



NGSSS: SCIENCE

Abiotic	An environmental factor not associated with or derived from living organisms.
Absorption	1-The taking up and storing of energy, such as radiation, light, or sound, without it being reflected or transmitted. 2- The movement of a substance, such as a liquid or solute, across a cell membrane by means of diffusion or osmosis.- The process by which one substance, such as a solid or liquid, takes up another substance, such as a liquid or gas, through minute pores or spaces between its molecules. A paper towel takes up water, and water takes up carbon dioxide, by absorption.
Acceleration	Rate of change in velocity, usually expressed in meters per second per second; involves an increase or decrease in speed and/or a change in direction.
Acid	A substance that increases the H ⁺ concentration when added to a water solution. Acids turn blue litmus paper red, have a pH of less than 7, and their aqueous solutions react with bases and certain metals to form salts.
Activation energy	The least amount of energy required to start a particular chemical reaction.
Adaptation	A characteristic of an organism that increases its chance of survival and reproduction in its environment.
Adenosine triphosphate (ATP)	An organic compound that is composed of adenosine and three phosphate groups. It serves as a source of energy for many metabolic processes. ATP releases energy when it is broken down into ADP and phosphate by hydrolysis during cell metabolism.
Aerobic	Occurring in the presence of oxygen or requiring oxygen to live. In aerobic respiration, which is the process used by the cells of most organisms, the production of energy from glucose metabolism requires the presence of oxygen.
Alimentary canal	The tubular passage that extends from mouth to anus and functions in digestion and absorption of food and elimination of residual waste.
Amino acid	An organic molecule containing an amino group (-NH ₂), a carboxyl (-COOH) group, and a variable side chain (R group) that distinguishes the amino acid. Proteins are synthesized from amino acids.
Amphibian	A cold-blooded vertebrate of the class Amphibia, such as a frog or salamander, that characteristically hatches as an aquatic larva with gills. The larva then transforms into an adult, having moist skin, through which it can breathe, and air-breathing lungs.
Anaerobic	Occurring in the absence of oxygen or not requiring oxygen to live. Anaerobic bacteria produce energy from food molecules without the presence of oxygen.
Anatomy	The scientific study of the shape and structure of organisms and their parts.
Angiosperm	Any of a large group of plants that produce flowers. They develop seeds from ovules contained in ovaries, and the seeds are enclosed by fruits, which develop from carpels.
Angular momentum	A vector quantity that is a measure of the rotational momentum of a rotating body or system, that is equal in classical physics to the product of the angular velocity of the body or system and its moment of inertia with respect to the rotation axis, and that is directed along the rotation axis.
Antibiotic	A substance, such as penicillin or streptomycin, produced by or derived from certain fungi, bacteria, and other organisms, or synthesized in laboratories, that

	can destroy or inhibit the growth of other microorganisms. Antibiotics are widely used in the prevention and treatment of infectious diseases.
Aquatic	In or on the water
Arthropod	Any of numerous invertebrate animals of the phylum Arthropoda, including the insects, crustaceans, arachnids, and myriapods, that are characterized by a chitinous exoskeleton and a segmented body to which jointed appendages are articulated in pairs.
Asexual reproduction	A form of reproduction in which new individuals are formed without the involvement of gametes.
Asteroid	Any of numerous small, often irregularly shaped rocky bodies that orbit the Sun primarily in the asteroid belt, a region between the orbits of Mars and Jupiter.
Atmosphere	The layers of gas that surround Earth, other planets, or stars.
Atom	The smallest unit of a chemical element that can still retain the properties of that element.
Attraction	The electric or magnetic force exerted by oppositely charged particles, tending to draw or hold the particles together.
Axial skeleton	The bones constituting the head and trunk of a vertebrate body.
Axis	The imaginary line on which an object rotates (e.g., Earth's axis runs through Earth between the North Pole and the South Pole); an imaginary straight line that runs through a body; a reference to the line in a coordinate system or graph.
Bacteria	Any of a large group of one-celled organisms that lack a cell nucleus, reproduce by fission or by forming spores, and in some cases cause disease.
Barometric pressure	The pressure of the atmosphere usually expressed in terms of the height of a column of mercury.
Base	A substance that increases the OH ⁻ concentration of a solution; a proton acceptor.
Big Bang Theory	A cosmological theory holding that the universe originated approximately 20 billion years ago from the violent explosion of a very small agglomeration of matter of extremely high density and temperature.
Biogeochemical cycle	The flow of chemical elements and compounds between living organisms and the physical environment. Chemicals absorbed or ingested by organisms are passed through the food chain and returned to the soil, air, and water by such mechanisms as respiration, excretion, and decomposition.
Biosphere	The part of the earth and its atmosphere in which living organisms exist or that is capable of supporting life.
Biotechnology	The manipulation (as through genetic engineering) of living organisms or their components to produce useful usually commercial products (as pest resistant crops, new bacterial strains, or novel pharmaceuticals).
Biotic	Factors in an environment relating to, caused by, or produced by living organisms.
Boil	To change from a liquid to a vapor by the application of heat.
Bryophyte	Any of a division (Bryophyta) of non-flowering and non-vascular plants comprising the mosses, liverworts, and hornworts, that undergo sexual reproduction via spores.
Carbohydrate	Any of a group of organic compounds that includes sugars, starches, celluloses, and gums and serves as a major energy source in the diet of animals. These compounds are produced by photosynthetic plants and contain only carbon, hydrogen, and oxygen, usually in the ratio 1:2:1.
Cardiovascular system	The bodily system consisting of the heart, blood vessels, and blood that circulates blood throughout the body, delivers nutrients and other essential materials to cells, and removes waste products.
Catalyst	A substance that speeds up or slows down the rate of a reaction without being consumed or altered.
Cell	The smallest structural unit of an organism that is capable of independent functioning, consisting of cytoplasm and various organelles, all surrounded by a

