Exploration Question
How and why is Earth constantly changing?

Q1: What rock type is most oil and natural gas stored in and extracted from?
Sedimentary rocks which are composed of sediments, minerals, and organic matter that are cemented together. Organic matter means the remains of plants and animals.

Q2: How do fossil fuels such as oil and natural gas form?
Fossil fuels are formed from the organic matter buried deep inside the crust for millions of years. Over that long period, heat and pressure turn those remains into coal, oil and natural gas. (TEKS 4.7C, 5.7A)

AMAZING FACT: Around 90% of our energy comes from fossil fuels.

Q3: What have you used or seen today that uses energy from burning fossil fuels such as oil and natural gas?
Fossil fuels are a source of energy that is used to turn on the lights, heat homes or drive a vehicle. (TEKS 3.7A, 4.7A)

Q1: How do you think the Blackland Prairie got its name?
The Blackland Prairie area is named after the color of the soil, which you can see is a dark brown to black.

AMAZING FACT: Some of our soil has in it the dusty remains of stars that have been pulled to Earth by gravity or another force.

Q2: What does the Blackland Prairie soil look like? Describe the color(s), textures, and types of plants that grow in it.
AMAZING FACT: The number of micro-organisms found in a cup of soil is greater than the number of people on Earth.

Q3: What makes soil so important to your everyday life?
This soil is also softer and smaller than rocks so roots are able to grow in it. These roots allow water to get from the soil into the plants, which can be as big as tall grasses. Without soil like this, there wouldn’t be as many types of plants in the world, including ones we and other animals eat. (TEKS 3.7A, 4.7A)
Earth is constantly undergoing changes. These changes are driven by forces from within and above Earth. This exploration will look at how Earth’s climate has changed over millions of years. The changes in climate directly impact the environment and the living organisms in that area. Scientists look at the soils, rocks, and fossils to decipher all the climatic changes.

Changes in climate also impacts the shape of Earth’s surface, or its landforms. Factors such as rain, wind, and temperature provide the force needed to reshape Earth. The processes of weathering and erosion are constantly breaking rocks into sediment and moving those sediments to reshape landforms.

There are also forces at work beneath Earth’s crust causing changes. Convection currents in the mantle drive the movement of huge crustal plates. The movement of the plates also cause changes to the surface of Earth. For example, as two plates slide by each other creating built up stress that when released creates earthquakes.

The moving plates can also change Earth by creating mountains and deep ocean trenches.

Q1: What is an earthquake?

Although the process of plate tectonics is a relatively slow geologic change, an earthquake is a rapid event in the geologic and human time scale.

Q2: Where do earthquakes happen?

Earthquakes occur where movement occurs along faults in the Earth’s crust. Most earthquakes occur along or near current and past tectonic plate boundaries. (TEKS 3.7B)

Q3: Do all earthquakes feel the same?

Earthquakes can range in severity, and are measured on the Richter Scale, a logarithmic scale of earthquake magnitude. Higher magnitude earthquakes typically result in more intense shaking and increased damage to the surrounding area.

AMAZING FACT: The largest earthquake ever recorded in the world was in Chile in 1960. It measured a 9.6 on the Richter Scale. The largest in the US was a 9.2 magnitude in Alaska in 1964.

AMAZING FACT: The very first flowers appeared during the Cretaceous Period 145.5 million years ago. Visit Unearthing Fossil Diversity in this Hall to learn more about organisms’ first appearances on Earth.