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Science Expo 2017



Earth and Space Science

Answer Key

— Participants —



— Donors —



Geology & Earth Science

Water on Earth

Just Around the River Bend: Name three landforms created by water flowing over earth's surface.

Canyon, channel, delta, alluvial fan, etc.



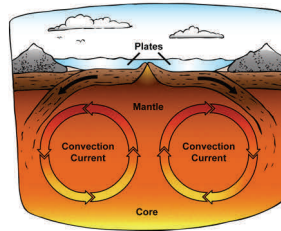
Earthquakes

Earthquakes

Quakes and Plates: What happens when stress and tension build up along a fault line?

Modeling Convection Currents in the Mantle

Convection currents cycle between magma warming and rising and magma cooling and sinking.



Geology

The Break Down: Two types of weathering include chemical and physical.

Rock Detective: What type of rock did you discover?

Calcite, Granite, Limestone, Pumice, Quartz, or Talc

Shake and Brake: Observe and describe how your "rocks" changed after physical weathering? *They became smaller and more rounded, but still consist of the same material.*



Birdseed Mining: After your mining experiment, what do you think are potential environment impacts from mining?

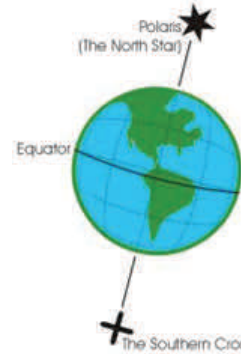
Answers will vary. (Water pollution, air pollution, littering, habitat fragmentation, loss of habitat, use up resources, etc.)

Hallway upstairs

Jumping on Jupiter: Our weight changes on other planets because each planet has a different mass which affects its gravity.

Activities upstairs (Room 206)

Moon Dance: An object spinning around on its axis is a rotation. An object circling around another object is an orbit.



Time of the Seasons: What causes seasons on Earth?

The tilt of the Earth's axis

NOTES



Space Science

Activities upstairs (Room 205)

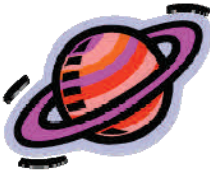
The Fabric of Space-Time: What makes the gravity model different from the actual Solar System? *Friction, the gravity model has it and it slows down the marbles and forces them to fall into the middle, but, in space there is no friction.*

Activities upstairs (Room 204)

How Big is the Moon?: A solar eclipse happens when the moon passes between the Earth and the Sun. *(Answers may be reversed)*

Pocket Solar System: Name three things that are a part of our solar system.

Answers will vary but could include any of the planets, Earth's moon, the sun, asteroids, and space.



Cooking up Comets: Name two ingredients that make up comets.

Answers will vary but could include any of the following: ice, frozen gases, rocks, dust, or organic material.

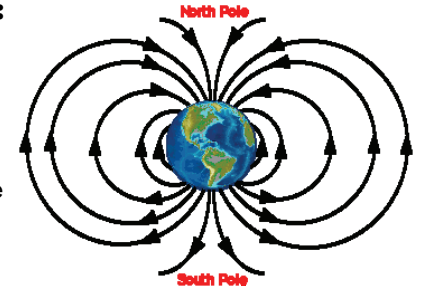
Meteor Impact!: Name one variable that affects the size and shape of a crater. *Size of meteor, speed of meteor, or angle of impact*

Geology & Earth Science

Geology continued

Exploring Magnetic Field Lines:

Magnets have an invisible force field known as a magnetic field.



TINS Magnetic Mysteries: Name two animals that are known to use magnetism to orientate their movement.

Foxes, bees, pigeons, songbirds, sea turtles, and sharks

Discovering Fossils: What is evidence of past life preserved on Earth?

Fossils

Fossil Formation: Oil and natural gas are also called Fossil Fuels.

Volcano Loco: Circle which volcano erupts most violently.

Cinder Cone

Composite Cone

Shield Cone

Renewable vs. Nonrenewable: Name three examples of renewable energy? *Answers will vary. (Solar, wind, hydro, geothermal, biomass, biofuels, etc.)*

Weather and Climate

Air Pressure

Air is Everywhere: Air moves from areas of high pressure to areas of low pressure.

Stubborn Balloon: Does hot air or cold air take up more space? (Circle the correct answer)

Hot air or Cold air?

Cartesian Divers: (Circle one) TRUE or FALSE: Molecules of gas compress easier than molecules of liquid.

Weather

Updrafts in Action: What two things are needed to create large hail? *Very strong updrafts and super cooled water droplets*



Cloud in a Bottle: What causes clouds to form? Circle all that apply.

Air Pressure

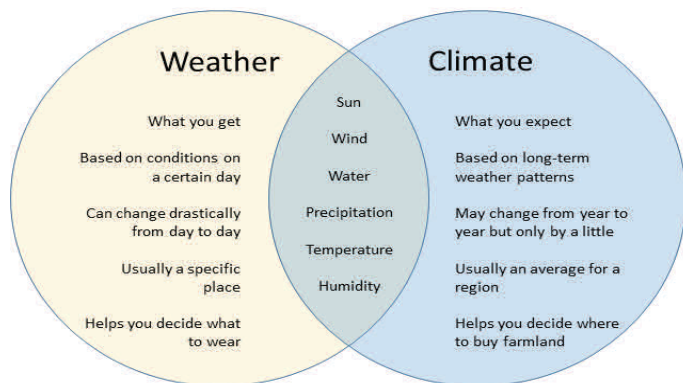
Condensation

Water Vapor

Kissing Balloons: Blowing between the balloons creates a low pressure system which brings them together and results in what type of weather? *Stormy weather*



Thermal Spirals: What causes air to rise? *Heat*



Weather & Climate

Weather continued

How much water is in that cloud?: (Circle one) TRUE or FALSE: All types of clouds hold the same amount of water.

Blue Skies, Partly Cloudy: The cumulonimbus cloud brings what type of weather? *Thunderstorms*



The Rumbling Road: Which travels faster, LIGHT (lightning) or SOUND (thunder)? *LIGHT (Lightning)*

Lightning Room: Lightning is an example of static electricity.

Climate

Dangerous Atmosphere: According to your data, which severe weather event do you experience the most in our climate? *If you live in the Tahoe Basin the answer should be heavy snow.*



Mini Greenhouse Effect: What greenhouse gas is released in this experiment? *Carbon Dioxide*

USFS Wildfire: What are the three main desired weather conditions for safe prescribed burns operation? (circle HIGHER or LOWER for each)

Air Temperature: HIGHER or LOWER

Wind Speed: HIGHER or LOWER

Relative Humidity (%RH): HIGHER or LOWER

