

Abiotic	Not associated with or derived from living organisms
Acid rain	rain that contains a high concentration of pollutants, chiefly sulphur dioxide and nitrogen oxide, released into the atmosphere by the burning of fossil fuels such as coal or oil
Active Transport	The movement of ions or molecules across a cell membrane in the direction opposite that of diffusion, that is, from an area of lower concentration to one of higher concentration. a movement that requires the assistance of a type of protein called a carrier protein, using energy supplied by ATP
Adaptation	A change in structure, function, or behavior by which a species or individual improves its chance of survival in a specific environment
Adenine	A purine base that is a component of DNA and RNA, forming a base pair with thymine in DNA and with uracil in RNA
Aerobic Respiration	a type of respiration in which oxygen is taken in and carbon dioxide and water are produced
Agnatha	the class of vertebrates having no jaws or paired appendages
Allele	any of several forms of a gene, usually arising through mutation, that are responsible for hereditary variation.
Amino Acids	Any of a large number of compounds found in living cells that contain carbon, oxygen, hydrogen, and nitrogen, and join together to form proteins
Amphibia	the class of vertebrates that live on land but breed in water

Anaerobic Respiration	an incomplete intracellular breakdown of sugar or other organic compounds in the absence of oxygen that releases energy; cellular respiration in the absence of oxygen
Angiosperms	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
Animalia	Kingdom containing Animals
Anterior	The front surface of the body
Anther	The pollen-bearing part at the upper end of the stamen of a flower
Anticodon	A sequence of three adjacent nucleotides in transfer RNA that binds to a corresponding codon in messenger RNA and designates a specific amino acid during protein synthesis
Archaeobacteria	Kingdom with organisms that can exist in extreme conditions
Artificial Selection	Modification of a species by human intervention so that certain desirable traits are represented in successive generations
Asexual Reproduction	Reproduction in which offspring are produced by a single parent, without the union of reproductive cells
Autotroph	any organism capable of self-nourishment by using inorganic materials as a source of nutrients and using photosynthesis or chemosynthesis as a source of energy

<b>Aves</b>	<b>the class of vertebrates comprising the birds</b>
<b>Bacteria</b>	<b>Unicellular; Can be living; harmful or helpful</b>
<b>Base Pairing</b>	the hydrogen bonding that occurs between complementary nitrogenous bases in the two polynucleotide chains of a DNA molecule
<b>Bilateral Symmetry</b>	a basic body plan in which the left and right sides of the organism can be divided into approximate mirror images of each other along the midline
<b>Binomial Nomenclature</b>	a system for naming plants and animals by means of two Latin names: the first indicating the genus and the second the species to which the organism belongs
<b>Biodiversity</b>	The number, variety, and genetic variation of different organisms found within a specified geographic region
<b>Bioethics</b>	The study of the ethical and moral implications of Medical research and practice
<b>Biology</b>	<b>The scientific study of life and of living organisms</b>
<b>Biome</b>	A large community of plants and animals that occupies a distinct region
<b>Biotic</b>	<b>Consisting of living organisms</b>

Capsule	The outer layer of viscous polysaccharide or polypeptide slime with which some bacteria cover their cell walls
Carbohydrate	Organic compound made of sugar
Carrying Capacity	The maximum population of a particular organism that a given environment can support without detrimental effects
Cell Wall	The outermost layer of cells in plants, bacteria, fungi, and many algae that gives shape to the cell and protects it from infection
Centriole	Either of a pair of cylinder-shaped bodies found in the centrosome of most eukaryotic organisms other than plants
Charles Darwin	English natural scientist who formulated a theory of evolution by natural selection
Chemoautotroph	an organism that depends on inorganic chemicals for its energy and principally on carbon dioxide for its carbon
chemosynthesis	the formation of organic material by certain bacteria using energy derived from simple chemical reactions
Chloroplast	A plastid in the cells of green plants and green algae that contains chlorophylls and carotenoid pigments and creates glucose through photosynthesis
Chondrichthyes	cartilaginous fish

