Biology Dictionary

Web site:

http://www.phschool.com/science/biology_place/glossary/index.html This collection of over 1000 biological terms and definitions is available for quick reference as you use The Biology Place, Classic Edition.

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A

Abaxial

The term abaxial (or dorsal) describes a plant part, side or surface facing away from the the axis of any organ or part; eccentric.

Abdomen

In vertebrates, the portion of the trunk containing visceral organs other than heart and lungs; in arthropods, the posterior portion of the body, made up of similar segments and containing the reproductive organs and part of the digestive tract.

Abiotic

Nonliving; specifically, the nonliving components of an ecosystem, such as temperature, humidity, the mineral content of the soil, etc.

Aboral

Upsied down, : the aboral surface of a starfish.Pertaining to away from the mouth in organisms with no distinct front or back sides

Abscisic acid

A plant hormone that generally acts to inhibit growth, promote dormancy, and help the plant tolerate stressful conditions.

Abscission

In plants, the dropping of leaves, flowers, fruits, or stems at the end of a growing season, as the result of formation of a two-layered zone of specialized cells (the abscission zone) and the action of a hormone.

Absorption

The movement of water and dissolved substances into a cell, tissue, or organism.

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Absorption spectrum

The range of a pigment's ability to absorb various wavelengths of light.

Abyssal zone

The portion of the ocean floor where light does not penetrate and where temperatures are cold and pressures intense.

Acanthocephala

The spiny-headed worms, a phylum of helminths; adults are parasitic in the alimentary canal of vertebrates.

Accessory cells

Any nonlymphocytic cell that helps in the induction of the immune response by presenting antigen to a helper T lymphocyte.

Acoelomates

An animal that lacks a coelom. Acoelomates, which include the flatworm, fluke, tapeworm, and ribbon worm, exhibit bilateral symmetry and possess one internal space, the digestive cavity.

Acclimatization

Physiological adjustment to a change in an environmental factor.

accommodation

The automatic adjustment of an eye to focus on near objects.

Acellular

Containg no cells; not made of cells.

Accessory Cell

A cell which is associated with the guard cell of a stoma

Acetylcholine

One of the most common neurotransmitters; functions by binding to receptors and altering the permeability of the postsynaptic membrane to specific ions, either depolarizing or hyperpolarizing the membrane.

Acetyl CoA

The entry compound for the Krebs cycle in cellular respiration; formed from a fragment of pyruvate attached to a coenzyme.

Achlamydeous

Not having a floral envelope or perianth.

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Acid

A substance that increases the hydrogen ion concentration in a solution.

Acid precipitation

Rain, snow, or fog that is more acidic than pH 5.6.

Acoelomate

A solid-bodied animal lacking a cavity between the gut and outer body wall.

Acrocentric

Having the centromere located near one end of the chromosome so that one chromosomal arm is long and the other is short.

Acrosome

An organelle at the tip of a sperm cell that helps the sperm penetrate the egg.

ACTH

Abbreviation of adrenocorticotropic hormone.

Actin

A globular protein that links into chains, two of which twist helically about each other, forming microfilaments in muscle and other contractile elements in cells.

Actinomorphic

Capable of being divided into equal halves along any diameter, as the flowers of the rose or tulip; radially symmetrical.

Action potential

A rapid change in the membrane potential of an excitable cell, caused by stimulus-triggered, selective opening and closing of voltage-sensitive gates in sodium and potassium ion channels.

Activation energy

The energy that must be possessed by atoms or molecules in order to react.

Active site

The specific portion of an enzyme that attaches to the substrate by means of weak chemical bonds.

Active transport

The movement of a substance across a biological membrane against its concentration or electrochemical gradient, with the help of energy input and specific transport proteins.

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Adaptation

The evolution of features that make a group of organisms better suited to live and reproduce in their environment.

Adaptive peak

An equilibrium state in a population when the gene pool has allele frequencies that maximize the average fitness of a population's members.

Adaptive radiation

The emergence of numerous species from a common ancestor introduced into an environment, presenting a diversity of new opportunities and problems.

Adenosine diphosphate

A nucleotide consisting of adenine, ribose, and two phosphate groups; formed by the removal of one phosphate from an ATP molecule.

Adenosine monophosphate

A nucleotide consisting of adenine, ribose, and one phosphate group; can be formed by the removal of two phosphates from an ATP molecule; in its cyclic form, functions as a "second messenger" for a number of vertebrate hormones and neurotransmitters. Adenosine triphosphate

An adenine-containing nucleoside triphosphate that releases free energy when its phosphate bonds are hydrolyzed. This energy is used to drive endergonic reactions in cells.

Adenylyl cyclase

An enzyme that converts ATP to cyclic AMP in response to a chemical signal.

ADH

Abbreviation of antidiuretic hormone.

Adhesion

The tendency of different kinds of molecules to stick together.

ADP

Abbreviation of adenosine diphosphate.

Adaxial

In botany terminology adaxial describes a side or surface nearest or facing toward the axis of an organ or organism, such as the upper surface of a leaf lamina

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Adipocytes

Any of various cells found in adipose tissue that are specialized for the storage of fat. Also called adipocyte.

Adnate

Unlike parts or organs; growing closely attached

Adrenal gland

An endocrine gland located adjacent to the kidney in mammals; composed of two glandular portions: an outer cortex, which responds to endocrine signals in reacting to stress and effecting salt and water balance, and a central medulla, which responds to nervous inputs resulting from stress.

Adrenaline

A hormone, produced by the medulla of the adrenal gland, that increases the concentration of glucose in the blood, raises blood pressure and heartbeat rate, and increases muscular power and resistance to fatigue; also a neurotransmitter across synaptic junctions. Also called epinephrine.

Adrenocorticotropic hormone (ACTH)

A hormone, produced by the anterior lobe of the pituitary gland, that stimulates the production of cortisol by the adrenal cortex.

Adventitious

Referring to a structure arising from an unusual place, such as roots growing from stems or leaves.

Aerenchyma

A spongy tissue with large air spaces found between the cells of the stems and leaves of aquatic plants, providing buoyancy and allowing the circulation of gases. Aerobic

Containing oxygen; referring to an organism, environment, or cellular process that requires

oxygen.

Aerial

Exsiting or living in the air.