	semipermeable cell membrane, which in some cells, is surrounded by a cell wall
Cerebellum	The part of the vertebrate brain that is located below the cerebrum at the rear of the skull and that coordinates balance and muscle activity. In mammals, the cerebellum is made up of two connecting hemispheres that consist of a core of white matter surrounded by gray matter.
Cerebrum	The largest part of the vertebrate brain, filling most of the skull and consisting of two cerebral hemispheres divided by a deep groove and joined by the corpus callosum, a transverse band of nerve fibers. The cerebrum processes complex sensory information and controls voluntary muscle activity. In humans it is the center of thought, learning, memory, language, and emotion.
Chemical change	A reaction or a change in a substance produced by chemical means that results in producing a different chemical.
Chemiosmotic	Relating to or being a theory that seeks to explain the mechanism of ATP formation in oxidative phosphorylation by mitochondria and chloroplasts without recourse to the formation of high-energy intermediates by postulating the formation of an energy gradient of hydrogen ions across the organelle membranes that results in the reversible movement of hydrogen ions to the outside and is generated by electron transport or the activity of electron carriers.
Chloroplast	A plastid in most cells of most plants that contains chlorophylls and carotenoid pigments and produces glucose through photosynthesis.
Chromosome	A structure in living cells that consists of a single molecule of DNA bonded to various proteins and that carries the genes determining heredity.
Circuit	An interconnection of electrical elements forming a complete path for the flow of current.
Circulatory system	The bodily system consisting of the heart, blood vessels, and blood that circulates blood throughout the body, delivers nutrients and other essential materials to cells, and removes waste products.
Clone	To produce genetic material or produce or grow a cell, group of cells, or organism from a single original cell.
Coagulation	The process of changing from a liquid to a gel or solid state by a series of chemical reactions, especially the process that results in the formation of a blood clot.
Codominant	Relating to two alleles of a gene pair in a heterozygote that are both fully expressed.
Comet	A celestial body that appears as a fuzzy head usually surrounding a bright nucleus, that has a usually highly eccentric orbit, that consists primarily of ice and dust, and that often develops one or more long tails when near the sun.
Compound	A substance made up of at least two different elements held together by chemical bonds that can only be broken down into elements by chemical processes.
Concentration	The relative amount of a particular substance, a solute, or mixture.
Condensation	The process of changing from a gas (i.e., water vapor) to a liquid (i.e., dew); the act of making more dense or compact.
Conduction	The transmission of heat through a medium and without the motion of the medium.
Conductivity	The ability or power to conduct or transmit heat, electricity, or sound.
Conductor	A material or an object that conducts heat, electricity, light, or sound.
Connective tissue	Tissue that connects, supports, binds, or encloses the structures of the body. Connective tissues are made up of cells embedded in an extracellular matrix and include bones, cartilage, mucous membranes, fat, and blood.
Conservation of Mass	The principle that mass cannot be created or destroyed; also conservation of matter.
Consumer	An organism that feeds on other organisms for food.
Convection	Heat transfer in a gas or liquid by the circulation of currents from one region to another.