<b>Chordate</b>	The phylum of animals whose members have a single dorsal nerve cord and a notochord and gill slits during some stage in their development
<b>Chromosome</b>	A structure in all living cells that consists of a single molecule of DNA bonded to various proteins and that carries the genes determining heredity
<b>Cilia</b>	A tiny hairlike projection on the surface of some cells and microscopic organisms
<b>Climax Community</b>	An ecological community in which populations of plants or animals remain stable and exist in balance with each other and their environment; the final stage of succession, remaining relatively unchanged until destroyed by an event such as fire or human interference
<b>Coccus</b>	<b>Any of various bacteria having a round or ovoid form</b>
<b>Codon</b>	A sequence of three adjacent nucleotides on a strand of a nucleic acid that constitutes the genetic code for a specific amino acid that is to be added to a polypeptide chain during protein synthesis
<b>Coelom</b>	The body cavity that forms from the mesoderm during the embryonic development of more complex animals
<b>Commensalism</b>	A symbiotic relationship in which one organism derives benefit while causing little or no harm to the other
<b>Community</b>	A group of organisms or populations living and interacting with one another in a particular environment
<b>Comparative Anatomy</b>	The investigation and comparison of the structures of different animals

Competition	The simultaneous demand by two or more organisms for limited environmental resources, such as nutrients, living space, or light
Competitive Exclusion	the dominance of one species over another when both are competing for the same resources
Consumer	A heterotrophic organism that feeds on other organisms in a food chain
Convergent Evolution	the appearance of apparently similar structures in organisms of different lines of descent
Creationism	the doctrine that matter and all things were created, substantially as they now exist, by an omnipotent Creator, and not gradually evolved or developed
Cross Fertilization	Process when the pollen from an anther of one flower is transferred to the stigma of another flower
Cuticle	A layer of wax and cutin that covers the outermost surfaces of a plant
Cytosine	A pyrimidine base that is a component of DNA and RNA, forming a base pair with guanine
DDT	A powerful insecticide that is also poisonous to humans and animals
Decomposer	An organism that feeds on and breaks down dead plant or animal matter, returning essential nutrients to the ecosystem

Deforestation	The cutting down and removal of all or most of the trees in a forested area
Density Dependent Limiting Factor	an environmental factor that depends on the density of the population and that tends to limit population size
Density Independent Limiting Factor	an environmental factor that doesn't depend on the density of the population and that tends to limit population size
Dichotomous Key	used to identify a plant or animal in which each stage presents descriptions of two distinguishing characters, with a direction to another stage in the key, until the species is identified
Dicot	any member of the angiosperms, that has a pair of leaves in the embryo of the seed
Diploid	Having paired sets of chromosomes in a cell or cell nucleus
Divergent Evolution	the process by which a species evolves into two or more descendant or different forms
DNA	The nucleic acid that is the genetic material determining the makeup of all living cells and many viruses
Dominant Trait	a trait that will appear in the offspring if one of the parents contributes it
Dorsal	Relating to or on the back or upper surface of an animal

Double helix	The three-dimensional structure of double-stranded DNA, in which polymeric nucleotide strands whose complementary nitrogen bases are linked by hydrogen bonds form a helical configuration
Down Syndrome	A congenital disorder caused by the presence of an extra 21st chromosome; people with down syndrome have mild to moderate mental retardation, short stature, and a flattened facial profile
Ecological Succession	the gradual and orderly process of change in an ecosystem brought about by the progressive replacement of one community by another until a stable climax is established
Ecology	The scientific study of the relationships between living things and their environments
Ecosystem	the interaction of a community of organisms with their environment
Ectoderm	The outermost of the three primary germ layers of an embryo, from which the epidermis, nervous tissue, and sense organs develop
Ectotherm	a cold-blooded animal
Embryo	the young of a viviparous animal, especially of a mammal, in the early stages of development within the womb, in humans up to the end of the second month
Endoderm	The innermost of the three primary germ layers of an embryo, developing into the gastrointestinal tract, the lungs, and associated structures
Endoplasmic Reticulum	An organelle consisting of a network of membranes within the cytoplasm of eukaryotic cells that is important in protein synthesis and folding and is involved in the transport of cellular materials



Endoskeleton	The internal supporting framework of humans and other vertebrates, usually made of bone
Endospore	A rounded, inactive form that certain bacteria assume under conditions of extreme temperature, dryness, or lack of food
Endosymbiosis	when one organism lives inside the other, the two typically behaving as a single organism
Endotherm	a warm-blooded animal
Energy Pyramid	a depiction of the amount of energy in each trophic level of an ecosystem
Essential Amino Acids	Amino Acids that can't be synthesized in the cells of humans and must be consumed as part of the diet
Eubacteria	Kingdom containing Bacteria
Eukaryote	any organism having as its fundamental structural unit a cell type that contains specialized organelles in the cytoplasm, a membrane-bound nucleus enclosing genetic material organized into chromosomes, and an elaborate system of division by mitosis or meiosis
Evolution	The process by which species of organisms arise from earlier life forms and undergo change over time through natural selection
Existing cells	Where do all cells come from?