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Aestivation

Cessation from or slowing of activity during the summer; especially slowing of metabolism in some animals

Afferent

Bringing inward to a central part, applied to nerves and blood vessels.

Agar

A gelatinous material prepared from certain red algae that is used to solidify nutrient media for growing microorganisms.

Age structure

The relative number of individuals of each age in a population.

Agnathan

A member of a jawless class of vertebrates represented today by the lampreys and hagfishes.

Agonistic behavior

A type of behavior involving a contest of some kind that determines which competitor gains access to some resource, such as food or mates.

Alburnum

The outer zone of wood in a tree, next to the bark. Sapwood is generally lighter than heartwood.

AIDS (acquired immunodeficiency syndrome)

The name of the late stages of HIV infection; defined by a specified reduction of T cells and the appearance of characteristic secondary infections.

Airsacs

An air-filled space in the body of a bird that forms a connection between the lungs and bone

cavities and aids in breathing and temperature regulation.

Aldehyde

An organic molecule with a carbonyl group located at the end of the carbon skeleton.

Aldosterone

An adrenal hormone that acts on the distal tubules of the kidney to stimulate the reabsorption of sodium (Na^+) and the passive flow of water from the filtrate.

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Aleurone layer

The outermost cell layer of the endosperm of the grains (seeds) of wheat and other grasses; when acted upon by gibberellin, the aleurone layer releases enzymes that digest the stored food of the endosperm into small nutrient molecules that can be taken up by the embryo.

Algae

A photosynthetic, plantlike protist.

Alligator

Either of two large reptiles, Alligator mississipiensis of the southeast United States or A. sinensis of China, having sharp teeth and powerful jaws. They differ from crocodiles in having a broader, shorter snout.

Alimentary canal

The tube or passage of the digestive system through which food passes, nutrients are absorbed, waste is eliminated.

Alkalinity

pHvalues above 7.

Alkaline

Pertaining to substances that increase the relative number of hydroxide ions (OH^-) in a solution; having a pH greater than 7; basic; opposite of acidic.

Alkaloids

A type of chemical commonly found in plants and often having medical properties. e.g.: atropine, caffeine, morphine, nicotine, quinine.

All-or-none event

An action that occurs either completely or not at all, such as the generation of an action potential by a neuron.

Allantois

One of four extraembryonic membranes; serves as a repository for the embryo's nitrogenous waste.

Allele

An alternative form of a gene.

Allele frequency

The proportion of a particular allele in a population.

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Allergic reaction

An inflammatory response triggered by a weak antigen (an allergen) to which most individuals do not react; involves the release of large amounts of histamine from mast cells.

Allometric growth

The variation in the relative rates of growth of various parts of the body, which helps shape the organism.

Allopatric speciation

A mode of speciation induced when the ancestral population becomes segregated by a geographical barrier.

Allopolyploid

A common type of polyploid species resulting from two different species interbreeding and combining their chromosomes.

Allosteric site

A specific receptor site on an enzyme molecule remote from the active site. Molecules bind to the allosteric site and change the shape of the active site, making it either more or less receptive to the substrate.

Allozymes

Slightly different versions of the same enzyme, distinguishable via gel electrophoresis.

Alpha helix

A spiral shape constituting one form of the secondary structure of proteins, arising from a

specific hydrogen-bonding structure.

Alternation of generations

A life cycle in which there is both a multicellular diploid form, the sporophyte, and a multicellular haploid form, the gametophyte; characteristic of plants. Alternative splicing

In alternative splicing, the same pre-mRNA molecule, which consists of introns and exons, is spliced in different ways to produce mature mRNAs of different lengths and different functionality.

Altruistic behavior

The aiding of another individual at one's own risk or expense.

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Alveolus

One of the deadend, multilobed air sacs that constitute the gas exchange surface of the lungs. Or One of the milk-secreting sacs of epithelial tissue in the mammary glands.

Amino acids

An organic molecule possessing both carboxyl and amino groups. Amino acids serve as the monomers of proteins.

Amino group

A functional group that consists of a nitrogen atom bonded to two hydrogen atoms; can act as a base in solution, accepting a hydrogen ion and acquiring a charge of +1. Aminoacyl

A family of enzymes, at least one for each amino acid, that catalyze the attachment of an amino acid to its specific tRNA molecule.

Amitosis

Direct cell devision, that is, the cell divides by simple cleavage of the nucles without formation of spireme spindle figures or chromosomes.

Ammonification

The process by which decomposers break down proteins and amino acids, releasing the excess nitrogen in the form of ammonia (NH_3) or ammonium ion (NH_4^+). Amniocentesis

A technique for determining genetic abnormalities in a fetus by the presence of certain

chemicals or defective fetal cells in the amniotic fluid, obtained by aspiration from a needle inserted into the uterus.

Amnion

The innermost of four extraembryonic membranes; encloses a fluid-filled sac in which the embryo is suspended.

Amniote

A vertebrate possessing an amnion surrounding the embryo; reptiles, birds, and mammals are amniotes.

Amniotic egg

A shelled, water-retaining egg that enables reptiles, birds, and egg-laying mammals to complete their life cycles on dry land.

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Amoeboid

Moving or feeding by means of pseudopodia (temporary cytoplasmic protrusions from the cell body).

AMP

Abbreviation of adenosine monophosphate.

Amphibia

The vertebrate class of amphibians, represented by frogs, salamanders, and caecilians.

Amphibious

Living or able to live both land and water.

Amphipathic molecule

A molecule that has both a hydrophilic region and a hydrophobic region.

Amphioxus

Any of various small, flattened marine organisms of the subphylum Cephalochordata, structurally similar to the vertebrates but having a notochord rather than a true vertebral column. Also called amphioxus.

Amphoteric

Having the characteristics of an acid and a base and capable of reacting chemically either as an acid or a base.

Amphistomatic.

Of a leaf, Having stomata on both surfaces

Amylopectin

The outer protion of a starch granule consisting of insoluble, highly branched polysaccharides of high molecular weight.

Amyloplasts/ starch plastids

Amyloplasts are non-pigmented organelles found in plant cells responsible for the storage of amylopectin, a from of starch, through the polymerization of glucose. Amyloplasts also convert this starch into sugar, for when the plant needs energy.

Anabolic steroids

Synthetic chemical variants of the male sex hormone testosterone; they produce increased muscle mass but also suppress testosterone production, leading to shrinkage of the testes, growth of the breasts, and premature baldness; long-term use increases the risk of kidney and liver damage and of liver cancer.

