



Cub Scouts Exhibit Guide

THE ACADEMY
OF NATURAL SCIENCES
of DREXEL UNIVERSITY

Backyard Jungle

Requirement 2: Visit North American Hall and take a look at the birds in the dioramas (*Hint: Look at the following dioramas: Moose, Kodiak Bear, and Desert of Diversity). Do some look familiar? That's because they are all native to North America!

Try your best to find at least two of the following birds:



© Garth McElroy/VIREO

Gray Jay



© GlennBartley/VIREO

Pacific Wren



© Brian E. Small/VIREO

Vermillion Flycatcher



© Brian E. Small/VIREO

Costa's Hummingbird



© GlennBartley/VIREO

Blue Jay



© Tom Yezo/VIREO

Greater Road Runner



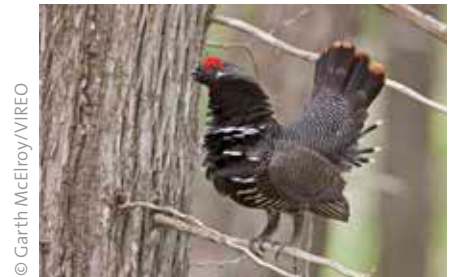
© Brian E. Small/VIREO

Black Billed Magpie



© Rick and Nora Bowers/VIREO

Gambel's Quail



© Garth McElroy/VIREO

Spruce Grouse



© Bob Steele/VIREO

Phainopepla



© GlennBartley/VIREO

Ruffed Grouse



© Rick and Nora Bowers/VIREO

Ladderback Woodpecker

Requirement 5: While walking through North American Hall, stop for a second and close your eyes. What do you hear?

Take a guess at what animals are making the different noises you hear and write your answers in the spaces below.

1. _____ 2. _____ 3. _____

Stories in Shapes

Requirement 1a: Look closely at the artwork in our Art of Science Gallery. What do you like about it? Is it the shapes and colors? Do the lines in it flow or are they straight? Is it messy or neat? Share your ideas with other Tigers.

Requirement 1b: Create your own interpretation of what you just observed. Go ahead! Give it a try!



Call of the Wild

Requirement 3: Venture into *Outside In* and fill out the charts provided:

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	

Now that you have identified the features of different types of animals, can you find a specific example of each in *Outside In*?

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

Council Fire

Requirement 2a: Visit the moose diorama in North American Hall. Notice all the vegetation around the animal. Most of the plants and trees are food for this cool animal!

Moose tend to graze on the leaves, bark, pine cones, twigs, and buds of trees and shrubs. Up to half of a moose's diet consists of aquatic plants, like water lilies. Moose usually eat taller grasses and shrubs because they are so large that bending over is a struggle. If you look at the diorama you can notice the tall grasses, called fireweed, and the large, branch-like alders to the right. These are excellent examples of what moose would need in their diet.

What do you think would happen if a person decided to build a highway near the moose habitat? What would happen to the plants? What would happen to the moose?

Paws on the Path

Requirement 7: Carefully observe the dioramas in North American Hall and find two examples of the following animals:

	Bird	Insect	Mammal
1			
2			

What features of the animals did you use to identify them? Discuss this with your fellow Wolves.

Code of the Wolf

Requirement 2a: Head upstairs to Africa/Asia Hall. Find the Okapi diorama. Is it a zebra? Is it a horse? It's neither! Okapi are closely related to giraffes. So, why the bold stripes and shapes? Believe it or not, the stripes provide camouflage in the dense Ituri rain forest of central Africa. These lively stripes camouflage the animal in the partial sunlight that shines through the forest.

Speaking of shapes, can you find at least three different types of shapes in this diorama? Can you find a triangle? A square? A circle? An oval? What do you see that has these shapes? What other shapes can you find?

Draw some of the features of the diorama that have these shapes below.



Collections and Hobbies

Requirement 3: Did you know that the Academy's collections boast around 18 million specimens? Head over to the top of the marble steps on the mezzanine level. Take a look at our "Marvelous Mollusks" exhibit, where we display a small portion of our shell collection. How are they organized? By species, size, or color?

Do you, or does someone you know, have a collection of things? How are they organized?

List what you collect here:

Digging in the Past

Requirement 1: One way to tell a dinosaur from other types of reptiles is by looking at the location of its legs. Dinosaurs stand with their legs directly under their bodies, allowing them to run faster. Other reptiles will have their legs coming out of their bodies, almost parallel to the floor. Head over to the Mezzanine and look for the footprints on the floor. Do a quick exercise and walk like a dinosaur, then walk like a crocodile (a different type of reptile).

What was different? Was one easier than the other? Who do you think would be able to run for a longer period of time?



Requirement 2: If you could create an imaginary dinosaur, what would be its name? Would it be a carnivore or an herbivore? Consider what its habitat would be. (Hint: A habitat is a place where an animal naturally lives.)

Dinosaur name: Carnivore/Herbivore Size:

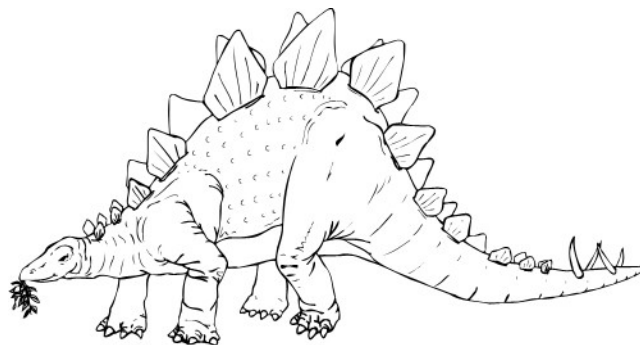
Color:

Habitat: Cool Traits:

1. _____ 2. _____ 3. _____

A Drawing of my dinosaur:

Can you draw a habitat for this stegosaurus?