Exoskeleton	A hard, protective outer body covering of an animal, such as an insect, crustacean, or mollusk
Exponential Growth	a constant rate of growth applied to a continuously growing base over a period of time
Filament	The part of a stamen that supports the anther of a flower; the stalk of a stamen
Flagella	A slender whiplike part extending from some single-celled organisms, that moves rapidly back and forth to impart movement to the organism
Food Chain	The sequence of the transfer of food energy from one organism to another in an ecological community
Food Web	The complex system of interrelated food chains in an environment
Fossil record	the total number of fossils that have been discovered, as well as the information derived from them
Fruit	any structure that encloses and protects a seed
Fungi	Kingdom containing Fungi
Galapagos Islands	a group of islands in the Pacific off South America where Charles Darwin formed the basis of his theory of natural selection

Gamete	a mature sexual reproductive cell, as a sperm or egg, that unites with another cell to form a new organism.
Gene	A segment of DNA, occupying a specific place on a chromosome, that is the basic unit of heredity
Gene Pool	The collective genetic information contained within a population of sexually reproducing organisms
Gene Therapy	The treatment of a disorder or disease, especially one caused by the inheritance of a defective gene, by replacing defective genes with healthy ones through genetic engineering
Genetic Engineering	the development and application of scientific methods, procedures, and technologies that permit direct manipulation of genetic material in order to alter the hereditary traits of a cell, organism, or population
Genotype	the genetic makeup of an organism or group of organisms with reference to a single trait, set of traits, or an entire complex of traits.
Global Warming	An increase in the average temperature of the Earth's atmosphere, especially a sustained increase great enough to cause changes in the global climate
Golgi Body	An organelle in eukaryotic cells that stores and modifies proteins for specific functions and prepares them for transport to other parts of the cell
Gram Negative bacteria	bacteria that does not retain the genetic violet
Gram Positive bacteria	bacteria that retains the genetic violet

Gram Stain	a staining technique used to classify bacteria; bacteria are stained with gentian violet and then treated with Gram's solution
Greenhouse Effect	The retention of part of the Sun's energy in the Earth's atmosphere in the form of heat as a result of the presence of greenhouse gases
Gregor Mendel	Augustinian monk and botanist whose experiments in breeding garden peas led to his eventual recognition as founder of the science of genetics
Guanine	A purine base that is a component of DNA and RNA, forming a base pair with cytosine
Gymnosperm	Any of a group of seed-bearing plants whose ovules are not enclosed in an ovary
Habitat	The area or natural environment in which an organism or population normally lives
Haploid	Having a single set of each chromosome in a cell or cell nucleus
Heterozygous	having dissimilar pairs of genes for any hereditary characteristic
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
Homologous Structure	structures corresponding in structure and in origin, but not necessarily in function

Homozygous	having identical pairs of genes for any given pair of hereditary characteristics
Hypertonic	noting a solution of higher osmotic pressure than another solution with which it is compared
Hyphae	One of the long slender tubes that develop from germinated spores and form the structural parts of the body of a fungus
Hypotonic	noting a solution of lower osmotic pressure than another solution with which it is compared
Intelligent Design	the doctrine that rejects the theory of natural selection, arguing that the complexities of the universe and of all life suggest an intelligent cause in the form of a supreme creator
Interphase	In what stage do cells spend most of their time?
Invertebrate	An animal that has no backbone or spinal column and therefore does not belong to the subphylum Vertebrata of the phylum Chordata
Isotonic	noting or pertaining to a solution containing the same salt concentration as mammalian blood
Lipid	Organic compound made of fat
Mammalia	warm-blooded vertebrates characterized by mammary glands in the female

