

Title: Discovering The Arctic: New Places, New Ideas, New Experiences

Grade Level: 6-8; 9-12 Curriculum Focus: Social Studies, Science

**Video Segments:**

[The Lives of Polar Bears](#) (02:17)

[The Arctic Region](#) (01:26)

**Program Description:** These video chapters explore life and adaptation in the Arctic. The arctic region is too cold for farming; for example, temperatures may rise above freezing just a few weeks a year. Consequently, the soil remains frozen in a permafrost condition. As for inhabitants, aboriginals live here—the *Inuit* and *Amer-Indians* are the primary inhabitants of the Arctic region. While they have modern homes and conveniences, many of the Inuit and Amer-Indians choose to hunt seal, fish, and other animals.

Many animals exist in the Arctic region, such as the *arctic fox*, *caribou*, and the *ptarmigan*. Because they hibernate for an extended period of time and sometimes give birth during this time, female polar bears lose up to 40% of their body weight after hibernation. The mother polar bear monitors her cubs and keeps them inside the den for 10 days because the cubs have not adapted to the intense cold of the Arctic. Inside of the den the temperature averages sixty-eight degrees—perfect for the cubs. After the 10 days, the mother polar bear takes the cubs out, and she begins the task of helping the cubs adapt to their environment and to teach them how to search for food. A polar bear's favorite food is *ring seals*. In order to locate the ring seals, polar bears must use the most complex and sensitive part of their bodies—their noses. With her nose that is uniquely adapted for the Arctic, the mother polar bear can smell a seal under 3 feet of snow over half a mile away. All polar bears have a *turbinated bone* in their noses that is especially designed for this survival skill. The turbinated bone is packed with *olfactory receptors*. But, the polar bears are not always as successful in their hunt as they would like, for just as they have special features to help them survive the Arctic, so do the ring seals. The ring seals can detect movement above the ice and thereby avoid danger and the polar bears. The people and the animals have all learned how to adapt and survive in this barren, cold climate.

**Learning Objectives:**

After viewing this video students will be able to:

- Compare and analyze societal patterns for preserving and transmitting culture while adapting to environmental or social change
- Understand an organism's behavior evolves through adaptation to its environment
- Understand that populations of organisms can be categorized by the function they serve in an ecosystem

### **Classroom Connections:**

**A:** Every creature—both human and animal—on the planet possesses physical features that aid in survival. The polar bear, for example, has a very unique nose that allows it to hunt and provide food for itself and its children.

Divide into five groups—each group taking a sense: sight, sound, touch, taste, and smell. Determine in your group how your chosen sense allows you to adapt to different environments quickly and efficiently. Be prepared to share your results with your class.

**B:** The Inuit and Amer-Indians have populated the Arctic for centuries; they are indigenous to the region. Conduct research on the Inuit and Amer-Indians so that you may know who they are and how they live. Learn about their history, their culture, their observances, their daily living. You may divide into groups to conduct your research; you may include images, articles, and video segments in your findings. When you have completed your research, present your results to your class. Be sure to include in the presentation what you found most interesting.

### **Target Vocabulary:**

**Aboriginal:** 1: being the first or earliest known of its kind present in a region  
<aboriginal forests> <aboriginal rocks> 2 a: of or relating to aborigines **b:** *often capitalized*

**Inuit:** 1): the Eskimo people of North America and Greenland (2): the Eskimo people of Canada **b:** a member of such people 2 a: ESKIMO 2 **b:** the group of Eskimo dialects spoken from northwestern Canada to Greenland

**Amer-Indian:** a member of any of the aboriginal peoples of the western hemisphere except often the Eskimos; *especially:* an American Indian of North America and especially the United States

**Ring Seal:** \*\*lives in the Arctic year round; light grey with black spots with small heads and large bodies; the black spots have lighter rings around them; they can remain under water for extended periods; can detect movement even when under the water and ice

**Caribou:** a large gregarious deer (*Rangifer tarandus*) of Holarctic taiga and tundra that usually has palmate antlers in both sexes —used especially for one of the New World — called also *reindeer*

**Ptarmigan:** any of various grouses (genus *Lagopus*) of northern regions with completely feathered feet

**Arctic Fox:** a small migratory Holarctic fox (*Alopex lagopus*) especially of coastal arctic and alpine tundra

**Turbinate bone:** shaped like a top or an inverted cone: one of usually several thin plicated membrane-covered bony or cartilaginous plates on the walls of the nasal chambers

**Olfactory receptors:** of or relating to the sense of smell

\*All definitions from *Merriam Webster Dictionary Online* (link to <http://www.merriam-webster.com/>)

\*\* Definitions are from video

### **Academic Standards:**

National Council for the Social Studies (NCSS) has developed national standards to provide guidance for teaching social studies. To view the standards online, go to <http://www.socialstudies.org>

- Understand the significance of studying culture and cultural diversity
- Understand global connections and interdependence

National Science Teachers Association (NSTA) has adopted The National Academies Press national standards to provide guidance for teaching science. To view the standards online, go to <http://books.nap.edu/openbook.php?isbn=0309053269>

- Understand population and ecosystems
- Understand diversity and adaptations of organisms