Science Glossary

Term	Definition
Abiotic	Any nonliving thing (factor) that makes up an environment (e.g., sun, air, water, soil, temperature).
Adaptation	The development of physical and/or behavioral characteristics that allows organisms to survive and reproduce in their habitats.
Anemometer	An instrument that measures wind speed.
Animal	A multicellular organism of the kingdom Animalia, differing from plants in certain typical characteristics, such as capacity for locomotion, nonphotosynthetic metabolism, pronounced response to stimuli, restricted growth, and fixed bodily structure. Humans are part of this kingdom.
Assimilation	The process by which an organism absorbs and utilizes a substance in its structure. Example: Calcium is assimilated into teeth to make them strong.
Asteroid(s)	Any of the thousands of small bodies ranging in size from 480 miles (775 km) to less than one mile (1.6 km) in diameter that revolve about the sun in orbits lying mostly between the orbits of Mars and Jupiter.
Atmosphere	Several layers of gases above the hydrosphere (water) and lithosphere (land) surrounding Earth.
Atom(s)	The smallest component of an element having the chemical properties of the element, consisting of a nucleus containing combinations of neutrons and protons and one or more electrons bound to the nucleus by electrical attraction; the number of protons determines the identity of the element.
Axis	The imaginary line about which a rotating body, such as Earth, turns.
Balanced condition	The maintaining of a steady state (homeostasis) within an organism. Example: The human body maintains its body temperature around 98.6°F.
Balanced diet	A diet consisting of the proper quantities and proportions of nutrients needed to maintain health or promote growth.
Barometer	An instrument that measures air (barometric) pressure.
Biotic	Any living thing (organism).
Cause and effect	A relationship between two variables in which one variable (the effect) results from the other variable (the cause).
Cells	The basic building block for all organisms.
Chemical change	When one or more substances are transformed into a new substance(s) with new and different properties.
Circulatory system	A collection of organs (e.g., heart, arteries, veins) that moves blood throughout an organism.
Climate	The average weather conditions (temperature, air pressure, relative humidity, precipitation, sunshine, cloudiness, and winds) of a region over a series of years.

Term	Definition
Cleavage	A property of a mineral in which it breaks in smooth flat surfaces. Some minerals cleave in just one direction, while other minerals cleave in all directions.
Comet(s)	A celestial body moving about a star, usually in a highly eccentric (noncircular) orbit, consisting of a central mass surrounded by an envelope of dust and gas that may form a tail that streams away from the center of the mass.
Community	All the populations of a given ecosystem.
Constant	A factor or variable that does not change in an experiment or investigation.
Convection currents	Directed flow of gases or liquids in a circular pattern due to differences in temperature and density.
Cyclic relationship	As one variable changes, the value of the other variable repeats in a predictable pattern. Examples: The moon goes through phases that repeat on a monthly basis; the tides rise and fall every six hours.
Deforestation	The action or process of cutting down whole forests.
Density	The amount of matter (mass) per unit volume of a substance defined by the formula density = mass/volume.
Dependent variable (or responding variable)	In an experimental design, a factor that may change under different conditions controlled by the experimenter (the independent variable). In other words, the dependent variable is dependent on, or the result of, the condition of the independent variable in the experiment.
Depletion	To decrease or exhaust the supply of something, such as a natural resource, to the point that it adversely affects the environment.
Deposition	Eroded material dropped and accumulated in another location.
Digestion	The process by which food is broken up physically (as by the action of the teeth), and/or chemically (as by the action of enzymes) into substances able to be absorbed and assimilated into the body.
Digestive system	The digestive system is made up of the organs that take in food (mouth) by a process called ingestion, the organs that break down food (teeth, stomach, small intestine) into nutrients (protein, vitamins, minerals, carbohydrates, and fats) by a process called digestion, and the organs that absorb water and eliminate undigested food (large intestine) by a process called egestion.
Direct relationship	The relationship between two variables in which both variables increase or decrease at the same rate. Examples: As the angle of incoming solar radiation increases, the temperature increases; as the mass of a substance decreases, the volume of that substance decreases.
Ecosystem	All the communities of living organisms, together with their non-living environment, functioning as a unit.
Egestion	The process by which undigested food is eliminated from the digestive system.