Current	The amount of electric charge flowing past a specified circuit point per unit time.
Cytoplasm	The material that surrounds organelles and inside the cell membrane.
Decomposer	Any organism that feeds or obtains nutrients by breaking down organic matter from dead organisms.
Deforestation	The cutting down and removal of all or most of the trees in a forested area.
Delta	A usually triangular mass of sediment, especially silt and sand, deposited at the mouth of a river. Deltas form when a river flows into a body of standing water, such as a sea or lake, and deposits large quantities of sediment.
Density	Concentration of matter of an object; number of individuals in the same species that live in a given area; the mass per unit volume.
Dependent variable	Factor being measured or observed in an experiment.
Deposition	The process by which sediment is carried by forces (e.g., wind, rain, or water currents) and left in a certain area.
Desertification	The transformation of arable or habitable land to desert, as by a change in climate or destructive land use.
Digestive system	The alimentary canal and digestive glands regarded as an integrated system responsible for the ingestion, digestion, and absorption of food.
Diploid	Having two sets of chromosomes or double the number of haploid chromosomes in the germ cell.
Disaccharide	Any of a class of sugars, including lactose and sucrose, that are composed of two monosaccharides.
Dissolve	To cause to pass into solution.
Diversity	The different species in a given area or specific period of time.
DNA	Deoxyribonucleic acid; a nucleic acid that is genetic material; present in all organisms.
Dominance	Tendency of certain (dominant) alleles to mask the expression of their corresponding (recessive) alleles.
Dune	A hill or ridge of sand piled up by the wind.
Earthquake	The shaking of the ground caused by a sudden release of energy in Earth's crust.
Eclipse	The partial or total blocking of light of one celestial object by another.
Electric field	A region associated with a distribution of electric charge or a varying magnetic field in which forces due to that charge or field act upon other electric charges.
Electric potential	A measure of the work required by an electric field to move electric charges.
Electricity	The physical phenomena arising from the behavior of electrons and protons that is caused by the attraction of particles with opposite charges and the repulsion of particles with the same charge.
Electromagnetic force	The fundamental force that is associated with electric and magnetic fields and is responsible for atomic structure, chemical reactions, the attractive and repulsive forces associated with electrical charge and magnetism, and all other electromagnetic phenomena.
Electromagnetic radiation	The emission and propagation of the entire range of the electromagnetic spectrum, including: gamma rays, x-rays, ultraviolet radiation, visible light, microwaves, and radio waves.
Electromagnetic spectrum	The entire range of electromagnetic radiation. At one end of the spectrum are gamma rays, which have the shortest wavelengths and high frequencies. At the other end are radio waves, which have the longest wavelengths and low frequencies. Visible light is near the center of the spectrum.
Electron	A stable elementary particle in the lepton family having a mass at rest of 9.107×10^{-28} grams and an electric charge of approximately -1.602×10^{-19} coulombs. Electrons orbit about the positively charged nuclei of atoms in distinct orbitals of different energy levels, called shells.
Electrophoresis	The migration of electrically charged molecules through a fluid or gel under the influence of an electric field. Electrophoresis is used especially to separate combinations of compounds, such as fragments of DNA, for the purpose of

	studying their components.
Embryology	The branch of biology that deals with the formation, early growth, and development of living organisms.
Endocrine	Of or relating to endocrine glands or the hormones secreted by them.
Endonuclease	Any of a group of enzymes that catalyze the hydrolysis of bonds between nucleic acids in the interior of a DNA or RNA molecule.
Endosymbiosis	Symbiosis in which a symbiont dwells within the body of its symbiotic partner.
Endothermic reaction	Relating to a chemical reaction that absorbs heat.
Energy	The capacity to do work.
Entropy	A measure of the unavailable energy in a closed thermodynamic system that is also usually considered to be a measure of the system's disorder, that is a property of the system's state, and that varies directly with any reversible change in heat in the system and inversely with the temperature of the system.
Environment	The sum of conditions affecting an organism, including all living and nonliving things in an area, such as plants, animals, water, soil, weather, landforms, and air.
Enzyme	Any of numerous proteins produced in living cells that accelerate or catalyze chemical reactions.
Epithelial tissue	Membranous tissue covering internal organs and other internal surfaces of the body.
Equator	An imaginary circle around Earth's surface located between the poles and a plane perpendicular to its axis of rotation that divides it into the Northern and Southern Hemispheres.
Erosion	The wearing away of Earth's surface by the breakdown and transportation of rock and soil.
Eukaryote	An organism whose cells contain a nucleus surrounded by a membrane and containing DNA bound together by proteins (histones) into chromosomes.
Evaporation	The process by which a liquid is converted to its vapor phase by heating the liquid.
Evolution	A theory that the various types of species arise from pre-existing species and that distinguishable characteristics are due to modifications through successive generations.
Exocrine	Producing, being, or relating to a secretion that is released outside its source.
Exoskeleton	A hard outer structure, such as the shell of an insect or crustacean, that provides protection and/or support for an organism.
Exothermic reaction	A chemical reaction that releases heat.
Experiment	A procedure that is carried out and repeated under controlled conditions in order to discover, demonstrate, or test a hypothesis.
Fatty acid	Any of a large group of organic acids, especially those found in animal and vegetable fats and oils. Fatty acids are mainly composed of long chains of hydrocarbons ending in a carboxyl group. A fatty acid is saturated when the bonds between carbon atoms are all single bonds. It is unsaturated when any of these bonds is a double bond.
Fertilization	The act or process of initiating biological reproduction by insemination or pollination.
Fission	The process by which an atomic nucleus splits into two or more large fragments of comparable mass, simultaneously producing additional neutrons and vast amounts of energy; or, a process by which single-cell organisms reproduce asexually.
Food chain	Transfer of energy through various stages as a result of feeding patterns of organisms.
Foramen	An opening or short passage, especially in the body.

