



Webelos Exhibit Guide

THE ACADEMY
OF NATURAL SCIENCES
of DREXEL UNIVERSITY

Adventures in Science

Requirement 2: Visit the Academy's Fossil Prep Lab, located in Dinosaur Hall. You can watch as our staff, volunteers, and other skilled workers prepare fossils for further scientific study.

Brainstorm three questions to ask our lab staff. Write your questions and record their answers below.

Question #1

Answer:

Question #2

Answer:

Question #3

Answer:



Requirement 3: Read a scientist's biography

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 is so important? Discuss with your den.

Art Explosion

Requirement 1: Visit our Art of Science Gallery and take a look at the display. Carefully observe how the artist rendered the final product. What tools did they use in creating their work? What do you like (or what don't you like) about it?

Earth Rocks!

Requirement 1: Geology is the study of the earth. An important part of geology is the study of how Earth's materials, structures, processes, and organisms have changed over time.

The Academy's Mineralogy Collection consists of about 9,000 rare and incredibly beautiful specimens from mineral localities in Europe and North America. The collection houses important specimens from the 1800s as well as the oldest intact mineral collection in the Americas.

Requirement 6: Buildings like the Academy are constructed from many types of geological materials. How many of the following construction materials can you find at the Academy? Circle the ones you find.

- Marble
- Iron (used to make steel, and comes from iron ores such as hematite)
- Brick (made from clay, sand, and lime)
- Glass (made from sand)

Requirement 7b: Visit the Academy's Fossil Prep Lab, located in Dinosaur Hall. Ask the staff the following questions and write down the answers:

1. Why are you interested in geology and fossils? What types of careers are there for someone interested in geology?

2. What fossils are you preparing and why are they important?

3. What can you do to preserve our natural resources?

Into the Wild

Requirement 6: Visit *Outside In* on our third floor and complete the following charts. If you need help, ask any of our staff members and they will be glad to help!

| What type of animal has the following features? | | | | | Type of animal? |
|---|---------------------|--------------|------------------------------------|---|-----------------|
| Example | Wet, slimy skin | Cold Blooded | Vertebrates (they have a backbone) | Most lay eggs in water | Amphibians |
| A | Covered in feathers | Warm Blooded | Vertebrates (they have a backbone) | Have wings (But not all use them to fly!) | |
| B | Has 3 body parts | Cold Blooded | Have an exoskeleton | Have 6 legs | |
| C | Covered in scales | Cold Blooded | Vertebrates (they have a backbone) | Breathe with lungs | |
| D | Covered in fur | Warm Blooded | Vertebrates (they have a backbone) | Produce milk to feed their babies | |

Ask our staff what species in *Outside In* are native to Pennsylvania and write them below. Don't be shy! Our staff is very knowledgeable and friendly.

- 1.
- 2.
- 3.
- 4.
- 5.

Requirement 7: Visit our *What Eats What* exhibit on the second floor. This display illustrates a freshwater food chain. Take your time and notice the variety of plants and animals that are present in a single stream.

- Are there any fish with food in their mouths? How many can you find eating something? These are **consumers**.
- What are they eating?
- Can you identify the **producers** in this food chain? Producers are organisms like plants that make food using the energy of the sun.
- What is the top **predator** in this food chain? Are there other predators?
- Do you see any **decomposers**? Decomposers eat dead and decaying plants and animals.

Record the producers, consumers, and decomposers you found:

Producers

Consumers

Decomposers

Requirement 8: Describe one way that humans have changed the balance of nature in this ecosystem.

Requirement 8: List three ways you can help support this aquatic ecosystem. What ways can you keep it safe and healthy?

1.

2.

3.

Requirement 9: Enjoy our museum! Did you know the Academy of Natural Sciences of Philadelphia was founded in 1812? The Academy opened its doors to the public in 1828. The Academy was the first museum in the world to mount and display a dinosaur skeleton in 1868! Can you find the name of this dinosaur in our Dinosaur Hall?

First mounted dinosaur skeleton's name:



Into the Woods

Requirement 2: Did you notice any trees on the way to our museum? Many people can't believe that trees can grow in the city! Explore North American Hall and identify these native trees in our dioramas. Have you seen any of these near where you live?



Birch



Aspen



White Pine



Sassafras

Requirement 3: The dioramas display many species of native plants. Can you find the plants below in the North American Hall dioramas? Plants provide food for many species of animals. Can you find evidence in any of the dioramas that the plants are being used for food? Which ones?



White Trillium



False Solomon's Seal



Princess Pine/Lycopodium



Golden Rod



Sumac



Red Clover