

End of Year *Vocabulary* Project

9th Earth Science

Choose one of the following options to complete the end of year vocabulary project. Using the vocabulary, use pictures that show how all of the concepts work together to create our Earth, solar system, and universe. Your goal is to make 1 large picture and show all of the information. It is worth 2 quiz grades.

Your project needs to include the vocabulary listed below. Do not procrastinate, and don't disregard it. This assignment is due on **May 15th (A-Day)** and **May 16th (B-Day)**.

Standard 1

Big Bang Theory

The theory that the universe originated between 10 and 20 billion years ago from the cataclysmic explosion of a small volume of matter at extremely high density and temperature.

Biosphere

The regions of the surface, atmosphere, and hydrosphere of the Earth occupied by living organisms.

Composition

Something's ingredients or constituents; the way in which a whole or mixture is made up.

Comet

A celestial body moving about the sun, usually in a highly eccentric orbit, consisting of a central mass surrounded by an envelope of dust and gas that may form a tail that streams away from the sun.

Heavy Elements

Elements with atomic numbers higher than iron. They are formed by supernovae explosions.

Milky Way Galaxy

The galaxy containing the solar system; consists of millions of stars that can be seen as a diffuse band of light stretching across the night sky.

Nebular Theory

The theory that the solar and stellar systems were developed from a primeval nebula.

Scale

The size of something, especially as it compares to other things.

Solar System

The collection of eight planets and their moons in orbit around the sun, together with smaller bodies in the form of asteroids, meteoroids, and comets.

Nuclear fusion

Combining of small nuclei under high temperatures and pressures to form the nucleus of a larger atom.

Cosmic Microwave Background Radiation

Left over energy from the big bang that is scattered throughout the universe in all directions.

Doppler Effect

The change in wavelength of light and sound waves because of the movement of the source of the wave.

Standard 2

Geosphere

The physical composition and structure of the Earth.

Seismic wave

An energy wave in the earth that is generated by an earthquake.

Surface wave

A seismic wave that travels along the earth's crust.

S-wave

Type of seismic wave that travels through the interior of the earth. It cannot travel through liquids or gases—only through solids. They are the second wave to arrive after an earthquake.

P-wave

Type of seismic wave that travels through the earth's interior. First waves to arrive after an earthquake. They can travel through solids, liquids and gases.

Lithosphere

Rigid outer layer of the earth consisting of the crust and upper most part of the mantle. It is divided into tectonic plates.

Asthenosphere

Thin, plastic-like part of the upper mantle. Tectonic plates float on top of this layer.

Mesosphere

Rigid portion of the lower mantle.

Outer Core

Liquid outer portion of the earth's core.

Inner Core

Solid, dense portion of the earth's core.

Crust

Outer layer of the earth—a division based on composition.

Mantle

Middle layer of the earth—a division based on composition.

Core

Inner most layer of the earth—a division based on composition.

Tectonic Plate

Section of the earth's lithosphere that moves because of interior process of the earth, such as convection.

Convection

Movement of heat through a fluid causing movement of material due to differences in density.

Volcano

Vent through which lava, gas, and/or rock has or is being erupted through earth's crust.

Sea floor spreading

Process of new crust being created at a divergent plate boundary.

Divergent boundary

Plate boundary where two plates are moving away from each other.

Convergent boundary

Plate boundary where two plates are moving toward each other.

Transform boundary

Plate boundary where two plates are sliding past each other horizontally.

Subduction zone

Area at a convergent boundary where one plate subducts underneath another plate.

Mid-ocean ridge

Divergent tectonic plate boundary.

Volcano

Openings in the Earth's crust through which gases, molten rock, lava, or solid rock fragments are discharged.

Standard 3**Absorb**

To take in or soak in.

Air Mass

A body of air with horizontally uniform temperature, humidity, and pressure.

Air Pollutant

Chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or damages the natural environment into the atmosphere.

Atmosphere

The layer of gases that surround Earth.

Carbon cycle

The series of processes by which carbon compounds are interconverted in the environment, chiefly involving the incorporation of carbon dioxide into living tissue by photosynthesis and its return to the atmosphere through respiration, the decay of dead organisms, and the burning of fossil fuels.

Climate

The weather conditions prevailing in an area in general or over a long period of time.

Climate Change

The change in global climate patterns apparent from the mid to late 20th century onwards, attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.

Coriolis Effect

Results from earth's rotation causing freely moving objects to veer toward the right in the Northern Hemisphere and to the left in the Southern Hemisphere. It effects things like wind, ocean currents, airplanes, missiles.