Anabolism

Within a cell or organism, the sum of all biosynthetic reactions (that is, chemical reactions in which larger molecules are formed from smaller ones).

Anaerobic

Lacking oxygen; referring to an organism, environment, or cellular process that lacks oxygen and may be poisoned by it.

Anagenesis

A pattern of evolutionary change involving the transformation of an entire population, sometimes to a state different enough from the ancestral population to justify renaming it as a separate species; also called phyletic evolution.

Analogy

The similarity of structure between two species that are not closely related; attributable to convergent evolution.

Analogous

Applied to structures similar in function but different in evolutionary origin, such as the wing of a bird and the wing of an insect.

Anaphase

The third stage of mitosis, beginning when the centromeres of duplicated chromosomes divide and sister chromotids separate from each other, and ending when a complete set of daughter chromosomes are located at each of the two poles of the cell. Anatomy

The morphological structure of a plant or an animal or of any of its parts.

Androecium

The male reproductive organs of a flower considered as a group; the stamens. Compare gynoecium.

Androgen

The principal male steroid hormones, such as testosterone, which stimulate the development and maintenance of the male reproductive system and secondary sex characteristics.

Aneuploidy

A chromosomal aberration in which certain chromosomes are present in extra copies or are deficient in number.

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Angiosperms

A flowering plant, which forms seeds inside a protective chamber called an ovary.

Animalia

Animals are a major group of multicellular organisms, of the kingdom Animalia or metazoa.

animal starch

One form in which body is fuel is stored; stored primarily in the liver and broken down into glucose when needed by the body.

Anisogamous

A union between two gametes that differ in size of form.

Anion

A negatively charged ion.

Anklebones

The bone in the ankle that articulates with the leg bones to form the ankle joint

Annual

A plant that completes its entire life cycle in a single year or growing season.

Antennae

Long, paired sensory appendages on the head of many arthropods.

Anterior

Referring to the head end of a bilaterally symmetrical animal.

Anther

The terminal pollen sac of a stamen, inside which pollen grains with male gametes form in the flower of an angiosperm.

Antheridium

In plants, the male gametangium, a moist chamber in which gametes develop.

Anthocyanin

Natural water-soluble pigments of blue, purple or red which are dissolved in the cell-sap vacuole of plant cells.

Anthropoid

A higher primate; includes monkeys, apes, and humans.

Antibiotic

A chemical that kills bacteria or inhibits their growth.

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Antibiotic resistance

Antibiotic resistance is the ability of a microorganism to withstand the effects of an antibiotic. It is a specific type of drug resistance.

Antibody

An antigen-binding immunoglobulin, produced by B cells, that functions as the effector in an immune response.

Anticodon

A specialized base triplet on one end of a tRNA molecule that recognizes a particular complementary codon on an mRNA molecule.

Antidiuretic hormone (ADH)

A hormone important in osmoregulation.

Antigen

A foreign macromolecule that does not belong to the host organism and that elicits an immune response.

Anus

The opening at the lower end of the digestive tract through which solid waste is excreated.

Anurans

Any of numerous tailless, aquatic, semiaquatic, or terrestrial amphibians of the order Anura and especially of the family Ranidae, characteristically having a smooth moist skin, webbed feet, and long hind legs adapted for leaping.

Aorta

The major artery in blood-circulating systems; the aorta sends blood to the other body tissues.

Appendicular

Elating to, or consisting of an appendage or appendages, especially the limbs: the appendicular skeleton.

Aphotic zone

The part of the ocean beneath the photic zone, where light does not penetrate sufficiently for photosynthesis to occur.

Apical dominance

Concentration of growth at the tip of a plant shoot, where a terminal bud partially inhibits axillary bud growth.

Apical meristem

Embryonic plant tissue in the tips of roots and in the buds of shoots that supplies cells for the plant to grow in length.

Apocarpous

Consisting of carpels that are free from one another as in buttercups or roses.

Apomorphic character

A derived phenotypic character, or homology, that evolved after a branch diverged from a phylogenetic tree.

Apoplast

In plants, the nonliving continuum formed by the extracellular pathway provided by the continuous matrix of cell walls.

Apoptosis

Programmed cell death brought about by signals that trigger the activation of a cascade of

"suicide" proteins in the cells destined to die.

Aposematic coloration

The bright coloration of animals with effective physical or chemical defenses that acts as a warning to predators.

Aquaporin

A transport protein in the plasma membranes of a plant or animal cell that specifically facilitates the diffusion of water across the membrane (osmosis).

Aqutic

Consisting of, relating to, or being in water; an aquatic environment.

Aqueous solution

A solution in which water is the solvent.

Arboreal

Tree-dwelling.

Archaea

One of two prokaryotic domains, the other being the Bacteria.

Arches

Arches are curved structures, arch-like in profile, which span the foot.

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Archenteron

The central cavity of the gastrula, which ultimately becomes the intestinal or digestive cavity.

Archegonium

In plants, the female gametangium, a moist chamber in which gametes develop.

Archenteron

The endoderm-lined cavity, formed during the gastrulation process, that develops into the digestive tract of an animal.

Archezoa

Primitive eukaryotic group that includes diplomonads, such as Giardia; some systematists assign kingdom status to archezoans.

Arteriole

A very small artery. See also artery.

Arteries

Arteries are blood vessels that carry blood away from the heart

Artery

A vessel that carries blood away from the heart to organs throughout the body.

Arteriosclerosis

A cardiovascular disease caused by the formation of hard plaques within the arteries.

Artificial selection

The selective breeding of domesticated plants and animals to encourage the occurrence of desirable traits.

Ascus

A saclike spore capsule located at the tip of the ascocarp in dikaryotic hyphae; defining feature of the Ascomycota division of fungi.

Asexual reproduction

A type of reproduction involving only one parent that produces genetically identical offspring by budding or by the division of a single cell or the entire organism into two or more parts.

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Aschelminth

The Aschelminthes (also known as Aeschelminthes, Nemathelminthes, or Pseudocoelomata), closely associated with the Platyhelminthes, are an obsolete phylum of pseudocoelomate and other similar animals that are no longer considered closely related and have been promoted to phyla in their own right.