Term	Definition
Equilibrium	*Living Environment*: A state of balance due to a system remaining constant or the equal action of opposing forces acting on a system. Examples: • static equilibrium—the amount of enzymes in the stomach between meals • dynamic equilibrium—muscles pulling in opposite directions allowing an organism to stand *Physical Setting/Earth Science*: A state of balance due to a system remaining constant or the equal action of opposing forces acting on a system at the same rate. Examples: • static equilibrium—the amount of water in a swimming pool remaining constant because no water is added or removed • dynamic equilibrium—the amount of water in a lake remaining constant because the amount of water entering the lake from a stream equals the amount of water leaving the lake by another stream
Erosion	The movement of weathered rock and soil to a new location.
Evaporation	The process by which liquid water becomes gaseous water (vapor).
Event	Something that happens or occurs in a certain place during a particular time frame.
External heat source	A source outside Earth from which Earth obtains energy that may be converted to heat (not including its own internal heat source). Example: Earth receives light from the sun, which is absorbed by the surface of Earth. Earth then reradiates the energy in the form of heat, which is trapped by the carbon dioxide and other greenhouse gases in the atmosphere (greenhouse effect). Note: Earth DOES NOT receive heat from the sun. If it did, outer space would be very warm, not cold.
Fracture	A property of a mineral by which it breaks into jagged edges.
Forms of water	See *Phases of Matter*.
Fossil	Traces or remains of organisms that lived in the past.
Gas	A substance that has neither a determined shape nor definite volume. (Gases assume the shape and volume of a closed container.)
Greenhouse effect	Earth receives light from the sun, which is absorbed by the surface of Earth. Earth then reradiates the energy in the form of heat, which is trapped by the greenhouse gases (carbon dioxide, methane, and chlorofluorocarbons, i.e., CFCs) in the atmosphere. This keeps Earth warm. Note: Earth DOES NOT receive heat from the sun. If it did, outer space would be very warm, not cold.
Global warming	An accumulation of excessive greenhouse gases (carbon dioxide, methane chlorofluorocarbons, i.e., CFCs) causes the average planetary temperature to rise. Some believe this rise will result in the polar ice caps melting and flooding portions of Earth.

Term	Definition
Hardness	A property of a mineral determined by how compact the atoms are that make up the mineral. It is defined by the Mohs scale, which ranges from 1 being the softest mineral (talc) to 10 being the hardest mineral (diamond).
Homeostasis	The maintaining of a steady state within an organism. Example: The human body maintains its body temperature at around 98.6°F.
Human	Kingdom: Animalia→ Phylum: Chordata→ Subphylum: Vertebrata→ Class: Mammalia→ Order: Primates→ Suborder: Haplorrhini→ Family: Hominidae→ Genus: Homo→ Species: Homo sapiens
Hydrosphere	A thin layer of water on top of the lithosphere (land); it is also called the oceans.
Independent variable (or manipulated variable)	In an experimental design, a factor that is controlled or selected by the experimenter to determine its relationship to the dependent variable. In other words, the values of the independent variable determine the values of the dependent variable.
Indirect relationship	The relationship between two variables in which one variable increases as the other variable decreases. Example: As the pore space in the soil increases, the amount of runoff decreases.
Ingestion	The process of taking in food (eating).
Interdependence	Factors requiring one another within a system.
Internal heat source	System within Earth from which it obtains heat. Example: geothermal activity
Inverse relationship	The relationship between two variables in which the product of the two variables is constant. Example: When the independent variable is 1, the dependent variable is 8; when the independent variable is 2, the dependent variable is 4; multiplying the variables together each time results in 8.)
Investigation	A searching inquiry to discover something unknown or to test a principle or supposition. Traditionally, the scientific experiment used to test a hypothesis.
Instrument	Scientific equipment used to enhance (or make better) observations. Examples: meterstick, graduated cylinder, microscope
Liquid	A substance that has a definite volume but takes the shape of the container in which it is placed. (Liquids assume the shape but not the volume of a closed container.)
Lithosphere	A thin layer of rocks that composes the crust of Earth.
Living thing	Anything that possesses all of the characteristics of life: has cells, utilizes/needs energy, grows/develops, reproduces, has DNA (genetic code/heredity), responds to stimuli/environment, carries out and maintains homeostasis.
Luster	The property of a mineral defined by how light reflects off of it. Minerals that reflect light are said to be metallic, while minerals that are dull and earthy and do not reflect light are said to be nonmetallic.
Mass	The amount of matter within a given body. A calibrated scale, two-arm balance, or triple-balance beam is often used to measure mass.