Force	A vector quantity that exists between two objects and, when unbalanced by another force, causes changes in velocity of objects in the direction of its application; a push or pull.
Forensic	Relating to the use of science or technology in the investigation and establishment of facts or evidence in a court of law.
Fossa	A small cavity or depression, as in a bone.
Fossil	A whole or part of an organism that has been preserved in sedimentary rock.
Frame of reference	A set of coordinate axes in terms of which position or movement may be specified or with reference to which physical laws may be mathematically stated.
Freeze	To pass from the liquid to the solid state by loss of heat from the substance/system.
Frequency	The number of cycles or waves per unit time.
Fungus	A kingdom of eukaryotic organisms that reproduce by spores and have cell walls that contain chitin, examples include the mushrooms, molds, yeasts, and mildews.
Fusion	The process by which two lighter atomic nuclei combine at extremely high temperatures to form a heavier nucleus and release vast amounts of energy.
Galaxy	A large collection of stars, gases, and dust that are part of the universe (e.g., the Milky Way galaxy) bound together by gravitational forces.
Gamete	A reproductive cell having the haploid number of chromosomes, especially a mature sperm or egg capable of fusing with a gamete of the opposite sex to produce the fertilized egg.
Gas	One of the fundamental states of matter in which the molecules do not have a fixed volume or shape.
Genetic	Affecting or determined by genes.
Genotype	The genetic information contained in a cell, an organism, or an individual.
Geocentric	Relating to a model of the solar system or universe having the Earth as the center.
Geosphere	The solid part of the earth consisting of the crust and outer mantle.
Germination	The beginning of growth, as of a seed, spore, or bud. The germination of most seeds and spores occurs in response to warmth and water.
Glacier	A huge mass of ice slowly flowing over a land mass, formed from compacted snow in an area where snow accumulation exceeds melting and sublimation.
Gravity	The force of attraction between any two objects.
Gymnosperm	A plant, such as a cycad or conifer, whose seeds are not enclosed within an ovary.
Habitat	A place in an ecosystem where an organism normally lives.
Haploid	Having a single set of each chromosome in a cell or cell nucleus. In most animals, only the gametes (reproductive cells) are haploid.
Heat	Energy that transfers between substances because of a temperature difference between the substances; the transfer of energy is always from the warmer substance to the cooler substance
Heliocentric	Relating to a model of the solar system or universe having the Sun as the center.
Hemostasis	The stoppage of blood flow through a blood vessel or body part.
Heredity	The passage of biological traits or characteristics from parents to offspring through the inheritance of genes.
Histology	The scientific study of the microscopic structure of organism tissues.
Homeostasis	The tendency of an organism or cell to regulate its internal conditions, such as the chemical composition of its body fluids, so as to maintain health and functioning, regardless of outside conditions.
Hominid	A group of primates of the family Hominidae, which includes modern humans.
Hormone	A substance, usually a peptide or steroid, produced by one tissue and conveyed by the bloodstream to another to affect physiological activity, such as growth or metabolism.

Humidity	The amount of water vapor in the atmosphere, usually expressed as either absolute humidity or relative humidity.
Hydrosphere	All of the Earth's water, including surface water (water in oceans, lakes, and rivers), groundwater (water in soil and beneath the Earth's surface), snowcover, ice, and water in the atmosphere, including water vapor.
Hypertension	Abnormally high blood pressure and especially arterial blood pressure.
Hypothalamus	The part of the brain that lies below the thalamus, forming the major portion of the ventral region of the diencephalon and functioning to regulate bodily temperature, certain metabolic processes, and other autonomic activities.
Hypothesis	A tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation.
Igneous	A type of rock that forms from molten or partly molten material that cools and hardens.
Immune system	The body system that protects the organism by distinguishing foreign tissue and neutralizing potentially pathogenic organisms or substances. The immune system includes organs such as the skin and mucous membranes, which provide an external barrier to infection, cells involved in the immune response, such as lymphocytes, and cell products such as lymphokines.
Independent variable	The factor that is changed in an experiment in order to study changes in the dependent variable.
Inference	The act of reasoning from factual knowledge or evidence.
Infrared	Relating to the invisible part of the electromagnetic spectrum with wavelengths longer than those of visible red light but shorter than those of microwaves.
Insulator	A material or an object that does not easily allow heat, electricity, light, or sound to pass through it. Air, cloth and rubber are good electrical insulators; feathers and wool make good thermal insulators.
Invertebrate	An animal that has no backbone or spinal column and therefore does not belong to the subphylum Vertebrata of the phylum Chordata. Most animals are invertebrates. Corals, insects, worms, jellyfish, starfish, and snails are examples of invertebrates.
Investigation	A systematic process that uses various types of data and logic and reasoning to better understand something or answer a question.
Kinetic energy	The energy possessed by a body because of its motion.
Latitude	A measure of relative position north or south on the Earth's surface, measured in degrees from the equator, which has a latitude of 0°, with the poles having a latitude of 90° north and south.
Law	A statement that describes invariable relationships among phenomena under a specified set of conditions.
Life cycle	The entire sequence of events in an organism's growth, development, and reproduction.
Life science	Any of several branches of science, such as biology, medicine, and ecology, that study the structural and functional organization of living organisms and their relationships to each other and the environment.
Ligation	Binding. In genetics, refers to binding fragments of DNA together.
Light	Electromagnetic radiation that lies within the visible range.
Liquid	One of the fundamental states of matter with a definite volume but no definite shape.
Lithosphere	The outer part of the solid earth composed of rock essentially like that exposed at the surface, consisting of the crust and outermost layer of the mantle, and usually considered to be about 60 miles (100 kilometers) in thickness.
Lunar eclipse	An eclipse in which the full moon passes partially or wholly through the umbra of the earth's shadow.
Lymphatic system	A network of vessels, tissues, and organs in vertebrate animals that helps the body regulate fluid balance and fight infection. The vessels of the lymphatic