Assimilation

The energy-requiring process by which plant cells convert nitrate ions (NO_3^-) taken up by the roots of plants into ammonium ions (NH_4^+), which can then be used in the synthesis of amino acids and other nitrogenous compounds.

Associative learning

The acquired ability to associate one stimulus with another; also called classical

conditioning.

Assortative mating

A type of nonrandom mating in which mating partners resemble each other in certain phenotypic characters.

Astragalus

The bone of the ankle which articulates with the bones of the leg. Also known as talus.

Astrocytes

A star-shaped cell, especially a neuroglial cell of nervous tissue.

Asymmetrical

Irregular in shape or outline.

Asymmetric carbon

A carbon atom covalently bonded to four different atoms or groups of atoms.

Atactostele

A type of monocotyledonous siphonostele in which the vascular bundles are dispersed irregularly throughout the center of the stem.

Atmospheric pressure

The weight of the Earth's atmosphere over a unit area of the Earth's surface.

Atom

The smallest unit of matter that retains the properties of an element.

Atomic mass

The mass of an atom of a chemical element expressed in atomic mass units.

Atomic number

The number of protons in the nucleus of an atom, unique for each element and designated by a subscript to the left of the elemental symbol.

Atomic Theory

The physical theory of the structure, properties, and behavior of the atom.

Atomic weight

The total atomic mass, which is the mass in grams of one mole of the atom.

ATP

Abbreviation of adenosine triphosphate, the principal energy-carrying compound of the cell.

ATP synthase

A cluster of several membrane proteins found in the mitochondrial cristae (and bacterial plasma membrane) that function in chemiosmosis with adjacent electron transport chains, using the energy of a hydrogen-ion concentration gradient to make ATP. ATP synthases provide a port through which hydrogen ions diffuse into the matrix of a mitrochondrion.

Atrioventricular node

A group of slow-conducting fibers in the atrium of the vertebrate heart that are stimulated by impulses originating in the sinoatrial node (the pacemaker) and that conduct impulses to the bundle of His, a group of fibers that stimulate contraction of the ventricles.

Atrioventricular valve

A valve in the heart between each atrium and ventricle that prevents a backflow of blood when the ventricles contract.

Atrium

A chamber that receives blood returning to the vertebrate heart.

Auricles

The flap of the ear in the form of a funnel-like organ which collects the sound waves. Called also pinna.

Autocatalysis

A single chemical reaction is said to have undergone autocatalysis, or be autocatalytic, if the reaction product is itself the catalyst for that reaction.

Autoecious

Having all stages of a life cycle occurring on the same host. Eg.; fungi

Autogenesis model

According to this model, eukaryotic cells evolved by the specialization of internal membranes originally derived from prokaryotic plasma membranes.

Autoimmune disease

An immunological disorder in which the immune system turns against itself.

Autonomic nervous system

A subdivision of the motor nervous system of vertebrates that regulates the internal

environment; consists of the sympathetic and parasympathetic divisions.

Autopolyploid

A type of polyploid species resulting from one species doubling its chromosome number to become tetraploid, which may self-fertilize or mate with other tetraploids. Autosomes

A chromosome that is not directly involved in determining sex, as opposed to the sex chromosomes.

Autotroph

An organism that obtains organic food molecules without eating other organisms. Autotrophs use energy from the sun or from the oxidation of inorganic substances to make organic molecules from inorganic ones.

Autumn wood

The season of the year between summer and winter, lasting from the autumnal equinox to the winter solstice and from September to December in the Northern Hemisphere; fall.

Auxin

A class of plant hormones, including indoleacetic acid (IAA), having a variety of effects, such as phototropic response through the stimulation of cell elongation, stimulation of secondary growth, and the development of leaf traces and fruit.

Auxotroph

A nutritional mutant that is unable to synthesize and that cannot grow on media lacking certain essential molecules normally synthesized by wild-type strains of the same species.

Aves

The vertebrate class of birds, characterized by feathers and other flight adaptations.

Axial

Relating to, characterized by, or forming an axis.

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Axile

Situated along the central axis of an ovary having two or more locules.

Axillary buds

An embryonic shoot present in the angle formed by a leaf and stem.

Axial filaments

The central filament of a flagellum or cilium. Also called axoneme.

Axis

An imaginary line passing through a body or organ around which parts are symmetrically aligned.

Axon

A typically long extension, or process, from a neuron that carries nerve impulses away from the cell body toward target cells.

B

B cell

A type of lymphocyte that develops in the bone marrow and later produces antibodies, which mediate humoral immunity.

Bacilli (pl.) Bacillus (Sin.)

Aerobic rod-shaped spore-producing bacterium; often occurring in chainlike formations

Bacteria

One of two prokaryotic domains, the other being the Archaea.

Bacteriophage

A virus that parasitizes a bacterial cell.

Bacterium (Sin.) Bacteria (Pl.)

A prokaryotic microorganism in Domain Bacteria.

Balanced polymorphism

A type of polymorphism in which the frequencies of the coexisting forms do not change noticeably over many generations.

Bark

All tissues external to the vascular cambium in a plant growing in thickness, consisting of phloem, phelloderm, cork cambium, and cork.

Barr body

A dense object lying along the inside of the nuclear envelope in female mammalian cells, representing an inactivated X chromosome.

Basal

Located at or near the base of a plant stem, or at the base of any other plant part.

Basal body

A eukaryotic cell organelle consisting of a 9 + 0 arrangement of microtubule triplets; may organize the microtubule assembly of a cilium or flagellum; structurally identical to a centriole.

Basal metabolic rate (BMR)

The minimal number of kilocalories a resting animal requires to fuel itself for a given time.

Base

A substance that reduces the hydrogen ion concentration in a solution.

Basement membrane

The floor of an epithelial membrane on which the basal cells rest.

Base-pair substitution

A point mutation; the replacement of one nucleotide and its partner from the complementary DNA strand by another pair of nucleotides.

Base-pairing principle

In the formation of nucleic acids, the requirement that adenine must always pair with thymine (or uracil) and guanine with cytosine.

Basidium

A reproductive appendage that produces sexual spores on the gills of mushrooms. The fungal division Basidiomycota is named for this structure.

Basifixed

Attached by the base, as certain anthers are to their filaments.

Batesian mimicry

A type of mimicry in which a harmless species looks like a different species that is poisonous or otherwise harmful to predators.

