Level 3: Weather Station & Tornado Model

As you walk from the elevator landing, you will enter the Dynamic Earth Hall. The Weather Station and Tornado Model will be to the far right on the back wall in this Hall.

Q1: As a meteorologist, or weather reporter, how would you report the weather today?

Weather that you might be experiencing now might be different than what you experienced the day before, or even an hour before! Weather is always changing because our atmosphere is always moving. (TEKS K.8A, 1.8A)

AMAZING FACT: At any given moment there are 1,800 thunderstorms happening on Earth.

Q2: How would you tell people to dress for the weather today? Do they need a rain coat or a sweater? Should they put on sunglasses? What kind of shoes should they wear?

For help, consult the Live from Planet Earth Display. (TEKS 2.8B)

Q3: Although we can't always see the air around us, how do we know that it is there? Look at the Tornado Model to help you answer.

We can feel it when it moves (wind) and when the temperature changes. (TEKS 1.8D)

AMAZING FACT: An average cumulus cloud weighs more than 70 adult *T. Rex.*

Level 3: Mineral Cases

As you leave the elevator, turn to the right to find the Lyda Hill Gems and Minerals Hall. Enter the Hall through the gold cube shaped crystals on the ceiling. Examine the cases throughout the Hall.

AMAZING FACT: Peanut butter can be converted into diamonds.

Q1: Can you list the different shapes of minerals you see in this hall?

Q2: Can you identify the different colors of minerals you see in this hall?

Q3: Can you describe the different textures of minerals you see in this hall?

A mineral is a naturally occurring, inorganic, crystalline solid that is made out of a specific chemical composition. Minerals are also the building blocks of rocks. The minerals you see in this hall grow in a variety of shapes, sizes, colors, and textures due to their chemistry and the environment in which they formed. Describing the physical properties of minerals and other earth materials is an important skill that scientists use to sort and identify these materials and determine the ways they can be used! (TEKS K.7A, 2.7A)

AMAZING FACT: The minerals our bodies need are different from the minerals found on Earth. Our body actually needs the elements found within the minerals.

Level 2: Texas Ecoregion Dioramas

As you exit the elevator landing, you will enter the Discovering Life Hall and proceed to the dioramas.

Q1: What do you think the weather patterns are like in each of these three ecoregions?

The desert ecoregion of west Texas experiences relatively low rain fall and warm daytime temperatures during the year. The Pineywoods ecoregion in east Texas experiences more rain than the other two ecoregions modeled in this Hall. (TEKS K.8A, 2.8A)

Q2: Which ecoregion do you think experiences the warmest temperatures? How can you tell?

AMAZING FACT: The Texas tortoise is a protected species that love the fruit of the prickly pear cactus.

Q3: Which ecoregion do you think experiences the most rain? How can you tell?

The Pineywoods ecoregion in east Texas experiences more rain than the other two ecoregions modeled in this Hall. You can tell by the large, green plants that grow in this environment. (TEKS 1.8A)

AMAZING FACT: Armadillos always have four babies at a time! The quadruplet babies develop from the same egg and are identical, all male or all female!

K–2nd Grade Earth & Space Science

Perot Museum Chaperone Guide

Exploration Question

What patterns can you observe on Earth and in the sky?

Per[ ]t
Museum of Nature and Science

Navigation & Background

While it may appear as though these exhibits are unrelated, they actually all have a connection—PATTERNS! When we examine our solar system, we observe that the planets travel in an elliptical pattern, known as an orbit, because of the gravitational pull that exists around the Sun. The gravitational pull nearest the Sun is greater so smaller, rockier planets are closest to the Sun while larger, gaseous planets are farther away. The Moon's gravitational pull affects the tides here on Earth. The water in the ocean affects the weather of nearby land masses by bringing temperatures more in line with the temperature of ocean currents as they move about the Earth. Warm ocean currents bring warmer and rainier weather, and cold ocean currents bring colder and drier weather.

If we focus on Texas, we observe how weather patterns, such as rainfall and temperature cycles, vary throughout the state depending on what part of Texas is affected. Texas is divided into different ecoregions that are characterized by specific ecological patterns, including soil type, flora and fauna, and climatic conditions. From the Blackland Prairie ecoregion, which experiences moderate temperature and rainfall, to the desert ecoregion of West Texas, with its low rainfall and warmer temperatures, Texas has a wide range of weather across its ecosystems. One of the largest desert ecosystems in the world, the Chihuahuan Desert, dominates the landscape in western Texas.