Cold Front

The boundary of an advancing mass of cold air, in particular the trailing edge of the warm sector of a low-pressure system.

Fossil fuel

A natural fuel such as coal or gas, formed in the geological past from the remains of living organisms.

Greenhouse Effect

The trapping of the sun's warmth in a planet's lower atmosphere because the atmosphere allows visible radiation from the sun to enter but prevents infrared radiation from leaving.

Hadley Cells

A large-scale atmospheric convection cell in which air rises at the equator and sinks at medium latitudes, typically about 30° north or south.

High Pressure System

A region where the atmospheric pressure at the surface of the planet is greater than its surrounding environment. Winds within high-pressure areas flow outward due to the higher density air near their center and friction with land.

Low Pressure System

A region where the atmospheric pressure at sea level is below that of surrounding locations. Low pressure systems form under areas of wind divergence which occur in upper levels of the troposphere.

Ozone

A colorless unstable toxic gas with a pungent odor and powerful oxidizing properties, formed from oxygen by electrical discharges or ultraviolet light. It differs from normal oxygen (O₂) in having three atoms in its molecule (O₃). It protects earth's surface by absorbing ultraviolet light from the sun.

Photosynthesis

The process of plants using carbon dioxide and water, in the presence of light energy, to store energy in the form of carbohydrate and emit oxygen.

Prevailing Westerlies

The winds from the west that occur in the temperate zones of the Earth.

Reflect

A surface throws or bends back light, heat, or sound.

Scatter

To cause to separate and go in various directions.

Stratosphere

The layer of the earth's atmosphere above the troposphere, extending to about 32 miles (50 km) above the earth's surface (the lower boundary of the mesosphere).

Trade Winds

A wind blowing steadily toward the equator from the northeast in the northern hemisphere or the southeast in the southern hemisphere, esp. at sea. Two belts of trade winds encircle the earth, blowing from the tropical high-pressure belts to the low-pressure zone at the equator.

Troposphere

The lowest region of the atmosphere, extending from the earth's surface to a height of about 3.7–6.2 miles (6–10 km), which is the lower boundary of the stratosphere.

Warm Front

The boundary of an advancing mass of warm air, in particular the leading edge of the warm sector of a low-pressure system.

Weather

The state of the atmosphere at a place and time as regards heat, dryness, sunshine, wind, rain, etc..

Standard 4**Abiotic**

The non-living parts of the environment.

Adhesion

The force of attraction between molecules of different substances.

Biomass

A reference to the amount of living material in an area.

Biodiversity

The number and kinds of different organisms that live in a geographic area.

Biotic

A reference to anything living, once living or having to do with a living organism.

Cohesion

The force of attraction between molecules of the same substance.

Condensation

The conversion of a vapor or gas to a liquid.

Evaporation

When liquid converts to gas.

Ecosystem

The parts of the environment, including organisms and abiotic factors, which interact together.

Ground Infiltration

The process by which water on the ground surface enters the soil.

Outgassing

To remove embedded gas from (a solid), as by heating or reducing the pressure.

Precipitation

Rain, snow, sleet, or hail — any kind of weather condition where something's falling from the sky.

Reservoir

A place where something is stored. Lakes, clouds, oceans, groundwater are examples of water reservoirs.

Salinity

Relative proportion of salt in a solution

Surface Run-Off

The water flow that occurs when soil is infiltrated to full capacity and excess water from rain, meltwater, or other sources flows over the land.

Transpiration

The passage of water through a plant from the roots through the vascular system to the atmosphere.

Water Cycle

The cycle of processes by which water circulates between the earth's oceans, atmosphere, and land, involving precipitation as rain and snow, drainage in streams and rivers, and return to the atmosphere by evaporation and transpiration.

Standard 5**Earth Resources**

A material source of wealth, such as timber, fresh water, or a mineral deposit, that occurs in a natural state and has economic value.

Feedback Loops

Channel or pathway formed by an 'effect' returning to its 'cause,' and generating either more or less of the same effect.

Geosphere

The solid mass of the Earth which is distinct from the atmosphere (air) and hydrosphere (water).

Natural Hazards

A threat of a naturally occurring event that will have a negative effect on people or the environment. Many natural hazards are interrelated, e.g. earthquakes can cause tsunamis and drought can lead directly to famine.

Hydrosphere

All of the water inside the earth, on the Earth's surface, and in the atmosphere, and biosphere that moves from location to location