



girl scouts

juniors
Exhibit Guide

THE ACADEMY
OF NATURAL SCIENCES
of DREXEL UNIVERSITY

Agent of Change

Science Heroine (page 50)

After reading about Dr. Ruth Patrick, visit the exhibit *What Eats What* on the second floor.

DR. RUTH PATRICK



Born in Topeka, Kansas, in 1907, Ruth Patrick spent most of her childhood in Kansas City, Missouri. Her interest in the natural sciences was shaped by her father's passion for the natural world. As a young girl, she would accompany her father and sister on collecting excursions into nearby woods.

"I collected everything: worms and mushrooms and plants and rocks," Dr. Patrick told an interviewer in 2004. At the age of seven, she received her first microscope. She was hooked.

Dr. Patrick obtained a degree in biology from Coker College, South Carolina, in 1929 and advanced degrees from the University of Virginia. Her long association with the Academy of Natural Sciences began in 1933 as an unpaid researcher and volunteer curator of the Microscopy Department. She was finally put onto the payroll in 1945.

Her work with diatoms informed Dr. Patrick that the species of these microscopic algae present in streams reflected the streams' environmental conditions. In particular, their variety and species composition could indicate the degree to which a stream was polluted. Moreover, she was aware that similar information about other organisms, such as aquatic insects and fish, could be used to

evaluate water quality. At a time when other scientists were just beginning to investigate how pollution affected single organisms or limited groups of organisms, she was analyzing the composition and diversity of a variety of algae, plants, and animals to determine the health of streams.

Why do you think Dr. Patrick's work was so important? Discuss with your troop.

Junior Badges

Animal Habitats



A **habitat** is the place where an animal or a plant naturally lives and grows.

Step 1: Find Out About Wild Animals

Attend one of our Live Animal Shows. What animal(s) did you meet? Why does it live at the Academy of Natural Sciences? Where does it live in the wild? Does it have an injury? Is it imprinted on humans? Or was it somebody's unwanted pet?

Discuss with your troop.

Step 2: Investigate an Animal Habitat

Look at the Desert of Diversity diorama in North American Hall. This diorama is set in the Sonoran desert, located in the Southwest of the United States. The Sonoran Desert has two rainy seasons, one during the summer, and the other in winter. Although rainfall is short, it is usually quite heavy, averaging 3 to 16 inches per year. The saguaro cactus in the diorama provides food and water to desert animals, including the collared peccary. What features do these animals share that help them survive in this dry and arid habitat? Some features you might list, for example: type of fur or skin, tail, type of feet, coloring, kind of legs, mouth, and ears.

My Observations:

Step 3: Create an Animal House

Visit *Outside In* and find the bald eagle's nest diorama. When a pair of bald eagles is ready to nest, the pair finds a large, sturdy tree. Bald eagles are large birds and their nests can weigh over a ton! That's why a strong tree is so important in order to support the weight of the nest. Adult eagles often nest near a body of water so that when the eaglets hatch, the adults have a close source of water and fish. Both male and female eagles actively participate in incubating the eggs and taking care of the eaglets as they grow.

Can you find two other dioramas in the museum that depict an animal parent caring for its baby?

Diorama #1

Diorama #2

Step 4: Explore Endangered Habitats

In North American Hall, you'll see two dioramas that are set above the Arctic Circle, the polar bear and the musk ox. Most of the Arctic consists of a deep ocean, covered in vast drifting packs of ice: the home of the polar bear. The northern-most edges of the continents are also within the Arctic Circle, creating the tundra habitat. No full-sized trees grow in the tundra. Those that do are dwarves. Tundra plants grow low to the ground as an adaptation to survive the long winters. Animals that live here include Arctic hare, lemmings, musk ox, and the snowy owl.

The Arctic is an endangered habitat. Temperatures in the Arctic have been warming twice as quickly as the global average. The summer extent of sea ice has declined drastically in recent years. As the sea ice melts earlier and freezes later, animals such as polar bears must search longer and farther to find areas to hunt for seals. More energy spent hunting means less energy for raising cubs. Changing levels of sea ice also affect global weather patterns.

As a troop, research and answer the following questions:

1. Why is the Arctic Circle endangered?
2. What is happening to the animals?
3. What are people doing to help the habitat?