Behavior

All of the acts an organism performs, as in, for example, seeking a suitable habitat, obtaining food, avoiding predators, and seeking a mate and reproducing.

Behavioral ecology

A heuristic approach based on the expectation that Darwinian fitness (reproductive success) is improved by optimal behavior.

Benthic zone

The bottom surfaces of aquatic environments.

Benign

Not life-threatening or severe, and likely to respond to treatment, as a tumor that is not malignant.

Biannuals

Occurring twice a year.

Biennial

A plant that requires two years to complete its life cycle.

Bilateral symmetry

Characterizing a body form with a central longitudinal plane that divides the body into two equal but opposite halves.

Bilateria

Members of the branch of eumetazoans possessing bilateral symmetry.

Bile

A yellow secretion of the vertebrate liver, temporarily stored in the gallbladder and composed of organic salts that emulsify fats in the small intestine.

Binary fission

The type of cell division by which prokaryotes reproduce; each dividing daughter cell receives a copy of the single parental chromosome.

Binomial

The two-part Latinized name of a species, consisting of genus and specific epithet.

Biochemical pathway

An ordered series of chemical reactions in a living cell, in which each step is catalyzed by a specific enzyme; different biochemical pathways serve different functions in the life of the cell.

Biodiversity hotspot

A relatively small area with an exceptional concentration of species.

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Bioenergetics

The study of how organisms manage their energy resources.

Biogeochemical cycles

The various nutrient circuits, which involve both biotic and abiotic components of ecosystems.

Biogeography

The study of the past and present distribution of species.

Biological clock

Proposed internal factor(s) in organisms that governs functions that occur rhythmically in the absence of external stimuli.

Biological magnification

A trophic process in which retained substances become more concentrated with each link in the food chain.

Biological species

A population or group of populations whose members have the potential to interbreed.

Biomass

The dry weight of organic matter comprising a group of organisms in a particular habitat.

Biome

One of the world's major communities, classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment. Biosphere

The entire portion of Earth that is inhabited by life; the sum of all the planet's communities and ecosystems.

Biosynthesis

Formation by living organisms of organic compounds from elements or simple compounds.

Biotechnology

The industrial use of living organisms or their components to improve human health and food production.

Biotic

Pertaining to the living organisms in the environment.

Bipedal

Walking upright on two feet.

Bisexual

Having both male and female reproductive organs; hermaphroditic.

Biting

Causing a stinging sensation; nipping: biting cold.

Bivalve

Having a shell consisting of twohinged valves.

Bivalent

A pair of homologous, synapsed chromosomes associated together during meiosis.

Blade

The broad, expanded photosynthetic part of the thallus of a multicellular alga or a simple plant.

Blastocoel

The fluid-filled cavity that forms in the center of the blastula embryo.

Blastocyst

An embryonic stage in mammals; a hollow ball of cells produced one week after fertilization in humans.

Blastodisc

Disklike area on the surface of a large, yolky egg that undergoes cleavage and gives rise to the embryo.

Blastopore

The opening of the archenteron in the gastrula that develops into the mouth in protostomes and the anus in deuterostomes.

Blastula

The hollow ball of cells marking the end stage of cleavage during early embryonic development.

Blood

A type of connective tissue with a fluid matrix called plasma in which blood cells are suspended.

Blood flukes.

A blood fluke species related to schistosoma haematobium which lives in the blood of host like human

Blood-brain barrier

A specialized capillary arrangement in the brain that restricts the passage of most substances into the brain, thereby preventing dramatic fluctuations in the brain's environment.

Blood pressure

The hydrostatic force that blood exerts against the wall of a vessel.

Blood vascular system

When blood vessels connect to form a region of diffuse vascular supply it is called an anastomosis

Biology

The scientific study of life and of living organisms. Botany, zoology, and ecology are all branches of biology.

Bond energy

The quantity of energy that must be absorbed to break a particular kind of chemical bond; equal to the quantity of energy the bond releases when it forms.

Bond strength

The strength with which a chemical bond holds two atoms together; conventionally measured in terms of the amount of energy, in kilocalories per mole, required to break the bond.

Bony

Having a internal skeleton of bones.

Book lungs

Organs of gas exchange in spiders, consisting of stacked plates contained in an internal chamber.

Botany

The study of plants.

Bottleneck effect

Genetic drift resulting from the reduction of a population, typically by a natural disaster, such that the surviving population is no longer genetically representative of the original population.

Biology Dictionary

Bowman's capsule

A cup-shaped receptacle in the vertebrate kidney that is the initial, expanded segment of the nephron where filtrate enters from the blood.

Box

A small portion of a gene or protein that appears in many genes or proteins that are related in structure; the box usually has some specific function, sometimes called a "motif", like binding DNA or interacting with specific proteins or other molecules.

Brain

The master control center in an animal; in vertebrates, the brain and spinal cord make up the central nervous system.

Brainstem

The hindbrain and midbrain of the vertebrate central nervous system. In humans, it forms a cap on the anterior end of the spinal cord, extending to about the middle of the brain.

Bracteates

Having bracts.

Bryophyte

The mosses, liverworts, and hornworts; a group of nonvascular plants that inhabit the land but lack many of the terrestrial adaptations of vascular plants.

Bronchus

One of a pair of respiratory tubes branching into either lung at the lower end of the trachea; it subdivides into progressively finer passageways, the bronchioles, culminating in the alveoli.

Bucco-pharyngeal

Pertaining to the cheek and the pharynx or to the mouth and the pharynx. (In amphibians respiration takes place by mouth cavity also)

Bud

(1) In plants, an embryonic shoot, including rudimentary leaves, often protected by special bud scales.

(2) In animals, an asexually produced outgrowth that develops into a new individual.

Budding

An asexual means of propagation in which outgrowths from the parent form and pinch off to live independently or else remain attached to eventually form extensive colonies.

Biology Dictionary

Buffer

A substance that consists of acid and base forms in solution and that minimizes changes in pH when extraneous acids or bases are added to the solution.

Bulb

A modified bud with thickened leaves adapted for underground food storage.

Bulbils

A small bulb or buld-shaped growth arising from the leaf axil or in the place of flowers.

Bulbourethral gland

One of a pair of glands near the base of the penis in the human male that secrete fluid that lubricates and neutralizes acids in the urethra during sexual arousal.

Bulk flow

The movement of water due to a difference in pressure between two locations.

