

STUDENT STUDY GUIDE: EARTH SPACE SCIENCE FINAL EXAM

VOCABULARY WORD	DEFINITION
acid	substance with a PH less than 7.0
adaptation	any structural or behavioral change that helps an organism survive in its particular environment
aquifer	layer of permeable rock that allow water to flow through
atmosphere	Earth's air, which is made up of a thin layer of gases, solids, and liquids; forms a protective layer around the planet and is divided into five distinct layers
atom	tiny building block of matter, made up of protons, neutrons, and electrons
atomic number	the number of protons in an atom
base	a substance with a pH above 7
bias	personal opinion
Big Bang Theory	states that 13.7 billion years ago, the universe began with a huge fiery explosion
blizzard	winter storm that lasts at least three hours with temperatures of -12 degrees C or below, poor visibility, and winds of at least 50 km/h.
caldera	large, circular shaped opening formed when the top of a volcano collapses
Cenozoic Era	Era of recent life that began about 66 million years ago and continues today; includes the first appearance of Homo Sapiens about 400,000 years ago.
chlorofluorocarbons (CFCs)	group of chemical compounds used in refrigerators, air conditioners, foam packaging, and aerosol sprays that may enter the atmosphere and destroy ozone.
climate	average weather pattern in an area over a long period of time; can be classified by temperature, precipitation, and vegetation
coal	sedimentary rock formed from decayed plant material; the world's most abundant fossil fuel
comet	space object made from dust and rock particles mixed with frozen water, methane, and ammonia that forms a bright coma as it approaches the Sun.
composite volcano	volcano built by alternating explosive and quiet eruptions that produce layers of tephra and lava; found mostly where Earth's plates come together and one plate sinks below the other.
condensation	process by which water vapor changes to a liquid
conservation	careful use of resources to reduce damage to the environment through such methods as composting and recycling materials.
constant	variable that does not change in an experiment.
continental drift	Wegener's hypothesis that all continents were once connected in a single large landmass that broke apart about 200 million years ago and drifted slowly to their current positions.
control	standard for comparison in an experiment.
convection	transfer of heat by flow of material
Coriolis Effect	causes moving air and water to turn left in the southern hemisphere and

	turn right in the northern hemisphere due to Earth's rotation
crest	highest point of a wave
crystal	solid in which the atoms are arranged in an orderly, repeating pattern
cyanobacteria	chlorophyll containing, photosynthetic bacteria thought to be one of Earth's earliest life forms.
deforestation	destruction and cutting down of forests- often to clear land for mining, roads, and grazing of cattle-resulting in increased carbon dioxide levels.
density	mass/volume
dependent variable	factor being measured in an experiment
earthquake	vibrations produced when rocks break along a fault.
Earth science	study of Earth and space, including rocks, fossils, climate, volcanoes, land use, ocean water, earthquakes, and objects in space.
electron	particle with a negative charge
element	substance that is made of only one type of atom
El Niño	climatic event that begins in the tropical Pacific Ocean, may begin when trade winds weaken or reverse, and can disrupt normal temperatures and precipitation patterns around the world
eon	longest subdivision in the geologic time scale that is based upon the abundance of certain types of fossils and is subdivided into eras, periods, and epochs.
epicenter	point on Earth's surface directly above an earthquake's focus.
erosion	process in which surface materials are worn away and transported from one place to another by agents such as gravity, water, wind, and glaciers.
ethics	study of moral values
fault	surface along which rocks move when they pass their elastic limit and break
focus	in an earthquake, the point below Earth's surface where energy is released in the form of seismic waves
fog	a stratus cloud that forms when air is cooled to its dew point near the ground
fossils	remains, imprints, or traces of prehistoric organisms that can tell when and where organisms once lived and how they lived.
front	boundary between two air masses with different temperatures, density, and moisture; can be cold, warm, occluded, and stationary.
gem	beautiful, rare, highly prized mineral that can be worn in jewelry.
global warming	increase in the average global temperature of Earth.
greenhouse effect	natural heating that occurs when certain gases in Earth's atmosphere, such as methane, carbon dioxide, and water vapor, trap heat.
half life	time it takes for half the atom of an isotope to decay
heterogeneous mixture	a mixture which is not mixed evenly and each component retains its own properties.
homogeneous mixture	a mixture which is evenly mixed throughout
Humidity	amount of water vapor held in the air
hurricane	large, severe storm that forms over tropical oceans, has winds of at least 120

