Who lives at the North Pole?

Title: Who lives at the North Pole?
Curriculum Area: Science, Sociology
Year Level: Years 5-6

Lesson Background

Amazingly there are animals that can live on or under the ice pack. They include seals, polar bears, arctic foxes, whales, narwhals, walruses, fish, migratory birds and some insects. These animals coexist in a delicate and harsh environment to survive. Any interference to environment threatens their existence.

Inuit people have lived in the arctic for thousands of years, creating homes out of available materials and living off fish, caribou, seals and other creatures of the arctic. They have been successful because of their sophisticated understanding of their environment and have managed to stay in some instances when others have failed.

Global warming is changing the environment in the arctic. It is one of the places in the world which is showing the greatest impacts of climate change and there is a great global interest in the shrinking of arctic sea ice, changes to migration patterns and the effects on animals and birds as ecosystems change. The plight of the polar bear has captured the hearts of people all over the world as we hear stories about bears running out of food and needing to swim for miles as they search for ice to hunt from.

Outcomes

Students will gain an understanding of what life exists in the Arctic environment and how changes in the environment affects survival.

Preparation

- Explore available resources for arctic animals such as those listed.
- Consider the formats for presentation which would be available to your students.
- Familiarise yourself with resources such as 'footprint' calculators which are available online.
- Investigate animals from other areas and show how their existence is threatened eg elephants, pandas.
- Look at an advertising campaign designed to raise awareness of the plight of an animal such as the tiger.
- Gather information texts on the Inuit people and the geographical features of the Arctic Circle.

Student Activities

Student Activity 1. Artic Animals

Choose an animal that lives in the Arctic Circle and research information to share with the class. Include the ways in which the animal is vulnerable to changes in the environment. Students can choose their own format to present what they have learned.

Student Activity 2. Human Impact on the Arctic Environment

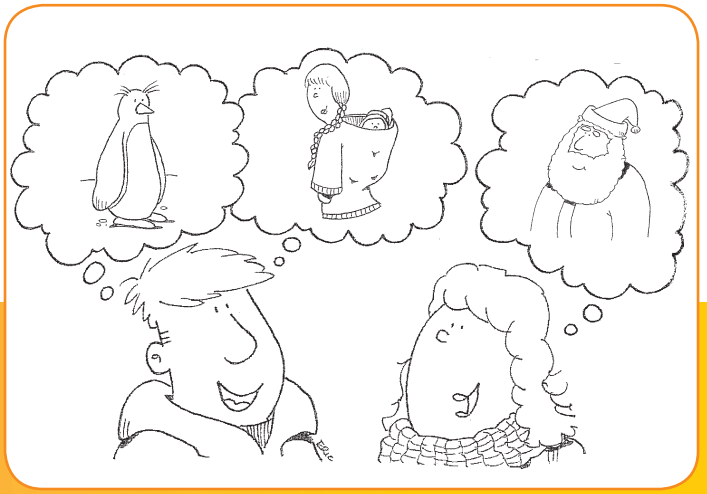
Discuss all the influences that humans have on the environment north of the Arctic Circle. They will investigate their own ecological footprint and the notion of global warming. Design an advertising campaign that will ensure that people have a greater awareness of how their actions effect our environment and specifically the animal they have previously studied.

Student Activity 3. Inuit People

Research the Inuit people and present information to the rest of the class about one aspect of their lives. Topics could include where Inuit people live, patterns of settlement, their traditional housing, clothing and hunting, Inuit games, Inuit art, the northern Canadian indigenous governed state Nunavut, Inuit legends, language or artifacts.

Student activity 4. Skills for Living in the Arctic

The Inuit people have been living in and travelling these lands for many years. They knew the routes to take and how to travel without modern technology to assist them. Inuit people travelled mostly in winter when the sea ice was frozen and they could use their dog sleds to get from one island to another. The flat frozen rivers, bays and channels were ideal for travel, though driving a dog sled in the long winter night had some challenges.



Compare modern and traditional Inuit culture, lifestyle and conditions. Find out how they live and travel in freezing cold conditions and what is different about how they do it now. Write a short story about an Inuit journey to visit another village.

Extension

- Fundraise money to adopt an endangered animal e.g. polar bear
- Find out what 'carbon neutral' means and how carbon trading works. What other methods are used to reduce our carbon footprint in our world?
- Use Kahootz to make an animation of the effect that the environment has on specific animals.

Resources

Information books on Arctic animals, Inuit culture.
An Inconvenient Truth (Al Gore) – DVD

Attachments

Bringing Home Our Rubbish (from the North Pole Expedition)
Icecap Animals – Expedition Notes

Links

Polar Bears
Polar Bears – description of characteristics, life patterns and habitat
http://www.seaworld.org/animal-info/info-books/polar-bear/index.htm

Polar Bears – including 'bear tracker', impact of climate change, Ice loss video
http://www.polarbearsinternational.org/

Polar bears – including 'adopt a bear', changing populations, impact of climate change
http://www.worldwildlife.org/species/finder/polarbear/polarbear.html

Indigenous Communities and Climate Change A New Challenge for Adaptation. http://www.sciencepoles.org/index.php?/articles_interviews/indigenous_communities_and_climate_change_a_new_challenge_for_adaptation/&uid=971

People, animals and the environment
The SciencePoles website provides an overview of polar science and research findings as well as recent and forthcoming developments across a range of scientific disciplines.
It is a key tool for the International Polar Foundation in aiming to bridge the science-society divide.

Three other complementary websites focusing on various aspects of the IPF activities are available:
IPF website, EducaPoles and ExploraPoles.
http://www.sciencepoles.org/index.php?/home/

Inuit Games
http://www.gamesmuseum.uwaterloo.ca/VirtualExhibits/Inuit/english/index.html

Teachers Centre – Inuit history, Art and other Traditions of the Inuit
http://www.virtualmuseum.ca/English/Teacher/inuit_history.html

Comparing Carbon Calculators
The reduction of greenhouse gas emissions has become one of the world's key goals and with impacts of global warming occurring at a faster rate than even the 'worst case scenario' modelling our need to do so is urgent.
Since the Bendigo Bank Greenland Expedition took place there has been a rise in interest in being able to work out carbon footprints using carbon calculators. The degree of sophistication of carbon calculators has increased but so too has the number of poorly designed ones available on the internet.
We have become more aware of the need to consider 'embodied' energy. This is the energy used to produce the raw materials, manufacture the items plus package, transport, maintain and dispose of all items we acquire or consume. Some calculators are including embodied energy in their calculations. A website that explains and compares different calculators is www.ethicalconsumer.org/CommentAnalysis/Features/CarbonCalculators.aspx

Several Calculators can be found on the Bendigo Sustainability Group website (links)
www.bendigosustainability.org.au