	system drain excess fluid, called lymph, from the tissues and return it to the circulating blood.
Magnet	An object that produces a magnetic field and that has the property, either natural or induced, of attracting iron or steel.
Magnetic	Having the property of attracting iron and certain other materials by virtue of a field of force.
Magnetic field	The region where magnetic force exists around magnets or electric currents.
Magnetic force	The force exerted between magnetic poles, producing magnetization.
Mammal	Any of various warm-blooded vertebrate animals of the class Mammalia, including humans, characterized by a covering of hair on the skin and, in the female, milk-producing mammary glands for nourishing the young.
Mass	The amount of matter an object contains.
Matter	Substance that possesses inertia and occupies space, of which all objects are constituted.
Medulla	The central portion of an anatomical structure, such as the adrenal gland or the kidney.
Meiosis	The process of nuclear division in cells during which the number of chromosomes is reduced by half.
Melt	To be changed from a solid to a liquid state especially by the application of heat.
Membrane	A thin layer of tissue that surrounds or lines a cell, a group of cells, or a cavity; any barrier separating two fluids.
Meninx	A membrane, especially one of the three membranes enclosing the brain and spinal cord in vertebrates.
Metal	Any of a category of electropositive elements that usually have a shiny surface, are generally good conductors of heat and electricity, and can be melted or fused, hammered into thin sheets, or drawn into wires.
Metamorphic	A type of rock that forms from existing rock because of extreme changes caused by heat, pressure, or chemical environments.
Metamorphosis	Change in the form and often the habits of an animal during its development after birth or hatching. The transformation of a maggot into an adult fly and of a tadpole into an adult frog are examples of metamorphosis.
Microscope	An instrument with lenses and light that is used to observe objects too small to be visible with only the eyes.
Microwave	An electromagnetic wave with a wavelength between that of infrared and short waves (one millimeter to one meter).
Midbrain	The middle part of the vertebrate brain. In most animals except mammals, the midbrain processes sensory information. In mammals, it serves primarily to connect the forebrain with the hindbrain.
Milky Way Galaxy	The galaxy of which the sun and the solar system are a part and which contains the myriads of stars that create the light of the Milky Way.
Mineral	A naturally occurring, homogeneous inorganic solid substance having a definite chemical composition and characteristic crystalline structure, color, and hardness.
Mitochondrion	A spherical or elongated organelle in the cytoplasm of nearly all eukaryotic cells that uses enzymes and membranes to make chemical energy available to the cell to make food to usable energy.
Mitosis	A process of nuclear division in eukaryotic cells during which the nucleus of a cell divides into two nuclei, each with the same number of chromosomes.
Model	A systematic description of an object or phenomenon that shares important characteristics with the object or phenomenon. Scientific models can be material, visual, mathematical, or computational and are often used in the construction of scientific theories.
Mole	The amount of a substance that contains as many atoms, molecules, ions, or other elementary units as the number of atoms in 0.012 kilogram of carbon 12.