Bundle cap

A bundle cap is a a cluster of fibers that covers the top of the top or the phloem side of the vascular bundle.

Bulliform cells

One of the large, highly vacuolated cells occurring in the epidermis of grass leaves. Also known as motor cell.

Bundle of His

In the vertebrate heart, a group of muscle fibers that carry impulses from the atrioventricular node to the walls of the ventricles; the only electrical bridge between the atria and the ventricles.

C

C_3 pathway

A metabolic pathway where CO_2 is converted to 3-phosphogylycerate, the first stable intermediate organic compound containing three carbon atoms

C_3 plant

A plant that uses the Calvin cycle for the initial steps that incorporate CO_2 into organic material, forming a three-carbon compound as the first stable intermediate.

Biology Dictionary

C_4 pathway

The set of reactions by which some plants initially fix carbon in the four-carbon compound oxaloacetic acid; the carbon dioxide is later released in the interior of the leaf and enters the Calvin cycle.

C_4 plant

A plant that prefaces the Calvin cycle with reactions that incorporate CO_2 into four-carbon compounds, the end-product of which supplies CO_2 for the Calvin cycle. Cartilage

A tough, elastic, fibrous connective tissue found in various parts of the body, such as the joints, outer ear, and larynx. A major constituent of the embryonic and young vertebrate skeleton, it is converted largely to bone with maturation.

Caretenoids

Any of a group of yellow, orange, red, or brown pigments found in many living organisms, particularly in the chloroplasts of plants.

Calcaneum

The quadrangular bone at the back of the tarsus. Also called heel

bone. Calcitonin

A mammalian thyroid hormone that lowers blood calcium levels.

Calcium oxalate

A small, colorless crystal that may be present in urine or may be a component of real calculi.

Callus

In plants, undifferentiated tissue; a term used in tissue culture, grafting, and wound healing.

Calmodulin

An intracellular protein to which calcium binds in its function as a second messenger in hormone action.

Calorie

The amount of heat energy required to raise the temperature of 1 g of water 1°C; the amount of heat energy that 1 g of water releases when it cools by 1°C. The Calorie (with a capital C), usually used to indicate the energy content of food, is a kilocalorie. Calvin cycle The second of two major stages in photosynthesis (following the light reactions), involving atmospheric CO_2 fixation and reduction of the fixed carbon into carbohydrate.

Biology Dictionary

Calyx

Collectively, the sepals of a flower.

CAM photosynthesis

Crassulacean acid metabolism, also known as CAM photosynthesis, is an elaborate carbon fixation pathway in some photosynthetic plants. CAM is usually found in plants living in arid conditions, including cacti and pineapples.

CAM plant

A plant that uses crassulacean acid metabolism, an adaptation for photosynthesis in arid conditions, first discovered in the family Crassulaceae. Carbon dioxide entering open stomata during the night is converted into organic acids, which release CO_2 for the Calvin cycle during the day, when stomata are closed.

Cambrian explosion

A burst of evolutionary origins when most of the major body plans of animals appeared in a relatively brief time in geological history; recorded in the fossil record about 545 to 525 million years ago.

Cancer

A serious disease resulting from a malignant growth or tumour, caused by abnormal and uncontrolled cell division.

Canine

One of the four pointed conical teeth located between the incisors and the premolars.

Canal system

A tube, duct, or passageway.

Capillary

A microscopic blood vessel that penetrates the tissues and consists of a single layer of endothelial cells that allows exchange between the blood and interstitial fluid.

Capillary action

The movement of water or any liquid along a surface; results from the combined effect of cohesion and adhesion.

Capillaries

Capillaries are the smallest of a body's blood vessels.

Biology Dictionary

Capsid

The protein shell that encloses the viral genome; rod-shaped, polyhedral, or more completely shaped.

Capsule

A slimy layer around the cells of certain bacteria.

Copulatory

Coupled; joined

Carapace

A hard bony or chitinous outer covering, such as the fused dorsal plates of a turtle or the portion of the exoskeleton covering the head and thorax of a crustacean. Carbohydrate

A sugar (monosaccharide) or one of its dimers (disaccharides) or polymers (polysaccharides).

Carbohydrates

Compounds,, such as cellulose, sugar, and starch, that contain only carbon, hydrogen, and oxygen, and are a major part of the diets of people and other animals. Carbon cycle

Worldwide circulation and reutilization of carbon atoms, chiefly due to metabolic processes of living organisms. Inorganic carbon, in the form of carbon dioxide, is incorporated into organic compounds by photosynthetic organisms; when the organic compounds are broken down in respiration, carbon dioxide is released. Large quantities of carbon are "stored" in the seas and the atmosphere, as well as in fossil fuel deposits.

Carbon fixation

The incorporation of carbon from CO_2 into an organic comspound by an autotrophic organism (a plant, another photosynthetic organism, or a chemoautotrophic bacterium).

Carbonyl group

A functional group present in aldehydes and ketones, consisting of a carbon atom double bonded to an oxygen atom.

Carboxyl group

A functional group present in organic acids, consisting of a single carbon atom double bonded to an oxygen atom and also bonded to a hydroxyl group.

Biology Dictionary

Carcinogen

A chemical agent that causes cancer.

Cardiac muscle

A type of muscle that forms the contractile wall of the heart; its cells are joined by intercalated discs that relay each heartbeat.

Cardiac output

The volume of blood pumped per minute by the left ventricle of the heart.

Cardiac muscle

The specialized striated muscle tissue of the heart; the myocardium.

Cardiovascular system

A closed circulatory system with a heart and branching network of arteries, capilleries, and veins.

Carnivore

An animal, such as a shark, hawk, or spider, that eats other animals.

Carotenoids

Accessory pigments, yellow and orange, in the chloroplasts of plants; by absorbing wavelengths of light that chlorophyll cannot, they broaden the spectrum of colors that can drive photosynthesis.

Carotid arteries

Either of the two principal arteries on both sides of the neck that supply blood to the head and neck. Also known as common carotid artery.

Carpel

The female reproductive organ of a flower, consisting of the stigma, style, and ovary.

Carrying capacity

The maximum population size that can be supported by the available resources, symbolized as K.

Cartilage

A type of flexible connective tissue with an abundance of collagenous fibers embedded in chondrin.

Cartilaginous

Having a skeleton consisting mainly of cartilage.

Biology Dictionary

Casparian strip

A water-impermeable ring of wax around endodermal cells in plants that blocks the passive flow of water and solutes into the stele by way of cell walls.

Catabolic pathway

A metabolic pathway that releases energy by breaking down complex molecules into simpler compounds.

Catabolism

Within a cell or organism, the sum of all chemical reactions in which large molecules are broken down into smaller parts.

Catabolite activator protein (CAP)

In E. coli, a helper protein that stimulates gene expression by binding within the promoter region of an operon and enhancing the promoter's ability to associate with RNA polymerase.

Catalyst

A substance that lowers the activation energy of a chemical reaction by forming a temporary association with the reacting molecules; as a result, the rate of the reaction is accelerated. Enzymes are catalysts.

Category

In a hierarchical classification system, the level at which a particular group is ranked.

Cation

An ion with a positive charge, produced by the loss of one or more electrons.

Cation exchange

A process in which positively charged minerals are made available to a plant when hydrogen

ions in the soil displace mineral ions from the clay particles.

Cdc genes

A gene that regulates the cell cycle. Also known as CDC gene.

Cell

A basic unit of living matter separated from its environment by a plasma membrane; the fundamental structural unit of life.

Cell center

A region in the cytoplasm near the nucleus from which microtubules originate and radiate.

Biology Dictionary

Cell cycle

An ordered sequence of events in the life of a dividing eukaryotic cell, composed of the M, G_1, S, and G_2 phases.

Cell-cycle control system

A cyclically operating set of proteins that triggers and coordinates events in the eukaryotic cell cycle.

Cell division

The process in reproduction and growth by which a cell divides to form daughter cells.

Cell fractionation

The disruption of a cell and separation of its organelles by centrifugation.

Cell inclusions

The act of including or the state of being included.

Cell-mediated immunity

The type of immunity that functions in defense against fungi, protists, bacteria, and viruses inside host cells and against tissue transplants, with highly specialized cells that circulate in the blood and lymphoid tissue.

Cell membrane

The outer membrane of the cell; the plasma membrane.

Cell organelles

A specialized part of a cell; “the first organelle to be identified was the nucleus”.

Cell plate

A double membrane across the midline of a dividing plant cell, between which the new cell wall forms during cytokinesis.

Cell theory

All living things are composed of cells; cells arise only from other cells. No exception has been found to these two principles since they were first proposed well over a century ago.

Cellular

Consisting of or containing a cell or cells

Cellular level

Process that occurs in cellular

Biology Dictionary

Cell wall

A protective layer external to the plasma membrane in plant cells, bacteria, fungi, and some protists. In the case of plant cells, the wall is formed of cellulose fibers embedded in a polysaccharide-protein matrix. The primary cell wall is thin and flexible, whereas the secondary cell wall is stronger and more rigid, and is the primary constituent of wood.

Cellular differentiation

The structural and functional divergence of cells as they become specialized during a multicellular organism's development; dependent on the control of gene expression.

Cellular respiration

The most prevalent and efficient catabolic pathway for the production of ATP, in which oxygen is consumed as a reactant along with the organic fuel.

Cellulose

A structural polysaccharide of cell walls, consisting of glucose monomers joined by (1-4) glycosidic linkages.

Celsius scale

A temperature scale (°C) equal to 5/9 (°F – 32) that measures the freezing point of water at 0°C and the boiling point of water at 100°C.

Centrifugation process

An apparatus in which humans or animals are enclosed and which is revolved to simulate the effects of acceleration in a spacecraft.

Centipede

A small wormlike creature with many legs.

Centrioles

One of two cylindrical cellular structures that are composed of nine triplet microtubules and form the asters during mitosis.

Central nervous system (CNS)

In vertebrate animals, the brain and spinal cord.

Centrifugation

Centrifugation is a process that involves the use of the centrifugal force for the separation of mixtures.

Biology Dictionary

Centriole

A structure in an animal cell, composed of cylinders of microtubule triplets arranged in a 9 + 0 pattern. An animal cell usually has a pair of centrioles, which are involved in cell division.

Centromere

The centralized region joining two sister chromatids.

Centrosome

Material present in the cytoplasm of all eukaryotic cells and important during cell division; also called microtubule-organizing center.

Cephalochordate

A chordate without a backbone, represented by lancelets, tiny marine animals.

Cerebellum

Part of the vertebrate hindbrain (rhombencephalon) located dorsally; functions in unconscious coordination of movement and balance.

Cerebral cortex

The surface of the cerebrum; the largest and most complex part of the mammalian brain, containing sensory and motor nerve cell bodies of the cerebrum; the part of the vertebrate

brain most changed through evolution.

Cerebral ganglia

They transmit nerve pulse activity so nerve cells can 'talk' to each other.

Cerebral hemispheres

Either of the two symmetrical halves of the cerebrum, as divided by the longitudinal cerebral fissure.

Cerebroside

Any of various lipid compounds containing glucose or galactose and glucose, and found in the brain and other nerve tissue.

Cerebrum

The dorsal portion, composed of right and left hemispheres, of the vertebrate forebrain; the integrating center for memory, learning, emotions, and other highly complex functions of the central nervous system.

Biology Dictionary

Chaparral

A scrubland biome of dense, spiny evergreen shrubs found at midlatitudes along coasts where cold ocean currents circulate offshore; characterized by mild, rainy winters and long, hot, dry summers.

Character displacement

A phenomenon in which species that live together in the same environment tend to diverge in those characteristics that overlap; exemplified by Darwin's finches.

Chelonia

An order of the Reptilia, subclass Anapsida, including the turtles, terrapins, and tortoises.

Chemical bond

An attraction between two atoms resulting from a sharing of outer-shell elctrons or the presence of opposite charges on the atoms; the bonded atoms gain complete outer electron shells.

Chemical equilibrium

In a reversible chemical reaction, the point at which the rate of the forward reaction equals the rate of the reverse reaction.

Chemical reaction

A process leading to chemical changes in matter; involves the making and/or breaking of chemical bonds.

Chemiosmosis

The production of ATP using the energy of hydrogen-ion gradients across membranes to phosphorylate ADP; powers most ATP synthesis in cells.

Chemiosmotic coupling

The mechanism by which ADP is phosphorylated to ATP in mitochondria and chloroplasts. The energy released as electrons pass down an electron transport chain is used to establish a proton gradient across an inner membrane of the organelle; when protons subsequently flow down this electrochemical gradient, the potential energy released is captured in the terminal phosphate bonds of ATP.

