Level 2: Taxidermy Case

Walk into the Discovering Life Hall and stop at the first case you see which has a bear on the right side of the case.

Q1: What are some observations you can make about this bear? What type of bear is this?

Even though the color of its fur is a shade of brown, this type of bear is called a black bear. It's smaller than another type of bear you might know, the grizzly bear.

Q2: What characteristics do you see that may help this bear survive in its habitat?

This bear has sharp claws. Black bears are particularly good at climbing, and their claws and muscular bodies help them do this. It is useful for these bears to be able to climb so that they can more easily find shelter, such as when hibernating during the winter, and food, such as berries. This bear eats both plants and other animals with its pointy teeth. (TEKS K.9B, K.10B, 1.10A, 2.10A)

Q3: What type of environment do you think this bear might have lived in?

If students need some ideas, you can allow them to explore the three ecosystem dioramas at the back of the Discovering Life Hall. Black bears are best suited for the Pineywoods habitat.

In addition to commonly living in forests, their thick fur allows these bears to survive in colder environments. They live throughout parts of most of North America, including Alaska and Canada. Look at the picture below the bear to see an image of a bear and her two cubs foraging for food in their environment. The cubs look and behave similarly to their parents in ways such as what they learn to eat.

Making Connections: What parts of this black bear are the same or similar to parts on the *Alamosaurus*? What parts of the black bear are different from the *Alamosaurus*?

Level 2: Pufferfish Tank

As you walk from the Discovering Life Hall into the Being Human Hall, you will see a fish tank containing a pufferfish. Enjoy watching this fish, but please don't touch or tap on the glass.

Q1: What type of living organism(s) do you see in this tank?

Q2: What can you learn about this fish from how it looks?

This pufferfish, a fish that can inflate itself, is a fish of course. This type of fish usually would inflate itself if it got scared and wanted to look bigger in order to scare something else. Fortunately, this pufferfish doesn't scare easily so it won't inflate itself even if you try to scare it by tapping on the glass. Sometimes other living organisms may be visible in the tank. (TEKS K.9B, 1.10A, 2.10A)

Are the pufferfish's eyes big or small? This fish uses its big eyes to hunt for food. Look at the bottom of the tank to see shells from one thing this fish eats. Those shells are from hermit crabs. The Museum team also feeds this fish other foods, like small shrimp. (TEKS K.10B)

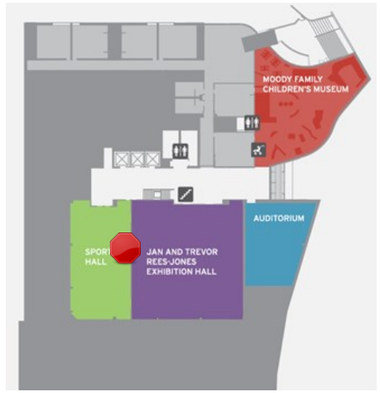
Q3: What types of things do you think might impact how this pufferfish behaves in its habitat?

Instead of tapping on the glass, see if you can get the fish to follow you around. Place your hand or a shiny object near to the glass and move it in a path for the fish to follow.

AMAZING FACT: The male white-spotted pufferfish builds a "nest" in the sand. These nests are round in shape and can be as big as 6 feet across. Just like birds, female pufferfish lay their eggs in these sand nests.

Lower Level: Run Wall

Just after you walk into the Lamar Hunt Family Sports Hall, you will see an area on your left where you can line up to race one of a few different living organisms. As you are waiting in line to race or after you race, talk about the students' observations of the living organisms.



Q1: What living things did you see move?

Q2: Why do these living things need to move fast?

Tylosaurus is one type of reptile called mosasaurs that lived at the time of the dinosaurs. It used its tail to swim quickly through the water to hunt other living things to eat. *T. rex* is a dinosaur that could have used its long legs to quickly chase animals to eat. A cheetah is an animal that uses its light, long body to very quickly chase animals to eat. Humans can use our speed to run to or from many different things. (TEKS 1.10A, 2.10A)

Q3: What do you think made the winner of your race the fastest? Could you do anything to make yourself faster if you were to race again?

Humans have strong bones, flexible feet, and a leg structure that allows us to run upright. Are there other animals that run upright?

AMAZING FACT: Cheetahs can reach a top running speed of 112 km/h in only 3 seconds! This makes them the fastest land animal in the world.

K–2nd Grade Life Science

Perot Museum Chaperone Guide

Exploration Question

How do animals and plants stay alive in their habitats?

Per[ ]t
Museum of Nature and Science

Navigation & Background

Organisms are living things. All organisms on Earth, whether plant, animal, fungi, bacteria, or protist, whether single-celled or multi-celled, adapt to the environment in which they live.

Adaptations are structures and processes that exist in a population of organisms that help those organisms survive in their environment. Survival in the natural world means an organism is able to grow to an age where they are able to reproduce and pass their DNA on to the next generation. Adaptations do not occur simply because an organism needs them. For example, a beetle will not turn blue because its environment changes to have more blue foliage.

Adaptations are important to populations as they interact in their environments. An adaptation that was once quite advantageous in a specific environment may be less advantageous if an environment changes. For example, tan colored mice may have advantage over darker brown mice in a light, sandy environment because they are better camouflaged from predators like hawks. However, if the area experiences a series of volcanic eruptions resulting in more of the ground being covered in dark colored lava flows, the tan mice will be at a disadvantage because they will be less camouflaged and more easily hunted by predators.

Adaptations may be structural features of an organism such as fur or feather color, behaviors such as nest building, or physiological such as hormones.

Welcome to the Perot Museum of Nature and Science!

