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Mini-unit

ANIMALS OF ANTARCTICA

ABSTRACT: This lesson is designed to introduce the animals of Antarctica and how they adapt to their environment and the changes of the seasons.

GRADE LEVEL: Kindergarten

UTAH STATE CORE CURRICULUM: Content Standard III Objective 1-Investigate changes in the seasons; d-Observe and describe changes in behavior of animals as the seasons change.

INSTRUCTIONAL TIME: 45 minutes

MATERIALS: computers, chart paper, markers, paper, markers, crayons

TERMINOLOGY:

Continent-one of the six or seven great divisions of land on the globe

South Pole-the southernmost point of the earth

Desert-arid land with usually sparse vegetation, land having a very warm climate and receiving less than 25 cm of sporadic rainfall annually

precipitation-a deposit on the earth of hail, mist, rain, sleet or snow; also the quantity of water deposited

scientist-a person learned in science and especially natural science

research-studious inquiry; investigation or experimentation aimed at the discovery and interpretation of facts

invertebrates-lacking a spinal column

crustaceans-any of a large class of mostly aquatic mandibulate arthropods that have a chitinous exoskeleton, a pair of often much modified appendages on each segment, and two pairs of antennae (includes lobsters, shrimps, crabs, wood lice, water fleas and barnacles).

INTENDED LEARNING OUTCOMES: Demonstrate a positive learning attitude, understand and use basic concepts and skills, communicate clearly in oral, artistic, written, and nonverbal forms.

BACKGROUND INFORMATION: Antarctica is a continent located at the South Pole that is 1 ½ times larger than America. It is a desert that receives less than 2% of precipitation per year but contains 70% of the earth's fresh water (in a frozen form).

Antarctica is drier, windier and colder than anywhere else in the world. Scientists live there and do research during the summer months but there are no inhabitants during the winter months. The summer months are so cold your breath will freeze as soon as

you let it out. The air also will instantly freeze your skin. There are two active volcanoes on the continent.

Animals in Antarctica include:

- Birds – penguins, albatrosses, petrels, cormorants and the arctic tern
- Mammals – seals and whales
- Fish – sea snails, ice fish, cod, crocodile fish, dragon fish and salmon sharks
- Insects – mites, midges, springtails
- Invertebrates – squid, cuttle-fish, octopus, sponges, sea stars, sea urchins, krill, zooplankton
- Crustaceans – crabs, shrimp, sea spiders

How animals adapt – Whales, seals and some birds are insulated by layers of fat. Some fish and insects have natural antifreeze proteins in their blood so they won't freeze. Some animals have compact bodies and thick skin that help them retain body heat. Some birds have waterproof feathers and insulating down. Some animals migrate to other areas from June until August. Some animals change color according to the season.

INVITATION TO LEARN: Gather the students together and read them "Counting Penguins" by Betsy Chessen and Pamela Chanko.

PRIOR KNOWLEDGE ASSESSMENT: After reading the above story, ask the students what they know about penguins, where they live and what other kinds of animals live around them. Ask them if they have anything they want to know about Antarctica. Guide the discussion toward topics the students have expressed interest in learning.

PROCEDURES:

1. Discuss Antarctica and its climate. Talk about the differences between winter months and summer months there. Antarctica is an important continent. It does not belong to anyone. Scientists from other countries can go there and conduct all kinds of research. They are working together to solve some of the world's problems such as global warming. As topics come up, introduce and define the new terminology.
2. Discuss the types of animals that live there. Display pictures to show them some of the animals.
3. Each student will pick an animal and predict how he/she thinks this animal will adapt to the changes of the seasons. Use chart paper to record the predictions.
4. The class will then use crayons or markers and paper to draw their animal in its habitat. While the class is doing this, small groups of students will work on the computers at www.enchantedlearning.com/school/Antarctica/Animalprintouts. This website contains pictures of animals that live in Antarctica. The students will click on each picture to learn facts about these animals.
5. After the students have completed these activities discuss what they have learned and compare findings to predictions. They will also have the opportunity to show their pictures to the class and share one new thing they learned.

EXTENSION: Conduct an experiment in which students put shortening on only one hand and then put both hands into ice water. Students can first predict and then compare the difference in how their hands feel.

ADAPTATIONS AND MODIFICATIONS: Students could work with partners to help them with the activities. Using pictures will help ELL students.

ASSESSMENT: This will take place in the closing discussion and while they are working at the computers. Students will answer questions about the changes of the seasons and how the animals adapt to them. Questions will focus on animal adaptations, facts about Antarctica and changes in the seasons. Animal pictures will be assessed according to accuracy of habitat and animal adaptations and characteristics.

Information for this lesson was found at:

www.enchantedlearning.com

www.learninghaven.com

<http://library.thinkquest.org>