Minerals are naturally occurring, inorganic, crystalline solids that are made out of a specific chemical composition. This means that minerals are substances that are formed naturally in the Earth and can be made of single chemical element or a compound. Minerals are the building blocks of rocks. If we factor in physical weathering, minerals are broken down through direct contact with weather-related natural occurrences , such as heat, water, ice and pressure. We can also determine that because of their particular chemistry and the environment in which they are formed, a variety of crystal shapes, sizes, colors, and textures are created.

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.

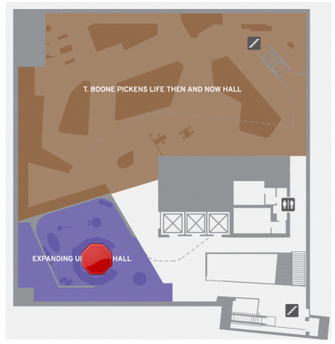
Background information, indicated in black, is provided to help you understand the science behind each exhibit.

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 4: Journey Through the Solar System

As you leave the elevators, enter the Expanding Universe Hall. Walk into the large silver structure and take a Journey Through the Solar System.



Q1: How do the planets move through our solar system?

Planets move around the Sun in elliptical paths. This orbit is due to the gravitational pull that the Sun has on the planets, and vice versa.

Q2: How does the size of the planets change as you travel further from the Sun?

Planets closest to the Sun are relatively smaller and rockier than the gas giants farther from the Sun. Why do you think that is? Heavier, denser materials are pulled closer to the Sun, as the lighter, more gaseous materials are concentrated further from the Sun and have condensed into gassy planets.

AMAZING FACT: If put in a big enough bathtub, Saturn would float.

Q3: What objects in our solar system have you seen from Earth?

We see the Sun and moon every day, and a few planets at night. With the help of a telescope, sometimes we can even see moons orbiting other planets (such as Jupiter and its four largest moons), as well as the occasional meteor or comet! We also see objects that are not a part of our solar system, such as distant stars that light up the night sky. (TEKS K.8C, 1.8B, 2.8C)

AMAZING FACT: Think it's hot here? It can reach up to 864 degrees Fahrenheit (462 degrees Celsius) on Venus.

Level 4: Planet Earth

Staying within the Expanding Universe Hall, you will continue to the Planet Earth Panel. When facing the Journey Through the Solar System exhibit, the Planet Earth Panel will be directly to the right.

Q1: Look at the figures of Earth on this panel. What is the cause of Earth's seasons?

Earth orbits the Sun on a tilted axis. This tilt, in combination with the elliptical shape of the Earth's orbit, results in the variations of seasons that we experience throughout the year. (TEKS K8.B)

AMAZING FACT: You are never really standing still on Earth- you are actually traveling at 2.7 million miles per hour through the universe.

Q2: When we experience summer, where is the Earth relative to the Sun?

When we in the northern hemisphere experience summer, the Earth is actually furthest from the Sun but tilted toward the Sun.

Q3: When we experience winter, where is the Earth relative to the Sun?

During winter, the Earth is closest to the Sun along its elliptical path, but tilts away from the Sun, resulting in more indirect sunlight striking the surface. (TEKS K.8C, 1.8B, 2.8C)

AMAZING FACT: The North Pole has one sunrise each year.

Level 3: Rocks of Texas

The Rocks from Minerals display is on the left side of The Rees-Jones Foundation Dynamic Earth Hall as you enter from the elevators. Look for the large display in the shape of Texas.

Q1: Observe the different types of rocks found around Texas. What textures, colors, shapes, and sizes do you see?

Rocks come in many shapes and sizes, and form in many different ways.

Q2: Describe how the rocks change across the state. Are there any similarities/differences as you move around Texas?

Texas has a wide variety of rocks, including sedimentary, igneous, and metamorphic rocks.

AMAZING FACT: Scientists have identified over 700 varieties of igneous rock.

Q3: How do you think some of these rocks formed?

Sedimentary rocks form when bits and pieces of sediment are weathered and eroded and travel to a new location where they are deposited and become compacted over time. Sedimentary rocks can also form when microscopic minerals crystallize out of water – an example of this is limestone. Igneous rocks form when magma or lava cool and crystallize into a rock. Metamorphic rocks form when one rock changes due to heat and pressure. (TEKS K.7A, 2.7A)

AMAZING FACT: Lava can flow as fast as a greyhound runs.