Term	Definition
Material needed for experimentation **(Compare *Scientific tool*)**	Objects needed (other than scientific tools) to perform an investigation. Examples: water, salt
Matter	Anything that has mass and takes up space.
Measurement	Observations that are made with instruments and are usually based on numerical data. Example: The table is 3 meters long.
Meteor(s)	A body that enters Earth's atmosphere and becomes incandescent (glows) as a result of the heat caused by friction; commonly called a “shooting star.”
Mineral	Any of a class of substances occurring in nature, usually comprising inorganic substances of definite chemical composition and usually of definite crystal structure. Minerals can easily be identified by simple properties such as streak, luster, hardness, cleavage, and fracture.
Nonliving thing	Anything that does not (or never did) exhibit the characteristics of living things as described in “Living Things.”
Objects	Anything that is visible or tangible.
Observation	Any interaction with one or more human senses and an object or the environment; something that can be seen, heard, felt, tasted, and/or smelled.
One-celled organism	A living thing made up of only one cell. It carries out all of the characteristics of the life functions using only its one cell. Examples: bacteria, yeast, and protists).
Organ(s)	A group of tissues arranged as a part of an organism that performs a specific function or group of functions. Some major animal organs are the heart, lungs, brain, eye, stomach, spleen, bones, pancreas, thyroid, kidneys, liver, intestines, skin (the largest human organ), uterus, and bladder. Plant organs include vegetative organs—roots, stems, and leaves—and reproductive organs—flower, seed, and fruit.

Term	Definition
Organ system(s) **(group of organs that work together)**	A group of organs that work together to perform a set of related functions. There are multiple human organ systems, each with two or more different organs that work together. Examples: • Digestive system: breaks down and absorbs nutrients and excretes waste; includes, but is not limited to, mouth, esophagus, stomach, and small and large intestines. • Skeletal system: provides support and allows movement, produces lymphocytes, and protects internal organs; includes bones, cartilage, tendons, and ligaments. • Muscular system: provides support and allows movement, and produces heat; includes skeletal muscles and smooth muscles throughout the body. • Nervous and endocrine systems: provide integration and coordination through electrochemical signals (nervous) and hormones (endocrine); includes, but is not limited to, brain, spinal cord and peripheral nerves, and various glands, such as the hypothalamus, pituitary, thyroid, pancreas, and adrenal glands. • Respiratory system: provides gas exchange between blood and the environment by eliminating carbon dioxide and absorbing oxygen; includes, but is not limited, to mouth, nose, throat, trachea, and lungs. • Circulatory/Cardiovascular system: transports needed materials to the cells and transports waste away from the cells; includes heart and blood vessels (arteries, capillaries, veins). • Reproduction system: manufactures cells that allow reproduction; in females includes, but is not limited to, ovaries, oviducts, uterus, vagina and mammary glands and in males testes, seminal vesicles, and penis. • Integumentary system: protects the body from infection and keeps the body from losing water; includes human skill cells. • Lymphatic system: regulates fluids and immunity by destroying and removing invading microbes and viruses from the body and removing fat and excess fluids from the blood; includes lymph, lymph nodes and vessels, white blood cells, and T- and B- cells. • Excretory/urinary system: filters out cellular wastes, toxins, and excess water or nutrients from the circulatory system and maintains homeostasis of electrolytes; includes, but is not limited to, kidneys, ureters, bladder and urethra.
Organism	A living thing that possesses the characteristics of life. Examples: plant, mammal, bird, insect, reptile, fish, crustacean, aquatic or estuarine animal, or bacterium
Organism response	An organism's reaction to any stimulus. Example: contraction of a unicellular organism when touched
Ozone depletion	The breaking down of the atmosphere's ozone layer by chlorofluorocarbons (CFCs)—a component in some aerosol sprays and refrigerants. The ozone layer protects Earth from harmful ultraviolet radiation from the sun that causes cancer and deformities.

Term	Definition
Petrified	Organic material converted into stone or a substance of stony hardness by the infiltration of water and the deposition of dissolved mineral matter, such as petrified wood.
Phases Of matter	Matter can exist in three phases (solid, liquid, and gas) that are determined by the temperature or average kinetic energy (relative movement) of the molecules within the substance. The faster and freer the particle movement, the more likely the substance will be gaseous. As particle movement (temperature) changes, a substance can move from phase to phase and back again.
Physical change	A change of matter from one form to another without a change in chemical properties. Examples: water becoming ice a boulder breaking into pebbles
Planet(s)	Any of the eight large celestial bodies revolving about the sun—Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune (in the order from the sun).
Population	All the individuals of one species living in a given ecosystem.
Psychrometer	An instrument used to measure relative humidity, which consists of a wet bulb thermometer and a dry bulb thermometer that usually spin around on a chain. The readings from the two thermometers are plotted on a chart to determine the relative humidity.
Qualitative results	Data from an experiment or investigation based on non-numerical observations. Example: The solution turns blue.
Quantitative results	Data from an experiment or investigation based on numerical observations. Example: The temperature rose to 13°C.
Respiration	There are two forms of respiration. • Mechanical respiration is the inhalation and exhalation of air; breathing. • Cellular respiration is the chemical change of glucose and oxygen into carbon dioxide and water, releasing energy during the process.
Scientific investigation	See *Investigation*.
Scientific tool **(Compare *Materials needed for experimentation*)**	Instrument used specifically to make a better observation, usually with numbers. Examples: thermometer, ruler, beaker

Term	Definition
Senses	In general, there are five senses: sight, smell, taste, touch, and hearing. Each of the five senses consists of organs with specialized cells that have receptors for specific stimuli. • Sight (see/vision): The eye is the organ of vision; it interprets information and surroundings from the effects of visible light reaching the eye. • Hearing (hear/audition): The ear is the organ of hearing; it perceives sound by detecting vibrations. • Taste (gustation): The receptors for taste, called taste buds, are situated chiefly in the tongue, but they are also located in the roof of the mouth and near the pharynx; it detects the flavor of substances such as food, certain minerals, and poisons. • Smell (olfaction): The nose is the organ responsible for the sense of smell; many vertebrates, including most mammals and reptiles, have two distinct olfactory systems—the main olfactory system and the accessory olfactory system (mainly used to detect pheromones). • Touch (tactition): The sense of touch is distributed throughout the body; the impression of touch is formed from several modalities. Four kinds of touch sensations that can be identified are cold, heat, contact, and pain. In addition to sight, smell, taste, touch, and hearing, humans also have awareness of balance (equilibrioception), pressure, temperature (thermoception), pain (nociception), and motion, all of which may involve the coordinated use of multiple sensory organs.
Simple trends	Pattern or relationship that data show in an investigation, generally occurring over time. Examples: constant, cyclic, direct, indirect, inverse
Solid	A substance that has a definite shape and volume. (Solids do not assume the shape or volume of a closed container.)
Species	Organisms that can mate and produce reproductive offspring.
Star	A self-luminous celestial body consisting of a mass of gas held together by its own gravity in which the energy generated by nuclear reactions in the interior is balanced by the outflow of energy to the surface, and the inward-directed gravitational forces are balanced by the outward-directed gas and radiation pressures. The sun is a star.
Thermometer	An instrument for measuring temperature; often a sealed glass tube that contains a column of liquid, usually an alcohol, that expands and contracts or rises and falls with temperature changes.
Tissue	A group of cells that function together as part of an organ. Example: The eye has cornea tissue and retina tissue.
Volume	The amount of space occupied by a three-dimensional object as measured in units including cubic centimeters, quarts, or liters.
Waste removal (Urinary system & Digestive system)	The food that the body cannot digest is removed by the lower portion of the digestive system (the large intestine) by a process called egestion (See *Egestion)*. The cellular waste and excess nutrients that the body does not need are eliminated from the body by the urinary system in the form of urine.

Term	Definition
Water cycle	The cycle of evaporation and condensation that controls the distribution of Earth's water as it evaporates from bodies of water, condenses, precipitates, and returns to those bodies of water.
Weather conditions	The present state of the atmosphere with respect to wind, temperature, relative humidity, sunshine, cloudiness, precipitation, air pressure, etc.
Weathering	A slow and continuous process of breaking down rocks chemically or mechanically into smaller and smaller pieces.
Wind vane	A device, such as a rod to which a freely rotating pointer is attached, for indicating the direction of the wind; also called a weather vane.

Resources:

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