Use this guide to facilitate your students' educational journey through the Museum exhibits.

Each stop on your journey has probing questions, indicated in blue, that you can ask your students in order to spark their thinking.

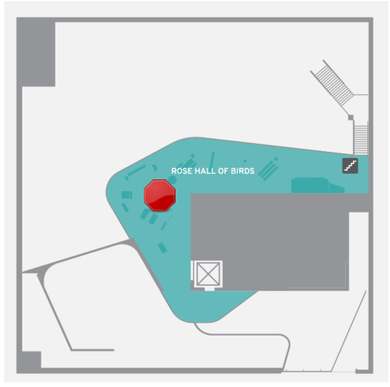
Background information, indicated in black, is provided to help you understand the science behind each exhibit.

Connections to other Museum exhibits and Amazing Facts are indicated in green.

Navigation information, indicated in red, is designed to help you locate each exhibit.

Level 4M: Nest Displays

Find the nest displays at The Cycle of Life and the Nurturing Young sections of the Rose Hall of Birds.



Like all living organisms, birds create offspring. Offspring means the babies of an animal. Look at the nests and pictures of birds, their eggs, and the young birds that come out of those eggs.

Q1: From what materials are the nests made?

Most of these nests are made of different plant materials, either the twigs of small branches from trees or even grasses. Birds that live in cities may also use other materials they find, like plastics. (TEKS 1.9C)

Q2: Why do most birds build their nests in high places like trees?

Birds choose locations for their nests that will likely be safe. Look up at the osprey nest. These birds make their nests in high places. High places help keep the osprey's eggs and chicks away from predators. Due to the destruction of trees, humans have chosen to help osprey survive by building stands for the osprey to safely build their nests. Without these stands, an osprey might try to build a nest on an telephone pole, which is unsafe and could put their eggs and chicks in great danger of not surviving.

Q3: Explain why the nests of different types of birds look different from each other?

Nests are built by birds to hold and protect their eggs and young chicks. The eggs of different types of birds are different shapes and sizes, so the nests are also different shapes and sizes. (TEKS K.9B, 1.10A, 2.10A)

AMAZING FACT: Ruby-throated hummingbirds have nests about the size of a thimble. That's about the size of the tip of your finger.

Level 4: Sauropod Footprint

As you enter the T. Boone Pickens Life Then and Now Hall on Level 4, you will see a large fossil on the ground. Make observations about this fossil by touching the fossil with your hands and using your eyes to see the colors, textures, and details.

Q1: What do you see in this fossil?

Q2: What type of living thing made this footprint? Was it big or small?

The animal that made this footprint was tall and must have weighed a lot because the footprint is large and deep. The dinosaur that made the footprint looked similar to the one you can see in the image on the screen behind the footprint.

Walk around the screen into the hall and look up at the tallest dinosaur in the hall. This dinosaur, named Alamosaurus, would have left footprints like/similar to the one you just saw.

Q3: Why do you think this dinosaur was so tall? What do you predict this dinosaur ate?

Alamosaurus used their tall height to eat plants, like leaves on trees. They were consumers, meaning they were dependent on other organisms for food. In addition, their large size aided in scaring off predators, such as *T. rex*. *Alamosaurus* had adaptations other than size that helped it survive. (TEKS 1.10A, 2.10A)

To examine Alamosaurus' head more closely, use the elevator with the bird on it or the stairs at the back of the Life Then and Now Hall to go to the Bird Hall on Level 4M. Look through one of the portholes in the wall by the Alamosaurus to more closely see the teeth it used to pull leaves from plants.

Alamosaurus had flat teeth made for chewing. This indicates that *Alamosaurus* was an herbivore and ate plants. (TEKS K.9B)

AMAZING FACT: Count the number of *Alamosaurus* neck bones fossils on display next to the *Alamosaurus* cast. The *Alamosaurus* had seven neck bones which is the same number of neck bones that both giraffes and humans have.

Level 3: What Can You Learn From a Tree?

As you walk from the elevator landing into The Rees-Jones Foundation Dynamic Earth Hall, walk into the far right area of the Dynamic Earth Hall. Find the large slice of a tree trunk.

Ask students to examine the piece in front of them by looking at it and gently touching it.

Q1: What type of living organism is this?

This is part of a tree. Specifically, this is a slice from the trunk of a tree. (TEKS K.10B, 1.10B)

Q2: Compare and contrast this tree trunk to another part of a tree, such as a leaf.

A tree trunk carries water from the tree's roots in the ground up to the rest of the tree. The trunk also supports the heavy branches throughout the rest of the tree. This tree had a relatively thick trunk, so it likely had lots of sturdy branches and leaves. Leaves on a tree use a gas in the air called carbon dioxide and the water brought to them by the trunk to make food for the tree. (TEKS K.10B, 1.10B, 2.10B)

Q3: What other predictions can you make about this tree?

The rings on tree trunks can tell us an approximate age for the tree. Try to count the number of rings on this tree trunk.
During its first year of growth, the tree quickly grew multiple rings, but the number of rings gives a good estimate for the number of years that the tree lived.
Trees grow continuously at different rates throughout the year. For example, trees grow more slowly in the late summer and fall as the hours of daylight become shorter. During the cooler winter months, the slower growth rate appears as thinner and darker parts of each trunk section.
You can also learn about how rainy the environment was during specific years, by looking at the thickness of a section. The large amount of water in a rainy season allows the tree to grow faster, causing the thicker rings. Look for a thick section that indicates a rainy year. (TEKS K.9B, 2.9B)

Making Connections: Do you think the Alamosaurus you saw on Level 4 might have eaten a tree like the one represented by this tree trunk? Why do you think they could or could not?