	The number is 6.0225×10^{23} , Avogadro's number.
Molecule	The smallest unit of matter of a substance that retains all the physical and chemical properties of that substance; consists of a single atom or a group of atoms bonded together.
Momentum	A vector quantity that is the product of an object's mass and velocity.
Monosaccharide	Any of a class of carbohydrates that cannot be broken down to simpler sugars by hydrolysis and that constitute the building blocks of oligosaccharides and polysaccharides.
Moon	A natural satellite that revolves around a planet.
Motion	The act or process of changing position and/or direction.
Mutation	A change in genetic sequence.
Natural resource	Something, such as a forest, a mineral deposit, or fresh water, that is found in nature and is necessary or useful to humans.
Natural selection	The theory stating every organism displays slight variations from related organisms, and these variations make an organism more or less suited for survival and reproduction in specific habitats.
Nervous system	The system of cells, tissues, and organs that regulates the body's responses to internal and external stimuli. In vertebrates it consists of the brain, spinal cord, nerves, ganglia, and parts of the receptor and effector organs.
Neutron	A subatomic particle having zero charge, found in the nucleus of an atom.
Nonrenewable resource	A resource that can only be replenished over millions of years.
Nuclear reaction	A process, such as fission, fusion, or radioactive decay, in which the structure of an atomic nucleus is altered through release of energy or mass or by being broken apart.
Nucleus	The center region of an atom where protons and neutrons are located; also a cell structure that contains the cell genetic material of the cell.
Objectivity	Expressing or dealing with facts or conditions as perceived without distortion by personal feelings, prejudices, or interpretations.
Observation	What one has observed using senses or instruments.
Offspring	The progeny or descendants of an animal or plant considered as a group.
Orbit	A path described by one body in its revolution about another (as by the earth about the sun or by an electron about an atomic nucleus).
Organ	A structure containing different tissues that are organized to carry out a specific function of the body (e.g., heart, lungs, brain, etc.)
Organelle	A differentiated structure within a cell, such as a mitochondrion, vacuole, or chloroplast, that performs a specific function.
Organism	An individual form of life of one or more cells that maintains various vital processes necessary for life.
Parasite	An organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host.
Parasympathetic nervous system	The part of the autonomic nervous system originating in the brain stem and the lower part of the spinal cord that, in general, inhibits or opposes the physiological effects of the sympathetic nervous system, as in tending to stimulate digestive secretions, slow the heart, constrict the pupils, and dilate blood vessels.
Periodic table	A tabular arrangement of the elements according to their atomic numbers so that elements with similar properties are in the same column.
pH	The measure of the acidity or alkalinity of a solution.
Phenotype	The observable characteristics of an organism resulting from the interaction of its genetic makeup and its environment.
Phospholipid	Any of various phosphorus-containing lipids, such as lecithin, that are composed mainly of fatty acids, a phosphate group, and a simple organic molecule such as glycerol.
Photosynthesis	A chemical process by which plants use light energy to convert carbon dioxide

	and water into carbohydrates (sugars).
Physical change	A reaction; a change in matter from one form to another, without forming new substances.
Physical science	Any of several branches of science, such as physics, chemistry, and astronomy, that study the nature and properties of energy and nonliving matter.
Physiology	The scientific study of an organism's vital functions, including growth, development, reproduction, the absorption and processing of nutrients, the synthesis and distribution of proteins and other organic molecules, and the functioning of different tissues, organs, and other anatomic structures.
Planet	A large body in space that orbits a star and does not produce light of its own.
Plasma	The pale yellow or gray-yellow, protein-containing fluid portion of the blood in which the blood cells and platelets are normally suspended.
Plate tectonics	Theory of global dynamics in which Earth's crust is divided into a smaller number of large, rigid plates whose movements cause seismic activity along their borders.
Pole	Either of the points at which the Earth's axis of rotation intersects the Earth's surface; the North Pole or South Pole.
Pollen	Powdery grains that contain the male reproductive cells of seed plants.
Pollination	The process by which plant pollen is transferred from the male reproductive organs to the female reproductive organs to form seeds. In flowering plants, pollen is transferred from the anther to the stigma by vectors such as the wind or insects.
Pollution	Any alteration of the natural environment producing a condition harmful to living organisms; may occur naturally or as a result of human activities.
Polygenic	Any of a group of nonallelic genes that collectively control the inheritance of a quantitative character or modify the expression of a qualitative character.
Polymorphism	The existence of two or more, usually discrete, different forms in an adult organism of the same species in the same habitat at the same time. In bees, the presence of queen, worker, and drone is an example of polymorphism. Differences between the sexes and between breeds of domesticated animals are not considered examples of polymorphism.
Polysaccharide	Any of a class of carbohydrates, such as starch and cellulose, consisting of a number of monosaccharides joined by glycosidic bonds.
Pons	A thick band of nerve fibers in the brainstem of humans and other mammals that links the brainstem to the cerebellum and upper portions of the brain. It is important in the reflex control of involuntary processes, including respiration and circulation. All neural information transmitted between the spinal cord and the brain passes through the pons.
Potential energy	Energy stored in a physical system due to the object's configuration and position.
Power	The rate at which work is done, expressed as the amount of work per unit time and commonly measured in units such as the watt and horsepower.
Precipitation	In meteorology, a form of water, such as rain, snow, or sleet that condenses from the atmosphere, becomes too heavy to remain suspended, and falls to the Earth's surface.
Producer	An organism, usually a plant or bacterium, that produces organic compounds from simple inorganic molecules and energy (typically light energy) from the environment.
Prokaryote	One-celled organisms of the kingdom Monera (or Prokaryota) that are the most primitive and ancient known forms of life.
Proton	A subatomic particle having a positive charge and which is found in the nucleus of an atom.
Pseudoscientific	A theory, methodology, or practice that is considered to be without scientific foundation.
Pteridophyte	Vascular plants that reproduce by means of spores rather than by seeds, including the ferns and related plants, such as club mosses and horsetails.

Pulmonary circulation	The passage of blood from the right side of the heart through arteries to the lungs where it picks up oxygen and is returned to the left side of the heart by veins.
Radiant energy	Energy in the form of waves, especially electromagnetic waves. Radio waves, x-rays, and visible light are all forms of radiant energy.
Radiation	Emission of energy in the form of rays or waves.
Radioactive dating	Measurement of the amount of radioactive material (usually carbon 14) that an object contains; can be used to estimate the age of the object.
Radioactivity	The property possessed by some elements (as uranium) or isotopes (as carbon 14) of spontaneously emitting energetic particles (as electrons or alpha particles) by the disintegration of their atomic.
Rate of reaction	The speed at which reactants are consumed and products are produced in a given reaction.
Recessive	An allele for a trait that will be masked unless the organism is homozygous for this trait.
Recycling	The collection and often reprocessing of discarded materials for reuse.
Reflection	The bouncing off or turning back of light, sound, or heat from a surface.
Reflex arc	The neural path of a reflex.
Refraction	A change in the direction of a wave that occurs as it passes from one medium to another of different density.
Relativity (special theory of)	The physical theory of space and time developed by Albert Einstein, based on the postulates that all the laws of physics are equally valid in all frames of reference moving at a uniform velocity and that the speed of light from a uniformly moving source is always the same, regardless of how fast or slow the source or its observer is moving. The theory has as consequences the relativistic mass increase of rapidly moving objects, the Lorentz-Fitzgerald contraction, time dilatation, and the principle of mass-energy equivalence.
Renewable resource	A resource that is replaced or restored, as it is used, by natural processes in a reasonable amount of time.
Replication	In scientific research, conducting an experiment to confirm findings or to ensure accuracy. In molecular biology, the process by which genetic material is copied in cells.
Reproduction	The sexual or asexual process by which organisms generate new individuals of the same kind and perpetuate the species.
Reproductive system	The system of organs involved with animal reproduction, especially sexual reproduction.
Repulsion	The tendency of particles or bodies of the same electric charge or magnetic polarity to separate.
Resistance	The opposition of a body or substance to current passing through it, resulting in a change of electrical energy into heat or another form of energy.
Respiratory system	The system of organs and structures in which gas exchange takes place, consisting of the lungs and airways in air-breathing vertebrates, gills in fish and many invertebrates, the outer covering of the body in worms, and specialized air ducts in insects.
Scientific method	A process that uses science process skills as tools to gather, organize, analyze, and communicate information.
Scientist	A person with expert knowledge of one or more sciences, that engages in processes to acquire and communicate knowledge.
Season	One of four natural divisions of the year—spring, summer, autumn, and winter—in temperate zones. Each season has its own characteristic weather and lasts approximately three months. The change in the seasons is brought about by the shift in the angle at which the Sun's rays strike the Earth. This angle changes as the Earth orbits in its yearly cycle around the Sun due to the tilt of the Earth's axis.
Sedimentary	Rock formed from layers of sediment that overlay and squeeze together or are

	chemically combined.
Semiconductor	Any of various solid crystalline substances, such as germanium or silicon, having electrical conductivity greater than insulators but less than good conductors, and used especially as a base material for computer chips and other electronic devices.
Sense	Any of the faculties by which stimuli from outside or inside the body are received and felt, as the faculties of hearing, sight, smell, touch, taste, and equilibrium.
Sexual reproduction	Reproduction involving the union of male and female gametes producing an offspring with traits from both parents.
Skeleton	The internal structure of vertebrate animals, composed of bone or cartilage, that supports the body, serves as a framework for the attachment of muscles, and protects the vital organs and associated structures.
Solar eclipse	An eclipse of the sun by the moon.
Solar system	A star and all the planets and other bodies that orbit it; the region in space where these bodies move.
Solid	Having a definite shape and a definite volume; one of the fundamental states of matter.
Solubility	The ability or tendency of one substance to dissolve in another at a given temperature and pressure.
Sound wave	Longitudinal pressure waves in any material medium regardless of whether they constitute audible sound; earthquake waves and ultrasonic waves are sometimes called sound waves.
Space	The limitless expanse where all objects and events occur. Outer space is the region of the universe beyond Earth's atmosphere.
Speed	Amount of distance traveled divided by time taken; the time-rate at which any physical process takes place.
Speed of light	A fundamental physical constant that is the speed at which electromagnetic radiation propagates in a vacuum and that has a value fixed by international convention of 299,792,458 meters per second.
Spinal cord	The long, cordlike part of the central nervous system that is enclosed within the vertebral column (spine) and descends from the base of the brain, with which it is continuous. The spinal cord branches to form the nerves that convey motor and sensory impulses to and from the tissues of the body.
Steroid	Any of numerous naturally occurring or synthetic fat-soluble organic compounds having, as a basis, 17 carbon atoms arranged in four rings and including the sterols and bile acids, adrenal and sex hormones, certain natural drugs such as digitalis compounds, and the precursors of certain vitamins.
Strong nuclear force	A fundamental interaction between elementary particles that causes protons and neutrons to bind together in the atomic nucleus.
Subjectivity	Modified or affected by personal views, experience, or background.
Sun	The closest star to Earth and the center of our solar system.
Supernatural	Of or relating to an order of existence beyond the visible observable universe.
Superposition	The principle that in a group of stratified sedimentary rocks the lowest were the earliest to be deposited.
Synapse	The junction across which a nerve impulse passes from one nerve cell to another nerve cell, a muscle cell, or a gland cell.
Systemic circulation	The general circulation of the blood through the body, as opposed to the circulation of the blood from the heart to the lungs and back to the heart.
Telescope	A usually tubular optical instrument for viewing distant objects by means of the refraction of light rays through a lens or the reflection of light rays by a concave mirror.
Thalamus	The part of the vertebrate brain that lies at the rear of the forebrain. It relays sensory information to the cerebral cortex and regulates the perception of touch, pain, and temperature.

Theory	A set of statements or principles devised to explain a group of facts or phenomena, especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena.
Thermometer	An instrument for measuring temperature, especially one having a graduated glass tube with a bulb containing a liquid, typically mercury or colored alcohol, that expands and rises in the tube as the temperature increases.
Tide	The regular rise and fall in the surface level of the Earth's oceans, seas, and bays caused by the gravitational attraction of the Moon and to a lesser extent of the Sun.
Tissue	Similar cells acting to perform a specific function.
Triglyceride	A naturally occurring ester of three fatty acids and glycerol that is the chief constituent of fats and oils.
Tubercle	A small rounded projecting part or outgrowth, such as a wartlike excrescence on the roots of some leguminous plants or a knoblike process in the skin or on a bone.
Ultraviolet	Relating to electromagnetic radiation having frequencies higher than those of visible light but lower than those of x-rays, approximately 10^{15} - 10^{16} hertz.
Ureter	The long, narrow duct that conveys urine from the kidney to the urinary bladder or cloaca.
Urethra	The canal through which urine is discharged from the bladder in most mammals and through which semen is discharged in the male.
Urinary bladder	An elastic, muscular sac situated in the anterior part of the pelvic cavity in which urine collects before excretion.
Vaccine	A preparation of a weakened or killed pathogen, such as a bacterium or virus, or of a portion of the pathogen's structure, that stimulates immune cells to recognize and attack it, especially through antibody production.
Vacuole	A cavity in the cytoplasm of a cell, bound by a single membrane and containing water, food, or metabolic waste.
Vacuum	A space empty of matter.
van der Waals Force	A weak force of attraction between electrically neutral molecules that collide with or pass very close to each other. The van der Waals force is caused by the attraction between electron-rich regions of one molecule and electron-poor regions of another (the attraction between the molecules seen as electric dipoles).
Variable	An event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment.
Velocity	The time rate at which a body changes its position vector; quantity whose magnitude is expressed in units of distance over time.
Vertebrate	Any of a large group of chordates of the subphylum Vertebrata (or Craniata), characterized by having a backbone. Vertebrates include fish, amphibians, reptiles, birds, and mammals.
Vibration	A periodic and repetitive movement around an equilibrium point.
Virus	A noncellular, usually disease-causing, particle with an outer protein code and a core of genetic material that is capable of growth and replication in living host cells.
Voltage	A measure of the difference in electric potential between two points in space, a material, or an electric circuit, expressed in volts.
Volume	A measure of the amount of space an object takes up; also the loudness of a sound or signal.
Water cycle	The path water takes as it is being cycled through the environment, including condensation, evaporation, and precipitation.
Wavelength	The distance between crests of a wave.
Weak nuclear force	A fundamental interaction between elementary particles that is several orders of magnitude weaker than the electromagnetic interaction and is responsible for

	some particle decay, nuclear beta decay, and neutrino absorption and emission.
Weight	The force with which a body is attracted to Earth or another celestial body, equal to the product of the object's mass and the acceleration of gravity.
X-ray	A high-energy stream of electromagnetic radiation having a frequency higher than that of ultraviolet light but less than that of a gamma ray (in the range of approximately 10^{16} - 10^{19} hertz).



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