	km/h, and loses power when it reaches land
hypothesis	an educated guess
ice wedging	mechanical weathering process that occurs when water freezes in the cracks of rocks and expands, causing the rock to break apart
igneous rock	rock formed when magma or lava cools and hardens
ion	electrically charged atom whose charge results from an atom gaining or losing electrons
isotopes	atoms of the same element that have different number of neutrons
jet streams	narrow belt of strong winds that blows near the top of the troposphere
land breeze	movement of air from land to sea at night, created when cooler, denser air from the land forces up warmer air over the sea
lava	molten rock that flows from the volcanoes onto Earth's surface
luster	describes the way a mineral reflects light from its surface, can be metallic or nonmetallic
magma	hot, melted rock material beneath Earth's surface
magnitude	measure of energy released in an earthquake
matter	anything that has mass and takes up space
mechanical weathering	physical process that break rock apart without changing its chemical makeup; can be caused by ice wedging, animals, and plant roots.
metamorphic rock	forms when heat, pressure, or fluids act on igneous, sedimentary, or other metamorphic rock to change its form or composition, or both.
meteorologist	studies weather and uses information from Doppler radar, weather satellites, computers, and other instruments to make weather maps and provides forecasts.
mid-ocean ridge	area where new ocean floor is formed when lava erupts through cracks in Earth's surface.
mineral	naturally occurring inorganic solid that has a definite chemical composition and an orderly internal atomic structure.
molecule	group of atoms connected by covalent bonds
natural selection	process by which organism that are suited to a particular environment are better able to survive and reproduce than organisms that are not.
neutron	particle without an electrical charge
orbit	curved path followed by a satellite as it revolves around an object
ore	deposit in which a mineral exists in large enough amounts to be mined at a profit
oxidation	chemical weathering process that occurs when some minerals are exposed to oxygen and water over time.
ozone layer	layer of the stratosphere with a high concentration of ozone; absorbs most of the Sun's harmful ultraviolet radiation
Pangaea	large ancient landmass that was composed of all the continents joined together

Permeable	describe soil and rock with connecting pores through which water can flow
pH scale	scale used to determine how acidic or basic something is
polar zones	climate zones that receive solar radiation at a low angle, extend from 66 degrees N and S latitude to the poles, and are never warm
precipitation	water falling from clouds-including rain, snow, sleet, and hail-whose form is determined by air temperature
prime meridian	imaginary line that represents 0 degrees latitude and runs from the north pole through Greenwich, England, to the south pole
principle of superposition	states that in undisturbed rock layers, the oldest rocks are on the bottom, and the rocks become progressively younger toward the top
proton	particle that has a positive charge
radiation	energy transferred by waves or rays
radioactive decay	process in which some isotopes break down into other isotopes and particles
relative age	the age of something compared with other things
revolution	Earth's year long elliptical orbit around the Sun
rock	mixture of one or more minerals, rock fragments, volcanic glass, organic matter, or other natural materials; can be igneous, metamorphic, or sedimentary
rock cycle	model that describes how rocks slowly change from one form to another through time
rotation	spinning of Earth on its imaginary axis, which takes 24 hours to complete and causes day and night to occur
science	process of looking at and studying things in the world in order to gain knowledge
scientific law	rule that describes the behavior of something in nature; usually describes what will happen in a situation but not why it happens
scientific method	problem solving procedures that can include identifying the problem or question, gathering information, developing a hypothesis, testing the hypothesis, analyzing the results, and drawing conclusions
sea breeze	movement of air from sea to land during the day when cooler air from above the water moves over the land, forcing the heated, less dense air above the land to rise
seafloor spreading	Hess' theory that new seafloor is formed when magma is forced upward
season	short period of climate change in an area caused by the tilt of Earth's axis as Earth revolves around the Sun.
secondary wave	seismic wave that moves rock particles at right angles to the direction of the wave
sediments	loose materials, such as rock fragments, mineral grains, and the remains of once living plants and animals, that have moved by wind, water, ice, and gravity.
Seismograph	instrument used to register earthquake waves and record the time each arrived

silicate	describes a mineral that contains silicon and oxygen and usually one or more other elements.
soil	mixture of weathered rock and mineral fragments, decayed organic matter,
solution	a homogeneous, molecular mixture of two or more substances.
space station	large facility with living quarters, work and exercise areas, and equipment and supported systems for humans to live and work in space while conducting research
station model	specific location, using a combination of symbols on a map
streak	color of a mineral when it is in powdered form
strike slip fault	break in rock caused by shear forces where rocks move past each other without much vertical movement
technology	use of scientific discovery for practical purposes, making people's lives easier and better.
temperate zones	Climate zones with moderate temperatures that are located between the tropics and the polar zones.
terracing	Farming methods used to reduce erosion on steep mountains
trilobite	organism with a three-lobed exoskeleton that was abundant in Paleozoic oceans and is considered to be an index fossil
tropics	climate zone that receives the most solar radiation, is located between latitudes 23 degrees North and 23 degrees South, and is always hot, except at high elevations
troposphere	layer of Earth's atmosphere that is closest to the ground, contains 99% of the water vapor and 75% of the atmospheric gases, and is where clouds and weather occur
tsunami	seismic waves that begin over an earthquake focus and can be highly destructive when they crash on shore
ultraviolet radiation	a type of energy that comes to Earth from the Sun, can damage skin and cause cancer, is mostly absorbed by the ozone layer
unconformity	gap in the rock layer that is due to erosion or periods without any deposition
upwelling	vertical circulation in the ocean that brings deep, cold water to the ocean's surface
variables	different factors that can be changed in an experiment
vent	opening where magma is forced up and flows out onto Earth's surface
volcano	opening in Earth's surface that erupts sulfurous gases, ash, and lava; can form at Earth's plate boundaries, where plates move apart or together, and at hot spots
wave	rhythmic movement that carries energy through matter or space; can be described by its crest, trough, wavelength, and wave height
weather	state of the atmosphere at a specific time and place; determined by factors including air pressure, amount of moisture in the air, temperature, wind, and precipitation
weathering	mechanical or chemical surface processes that break rock into smaller and smaller pieces