Meiosis	the process by which the nucleus divides in all sexually reproducing organisms during the production of spores or gametes
Mesoderm	The middle embryonic germ layer from which connective tissue, muscle, bone, and the urogenital and circulatory systems develop
Messenger RNA	RNA that carries genetic information from the cell nucleus to the ribosomes where protein synthesis takes place
Microenvironment	The environment of a very small, specific area, distinguished from its immediate surroundings by such factors as the amount of incident light, the degree of moisture, and the range of temperatures
Mitochondria	A structure in the cytoplasm of all cells except bacteria in which food molecules are broken down in the presence of oxygen and converted to energy in the form of ATP
Mitosis	the process by which the nucleus divides, in eukaryotic organisms, producing two new nuclei that are genetically identical to the nucleus of the parent cell
Monera	a kingdom of prokaryotic organisms that typically reproduce by asexual budding or fission and have a nutritional mode of absorption, photosynthesis, or chemosynthesis
Monocot	Any of a class of angiosperm plants having a single cotyledon in the seed
Mutation	a sudden change different than the parent type in one or more heritable characteristics, caused by a change in a gene or a chromosome
Mutualism	A symbiotic relationship in which each of the organisms benefits

Mycelium	The mass of hyphae that forms the main growing structure of a fungus
Natural Selection	The process by which organisms that are better suited to their environment than others produce more offspring
Nitrogenous Base	One of the nitrogen-containing purines (adenine or guanine) or pyrimidines (cytosine, thymine, or uracil) found in the nucleic acids DNA and RNA
Nondisjunction	the failure of chromosomes to separate and segregate into daughter cells at division
Notochord	Backbone
Nucleic Acid	Organic compound made of sugar and phosphate
Nucleotide	Any of a group of organic compounds composed of a nucleoside linked to a phosphate group
Nucleus	An organelle in the cytoplasm of eukaryotic cells that contains nearly all the cell's DNA and controls its metabolism, growth, and reproduction
Observe, Question, Hypothesis, Test, Conclusion	Scientific Method (OQHTC)
Osteichthyes	a class of fish having a skeleton composed of bone in addition to cartilage

Ovary	The part of a carpel or of a gynoecium made of fused carpels that contains the ovules in a flower
Ovum	the female reproductive cell or gamete of animals, which is capable of developing, usually only after fertilization, into a new individual.
Parasitism	A symbiotic relationship in which one organism benefits and the other is generally harmed
Passive Transport	transport of a substance across a cell membrane by diffusion; expenditure of energy is not required
Petal	One of the often brightly colored parts of a flower surrounding the reproductive organs
pH scale	provides a measure on a scale from 0 to 14 of the acidity or alkalinity of a solution (where 7 is neutral and greater than 7 is more basic and less than 7 is more acidic)
Phenotype	The expression of a specific trait based on genetic and environmental influences.
Phosphate	A salt or ester of phosphoric acid, containing the group $PO_4$
Phylogeny	The evolutionary development and history of a species or higher taxonomic grouping of organisms
Pilus	A fine filamentous appendage, somewhat analogous to the flagellum, that occurs on some bacteria



<b>Pistil</b>	One of the female reproductive organs of a flower, consisting of a single carpel or of several carpels fused together
<b>Plantae</b>	<b>Kingdom containing Plants</b>
<b>Plasma membrane</b>	The thin membrane that forms the outer surface of the protoplasm of a cell and regulates the passage of materials in and out of the cell
<b>Pollution</b>	The contamination of air, water, or soil by substances that are harmful to living organisms
<b>Population</b>	A group of individuals of the same species occupying a particular geographic area
<b>Posterior</b>	<b>Near the tail end of the body</b>
<b>Predation</b>	A relationship between two species of animal in a community, in which one hunts, kills, and eats the other
<b>Predator</b>	<b>An animal that lives by capturing and eating other animals</b>
<b>Prey</b>	<b>an animal hunted or captured by another for food</b>
<b>Producer</b>	An autotrophic organism that serves as a source of food for other organisms in a food chain. Producers include green plants, which produce food through photosynthesis, and certain bacteria that are capable of converting inorganic substances into food through chemosynthesis