Requirement 7: Mold Fossils vs. Cast Fossil

A **mold** forms when hard parts of an organism are buried in sediment, such as sand, silt, or clay. The hard parts disintegrate over time, leaving behind a hollow area with the shape of the animal.

A **cast** forms as the result of a mold. Water with dissolved minerals and sediment fills the mold's empty spaces. Minerals and sediment that are left in the mold make a cast.



Visit our Fossil Prep Lab (at the back of Dinosaur Hall) and speak to our staff about the type of fossils they are preparing. Are any of them casts or molds? What kind of tools are they using to uncover the fossils?

Requirement 6: Head over to the mezzanine and venture into *The Big Dig* to practice excavating fossil dinosaurs. Make sure you listen to *The Big Dig* staff while they give you some pointers and advice. Don't get frustrated if the fossils don't come out today. Remember, it usually takes a paleontologist weeks, months, and even years to dig up entire fossils!

Fur, Feathers, and Ferns

Requirement 2: Visit the third floor and take a careful look at the birds in the dioramas. Don't recognize them? That's because they are all extinct!



The **Great Auk** was a flightless bird that became extinct in 1852. Although it looks like a penguin, they are not closely related birds.



Sadly, in 1878 the **Labrador Duck** was the first endemic (found nowhere else) North American bird to go extinct.



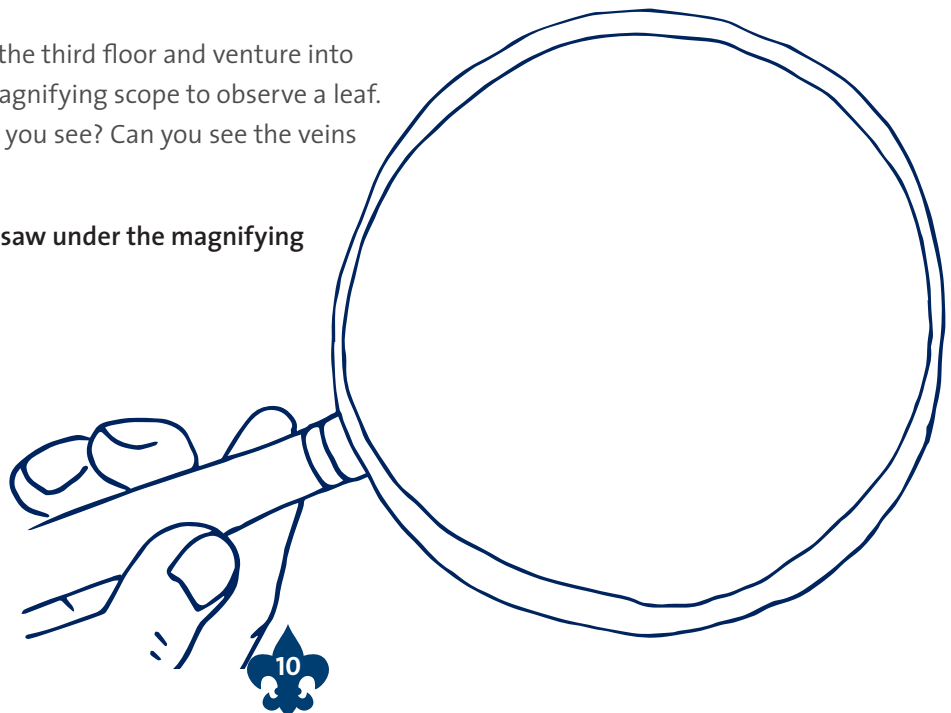
Passenger Pigeons lived in enormous migratory flocks until the early 20th century. Due to habitat loss and hunting, this pigeon went extinct in 1914.

Requirement 3: Attend one of our Live Animal Shows. What animal(s) did you meet? Why does it live at the Academy of Natural Sciences? Does it have an injury? Is it imprinted on humans? Or was it somebody's unwanted pet?

Share some of what you learned below.

Requirement 5: Head upstairs to the third floor and venture into *Outside In*. Use their super cool magnifying scope to observe a leaf. What do you see? What colors do you see? Can you see the veins of the leaf?

Take your time to draw what you saw under the magnifying scope in the box below.



Paws for Action

Requirement 1a: The Academy has had several famous Americans associated with its history. Read up on them and then visit their exhibits.



DR. RUTH PATRICK

More than 60 years ago, Dr. Ruth Patrick created a powerful vision for how science could help society protect environmental quality and founded a new program (the Department of Limnology) at the Academy of Natural Sciences in pursuit of that vision. 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. You can find her work on the second floor, in the *What Eats What* exhibit.



ROBERT PEARY

In 1891, a team of explorers led by the famed Robert E. Peary began an expedition to Greenland under the sponsorship of the Academy of Natural Sciences. This was a great achievement for Peary, giving him his first full-scale experience in the Arctic and preparing him for his quest to reach the North Pole. The team planted an American flag in the far north of Greenland on July 4, 1892. You can find this very same flag on the second floor, directly across from the library.

A Bear Goes Fishing

Requirement 1: Visit our *What Eats What* exhibit on the second floor. Take your time and notice the variety of animals that are present in a single stream. Big fish eat little fish, which in turn eat smaller fish, which eat bugs, worms and microscopic animals, which eat algae and bits of plants. Plants don't eat like animals do, but instead get their energy from the sun. Energy keeps the ecological community alive, and the flow of energy from one organism to another is called a food chain.

Sketch part of the food chain displayed in *What Eats What* below.

Draw three fish found in this exhibit and record what they eat.

Type of fish:

What does it eat?:

Type of fish:

What does it eat?:

Type of fish:

What does it eat?: