Science Expo 2017: Brief Activity Descriptions

Earth Systems & Geology Activities

Just around the Riverbend: Students observe landforms taking shape as water flows through a streambed model.

Groundwater Explorations: Students explore groundwater with the League to Save Lake Tahoe.

Quakes and Plates: Using sandpaper and rubber band blocks, students learn about the process of plates building up tension and releasing it to create earthquakes.

Modeling Convection Currents in the Mantle: Students learn about how convection currents cause plate tectonics to move.

The Break Down: Students observe how rocks change sizes, shapes, and forms in nature.

Shake and Break: Students become part of the weathering process and discover how water, wind, and animals affect rocks.

Rock Detective: Students act as a detective to "discover" what rock they have by using various tests.

Birdseed Mining: Students "mine" for beads and seeds within a birdseed mixture to learn about the process of mining and how much environmental impact mining can have.

Exploring Magnetic Field Lines: Students use a compass to map invisible magnetic force fields.

TINS Magnetic Mysteries: Students discover animals that use magnetism to orientate themselves.

Discovering Fossils: Students mimic paleontologists and dig through a plaster mixture to learn how fossils are formed and understand the "story" of sedimentary layers.

Fossil Formation: Students recreate the process of fossilization using bread, gummy candies, and lots of pressure.

Volcano Loco: Students discover how volcanic structure affects its eruptions by building paper cones over dry ice.

Renewable vs. Non-Renewable: Students learn that fuel sources come from natural resources and the difference between renewable and non-renewable energy.

Weather & Climate Activities

Air is everywhere: Students observe a candle lifted up by rising water due to a change in air pressure.

Stubborn Balloon: Students learn how to manipulate air pressure in order to move a water balloon in and out of a bottle.

Cartesian Divers: Students learn about Cartesian Divers in order to understand air pressure and density.

Dangerous Atmosphere: Students track the history of storms and weather in their home county.

Updrafts in Action: Students learn how updrafts (wind) supports hail and rain in clouds during storms.

Cloud in a Bottle: Students observe clouds being formed using a liter bottle, foot pump, and rubbing alcohol.

Kissing Balloons: Students learn how low and high pressure systems create weather patterns.

Thermal Spirals: Students visually prove that heat rises and create convection currents.

Mini Greenhouse Effect: Two Model atmospheres are exposed to light energy from a lamp to show that greenhouse gases absorb and hold heat.

How Much Water is in the Clouds? Students will learn about the different types of clouds and the varying water capacity of each type.

Blue Skies, Partly Cloudy: A take home art project where students make different types of clouds by gluing cotton balls on blue construction paper.

Rumbling Road/Lightning Room: Students will learn to approximate the distance of lightning and witness the energy of lightning.

Wildfire in the Sierras: Students will learn about the weather conditions that are ideal wildfire conditions.

Space Science Activities

The Fabric of Space-Time: A spandex model of the solar system shows how gravity keeps the "planets" (marbles) in orbit

How Big is the Moon?: Students build playdoh models to compare the sizes of the moon and earth, and learn how to the moon is able to eclipse the Sun.

Pocket Solar System: Students create a scaled model of the solar system to understand how vast our solar system is.

Cooking up Comets: Students make "comets" with ammonia, sand, dry ice, and corn syrup to learn the composition of comets.

Meteor Impact: Students drop different sized "meteors" at various angles, distance, and speed into a pan of cocoa and observe the craters formed

Jumping on Jupiter: Students calculate how much they would weight on other planets and learn how gravity differs planet to planet.

Moon Dance: Students use a light source and a white ball in a dark room to understand how the moon phases change.

Time of the Seasons: Students learn that the Earth tilts on its axis to create different seasons in different places.

Challenger Planetarium: At the public session on Wednesday, March 15 we will host planetarium shows with the Challenger Learning Center of Northern Nevada. Visitors have the option of viewing a short film hourly (3, 4, 5, or 6 pm). In "Earth's Wild Ride," viewers explore earth and space science by taking a journey to a lunar colony, riding a river, encountering dinosaurs, and experiencing a volcano and asteroid impact up close. "It's About Time," is a journey to an orbiting space station to study day and night, rotation, revolution, and orbits as well as the life cycles of stars. Following each movie, join Director Paul McFarlane for a guided tour of iPad apps you can use to discover the planets, stats, and NASA spacecraft.