

active transport – The movement of chemical substance, usually across the cell membrane, against a concentration gradient; requires cells to use **energy**.

Adaptive radiation –Diversification of a species or single ancestral type into several forms that are each adaptively specialized to a specific environmental niche.

Alleles – one of the alternative forms of a gene that governs a characteristic, such as hair color.

Ambiguity - doubtfulness or uncertainty of meaning or intention: *to speak with ambiguity; an ambiguity of manner.*

Anabolic – The phase of metabolism in which simple substances are synthesized into the complex materials of living tissue

Analogous - Similar in function but not in structure and evolutionary origin – ex: Butterfly and bird wing

Angiosperms- A plant whose ovules are enclosed in an ovary; a **flowering plant**

Archaeobacteria – a classification kingdom made up of bacteria that live in extreme environments; differentiated from other prokaryotes by various important chemical differences.

Bacterial plasmids – a DNA molecule that is separate from and can replicate independently of the chromosomal DNA, it is typically a ring or a circle.

Binomial nomenclature - The scientific naming of species ---each species receives a Latin name of two parts, the first indicating the genus and the second being the species. – Example: *Homo sapien*

Bottle neck- is an evolutionary event in which a significant percentage of a population or species is killed or otherwise prevented from reproducing

Co dominant – a condition which both alleles for a gene are fully expressed.

Culture media –something used to grow organisms like bacteria – i.e. agar

Cyclical – a process of repeating events

Dehydration synthesis –The monomers of organic compounds join together by a chemical reaction know as *dehydration synthesis* to make polymers. The reverse reaction of breaking up polymers is accomplished by another chemical reaction known as *hydrolysis*.

Diploid – a cell that contains **two** haploid sets of chromosomes

Electrophoresis –the process by which electrically charged particles suspend in a liquid move through the liquid because for the influence of an electric field.

Emigration – To leave one country or region to settle in another.

Endosymbiosis - type of symbiosis in which one organism lives inside the other, the two typically behaving as a single organism. It is believed to be the means by which such organelles as mitochondria and chloroplasts arose within eukaryotic cells

Equilibrate – To be in or bring about equilibrium

Eubacteria – a classification kingdom that contains all prokaryotes except archaeobacteria

Eukaryote – an organism made up of cells that **have a nucleus** enclosed by a membrane, multiple chromosomes, and a mitotic cycle; eukaryotes include animals, plants, and fungi but not bacteria or cyanobacteria.

Exacuated – To whet or sharpen

Frame shift mutation - A mutation in a DNA chain that occurs when the number of nucleotides inserted or deleted is not a multiple of three, so that every codon beyond the point of insertion or deletion is read incorrectly during translation

Gene flow – the movements of genes into or out of a population due to interbreeding.

Genetic drift – Random fluctuations in the frequency of the appearance of a gene in a small isolated population, presumably owing to chance rather than natural selection.

Genomes – The total genetic content contained in a haploid set of chromosomes in eukaryotes, in a single chromosome in bacteria, or in the DNA or RNA of viruses

Gradient - A series of progressively increasing or decreasing differences in the growth rate, metabolism, or physiological activity of a cell, organ, or organism.

Herbicide – A chemical substance used to destroy or inhibit the growth of plants, especially weeds.

Immigration – To enter and settle in a country or region to which one is not native

Insertion mutation – is the addition of one or more nucleotide base pairs into a DNA sequence.

Internal feedback mechanism – (1) A loop system in which the system responds to perturbation either in the same direction (positive feedback) or in the opposite direction (negative feedback). (2) A process in which the level of one substance influences the level of another substance. (3) A mechanism or a signal that tends to initiate (or accelerate) or to inhibit (or slow down) a process.

Isotonic – a solution whose solute concentration is **equal** to the solute concentration inside the cell

Karyotype – an array of the chromosomes found in an individual's cells at metaphase of mitosis and arranged in homologous pairs and in order of diminishing size.

Macromolecules – A very large molecule, such as a polymer or protein, consisting of many smaller structural units linked together. Also called *supermolecule*.

Maturation – **a.** The processes by which gametes are formed, including the reduction of chromosomes in a germ cell from the diploid number to the haploid number by meiosis.

b. The final differentiation processes in biological systems, such as the final ripening of a seed or the attainment of full functional capacity by a cell, a tissue, or an organ.

Mechanism – a) The involuntary and consistent response of an organism to a given stimulus b) The arrangement of connected parts in a machine

Messenger RNA – mRNA – a single-stranded RNA molecule that encodes the information to make a protein.

Metabolic – the sum of all chemical processes that occur in an organism

Microorganisms – any organism of microscopic size

Molecular homology – similarity of nucleotide sequences of DNA or RNA molecules, or the amino acid sequences of proteins

Monomers – molecules that can be bonded to other identical molecules to form polymers

Motile – capable of **motion**

Niches – the positions (ways of life) of a species in an ecosystem in terms of the physical characteristics (such as size, location, temperature, and pH) of the area where the species lives and the function of the species in the biological community

Nomenclature – *see binomial nomenclature*

Nonsense mutation - a point mutation in a sequence of DNA that results in a premature stop codon, or a nonsense codon in the transcribed mRNA, and in a truncated, incomplete, and usually nonfunctional protein product.

Nucleated cells – cells that have or contain a nucleus

Parameters - A variable whose measure is indicative of a quantity or function that cannot itself be precisely determined by direct methods, for example, blood pressure and pulse rate are parameters of cardiovascular function and the level of glucose in blood and urine is a parameter of carbohydrate metabolism.

Passive Transport – movement of substances across the cell membrane without the use of energy

Peristalsis - The process of wave-like muscle contractions of the alimentary tract that moves food along peristalsis

Plasmids - A linear or circular double-stranded DNA that is capable of replicating independently of the chromosomal DNA.

Point Mutation - A mutation in DNA or RNA molecule involving a change of only one nucleotide base.

Polymer - A compound made up of several repeating units

Primitive - Undeveloped or in early stages of development, undifferentiated.

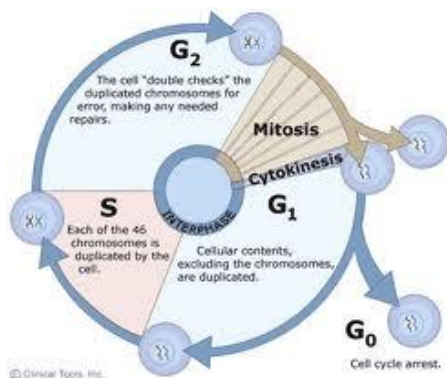
Prokaryote – No nucleus--Any of the group of organisms primarily characterized by the lack of true nucleus and other membrane-bound cell compartments

Protein capsid - The protein coat surrounding the nucleic acid of a virus

Protista - A taxonomic kingdom comprised of protists, characterized by being eukaryotic and mostly single-celled

Restriction enzyme - An enzyme that catalyzes the cleavage of DNA at restriction sites, producing small fragments used for gene splicing in recombinant DNA technology and for chromosome mapping.

S phase - is the part of the cell cycle in which DNA is replicated, occurring between G₁ phase and G₂ phase.



Sink – phloem - A tissue in a vascular plant that functions primarily in transporting organic food materials (e.g. sucrose) from the photosynthetic organ (leaf) to all the parts of the plant.

Stabilizing selection – is a type of natural selection in which genetic diversity decreases as the population stabilizes on a particular trait value. This is probably the most common mechanism of action for natural selection

Stem cells- An unspecialized cell characterized by the ability to self-renew by mitosis while in undifferentiated state, and the capacity to give rise to various differentiated cell types by cell differentiation.

Strata – 1) (*histology*) Any from the layers of tissues arranged one atop another, thus forming an anatomical structure

(2) (*ecology*) A layer of plants or vegetation usually of the same or similar height

(3) (*general*) One of the stack of horizontal layers

Sucrose – type of sugar -disaccharide of fructose and glucose

Taxonomic system - (1) The science of finding, describing, classifying, and naming organisms, including the studying of the relationships between taxa and the principles underlying such a classification. (2) The classification of organisms in a hierarchical system or in taxonomic ranks (e.g. domain, kingdom, phylum or division, class, genus, species) based on shared characteristics or on phylogenetic relationships inferred from the fossil record or established by genetic analysis.

Translation –A step in protein biosynthesis wherein the genetic code carried by mRNA is decoded to produce the specific sequence of amino acids in a polypeptide chain. The process follows transcription in which the DNA sequence is copied (or transcribed) into an mRNA.

Zygote - A cell in diploid state following fertilization or union of haploid male sex cell (e.g. sperm) and haploid female sex cell (e.g. ovum).