<b>Prokaryote</b>	any cellular organism that has no nuclear membrane, no organelles in the cytoplasm except ribosomes, and has its genetic material in the form of single continuous strands forming coils or loops
<b>Protein Synthesis</b>	the process by which individual amino acids are connected to each other in a specific order dictated by the nucleotide sequence in DNA
<b>Protein</b>	<b>Organic compound made of amino acids</b>
<b>Protista</b>	<b>Kingdom containing Protists</b>
<b>Provirus</b>	The precursor form of a virus that is capable of being integrated into the genetic material of a host cell and being replicated with it
<b>Pseudocoelom</b>	the body cavity of certain invertebrate metazoan animals between the body wall and the intestine
<b>Pseudopodia</b>	A temporary footlike extension of a one-celled organism, such as an amoeba, used for moving about and for surrounding and taking in food
<b>Punnett Square</b>	a type of grid used to show the gametes of each parent and their possible offspring; a type of grid that can indicate all the possible outcomes of a genetic cross
<b>Radial Symmetry</b>	a basic body plan in which the organism can be divided into similar halves by passing a plane at any angle along a central axis
<b>Recessive Trait</b>	a trait that must be contributed by both parents in order to appear in the offspring

Recombinant DNA	DNA in which one or more segments or genes have been inserted, either naturally or by laboratory manipulation, from a different molecule or from another part of the same molecule, resulting in a new genetic combination
Replication	the process by which exact copies of complex molecules, such as DNA molecules, that occurs during growth of living organisms
Reptilia	the class of cold-blooded air-breathing vertebrates with completely ossified skeleton and a body usually covered with scales or horny plates
Ribosome	A sphere-shaped structure within the cytoplasm of a cell that is composed of RNA and protein and is the site of protein synthesis
Rod	A straight slender cylindrical formation
Seed	A mature fertilized ovule of angiosperms or gymnosperms that contains an embryo and the food it will need to grow into a new plant
Self Fertilization	Process when the pollen from an anther of one flower fertilizes the eggs on the same flower
Sepal	One of the usually separate, green parts that surround and protect the flower bud and extend from the base of a flower after it has opened
Sexual Reproduction	reproduction of organisms by the union of male and female reproductive cells
Speciation	The formation of new biological species by the development or branching of one species into two or more genetically distinct ones

Spirillum	Any of various bacteria that are shaped like a spiral
Spore	A similar one-celled body in seed-bearing plants
Sporophyte	In organisms which display an alternation of generations the individual diploid organism that produces spores
Stigma	The sticky tip of a flower pistil, on which pollen is deposited at the beginning of pollination
Stoma	One of the tiny openings in the epidermis of a plant, through which gases and water vapor pass
Style	The slender part of a flower pistil, extending from the ovary to the stigma
Taxon	A taxonomic category or group, such as a phylum, order, family, genus, or species
taxonomy	the science dealing with the description, identification, naming, and classification of organisms
Thymine	A pyrimidine base that is a component of DNA. It forms a base pair with adenine
Transcription	The process by which mRNA is synthesized from a DNA template resulting in the transfer of genetic information from the DNA molecule to mRNA

Transfer RNA	RNA that delivers the amino acids necessary for protein synthesis to the ribosomes
Traslation	The process by which mRNA, tRNA, and ribosomes effect the production of a protein molecule from amino acids, the specificity of synthesis being controlled by the base sequences of the mRNA
Trophic Level	Any of the sequential stages in a food chain, occupied by producers at the bottom and in turn by primary, secondary, and tertiary consumers
Tumor	an uncontrolled, abnormal, circumscribed growth of cells in any animal or plant tissue
Uracil	A pyrimidine base that is a component of RNA, forming a base pair with adenine during transcription
Vacuole	A cavity within the cytoplasm of a cell, surrounded by a single membrane and containing fluid, food, or metabolic waste
Ventral	Relating to or on the front or lower surface of an animal
Vertebrate	Any of a large group of chordates of the subphylum Vertebrata (or Craniata), characterized by having a backbone
Vestigial Structures	Relating to a body part that has become small and lost its use because of evolutionary change
Virus	Acellular; Don't move or grow; Don't breathe

<p><b>Virus</b></p>	<p>Any of various extremely small, often disease-causing agents consisting of a particle containing a segment of RNA or DNA within a protein coat known as a capsid</p>
<p><b>Zoology</b></p>	<p>The scientific study of organisms in the kingdom Animalia, including their growth and structure</p>
<p><b>Zygote</b></p>	<p>the cell produced by the union of two gametes, before it undergoes cleavage.</p>