also listing its predators and prey.
- One student displays the first picture. Students add their organism if it is directly connected in the food chain. Indicate the direction of energy flow with an arrow. Continue building up the food web until all organisms are included and connected.

Another way: Attach pictures to the students and make connections with string. First student has a ball of string and passes it to any student connected in the food chain. Each states their role in the chain. The web continues to grow and weave itself until all students are connected.

Discussion ideas:

- Add species one at a time to allow discussion of relationships.
- Create Arctic and Antarctic food webs. Note the top and bottom of the food chain, and common species in the middle.
- Discuss the role of humans, krill, and factors effecting populations along the chain. Remove a species from the web that is affected by human activities. How does this affect the rest of the system?
- How will the food chain be affected by warming polar oceans?

An Alternate Activity - Ocean Circulation: To demonstrate how water density affects ocean circulation, half fill a clear-walled tank with fresh, room temperature water. Use food colouring to illustrate different water types. At one end, add a frozen blue 'iceberg' or cold, blue salty water. At the other end, gently add warm, red fresh water. Watch how circulation patterns emerge. Discuss how Polar Regions affect global ocean circulation.

Visit www.ipy.org for more Polar Ocean activity ideas.

Produced by the IPY International Programme Office, www.ipy.org
Images: Norwegian Research Council