Chemoautotroph

An organism that needs only carbon dioxide as a carbon source but that obtains energy by oxidizing inorganic substances.

Biology Dictionary

Chemoheterotroph

An organism that must consume organic molecules for both energy and carbon.

Chemoreceptor

A receptor that transmits information about the total solute concentration in a solution or about individual kinds of molecules.

Chemosynthetic

Applied to autotrophic bacteria that use the energy released by specific inorganic reactions to power their life processes, including the synthesis of organic molecules. Chewing

The movements of the mandible during mastication; controlled by neuromuscular action and limited by the anatomic structure of the temporomandibular joints. Chiasma

The X-shaped, microscopically visible region representing homologous chromatids that have exchanged genetic material through crossing over during meiosis.

Chitin

A structural polysaccharide of an amino sugar found in many fungi and in the exoskeletons of all arthropods.

Chitinous

A tough, protective, semitransparent substance, primarily a nitrogen-containing polysaccharide, forming the principal component of arthropod exoskeletons and the cell walls of certain fungi.

Choanocyte

Any of the flagellated cells in sponges having a collar of cytoplasm around the flagellum; they maintain a flow of water through the body.

Chlorophylls

A green pigment located within the chloroplasts of plants; chlorophyll a can participate directly in the light reactions, which convert solar energy to chemical energy.

Chloroplast

An organelle found only in plants and photosynthetic protists that absorbs sunlight and uses it to drive the synthesis of organic compounds from carbon dioxide and water.

Biology Dictionary

Cholesterol

A steroid that forms an essential component of animal cell membranes and acts as a precursor molecule for the synthesis of other biologically important steroids.

Chondrichthyes

The vertebrate class of cartilaginous fishes, represented by sharks and their relatives.

Chondrin

A protein-carbohydrate complex secreted by chondrocytes; chondrin and collagen fibers form cartilage.

Chordate

A member of a diverse phylum of animals that possess a notochord; a dorsal, hollow nerve cord; pharyngeal gill slits; and a postanal tail as embryos.

Chorion

The outermost of four extraembryonic membranes; contributes to the formation of the mammalian placenta.

Chorionic villus sampling (CVS)

A technique for diagnosing genetic and congenital defects while the fetus is in the uterus. A small sample of the fetal portion of the placenta is removed and analyzed. Chromatid

Either of the two strands of a replicated chromosome, which are joined at the centromere.

Chromatin

The complex of DNA and proteins that makes up a eukaryotic chromosome. When the cell is not dividing, chromatin exists as a mass of very long, thin fibers that are not visible with a light microscope.

Chromista

In some classification systems, a kingdom consisting of brown algae, golden algae, and diatoms.

Chromoplasts

A plastid contains pigments other than chlorophyll, usually yellow or orange carotenoids.

Chromosomes

A threadlike, gene-carrying structure found in the nucleus. Each chromosome consists of one very long DNA molecule and associated proteins.

Chromosome map

A diagram of the linear order of the genes on a chromosome.

Chromatophores

A pigment-containing or pigment-producing cell, especially in certain lizards, that by expansion or contraction can change the color of the skin. Also called pigment cell.

Chytrid

Fungus with flagellated stage; possible evolutionary link between fungi and protists.

Cilium

A short cellular appendage specialized for locomotion, formed from a core of nine outer doublet microtubules and two inner single microtubules ensheathed in an extension of plasma membrane.

Circadian rhythms

A physiological cycle of about 24 hours, present in all eukaryotic organisms, that persists even in the absence of external cues.

Circulation

The flow of blood from the heart through the arteries, and then back through the veins to the heart, where the cycle is renewed.

Circulatory

Relating to blood circulation or circulatory system.

Cirrus

A slender flexible appendage, such as the fused cilia of certain protozoans.

Cladistics

A taxonomic approach that classifies organisms according to the order in time at which branches arise along a phylogenetic tree, without considering the degree of morphological divergence.

Cladogenesis

A pattern of evolutionary change that produces biological diversity by budding one or more new species from a parent species that continues to exist; also called branching evolution.

Cladogram

A dichotomous phylogenetic tree that branches repeatedly, suggesting a classification of organisms based on the time sequence in which evolutionary branches arise.

Biology Dictionary

Cladophylls

A photosynthetic branch or portion of a stem that resembles and functions as a leaf, as in the asparagus. Also called cladode.

Clasper

Any of the appendages of the male of certain insects and crustaceans that are used during copulation to hold the female.

Class

A taxonomic grouping of related, similar orders; category above order and below phylum.

Classical conditioning

A type of associative learning; the association of a normally irrelevant stimulus with a fixed behavioral response.

Classification

The systematic grouping of organisms into categories on the basis of evolutionary or structural relationships between them.

A division or category in a classifying system.

Cleavage

The process of cytokinesis in animal cells, characterized by pinching of the plasma membrane; specifically, the succession of rapid cell divisions without growth during early embryonic development that converts the zygote into a ball of cells. Cleavage furrow

The first sign of cleavage in an animal cell; a shallow groove in the cell surface near the old metaphase plate.

Cline

Variation in features of individuals in a population that parallels a gradient in the environment.

Clitoris

A small elongated erectile organ at the anterior part of the vulva, homologous with the penis, present in female

Cloaca

A common opening for the digestive, urinary, and reproductive tracts in all vertebrates except most mammals.

Biology Dictionary

Clonal selection

The mechanism that determines specificity and accounts for antigen memory in the immune system; occurs because an antigen introduced into the body selectively activates only a tiny fraction of inactive lymphocytes, which proliferate to form a clone of effector cells specific for the stimulating antigen.

Clone

(1) A lineage of genetically identical individuals or cells.

(2) In popular usage, a single individual organism that is genetically identical to another

individual.

Cloning vector

An agent used to transfer DNA in genetic engineering, such as a plasmid that moves recombinant DNA from a test tube back into a cell, or a virus that transfers recombinant DNA by infection.

Closed circulatory system

A type of internal transport in which blood is confined to vessels.

Cnidaria

Phylum Cnidaria includes animals like hydras; polyps; jellyfishes; sea anemones; corals

Cnidocyte

A stinging cell containing a nematocyst; characteristic of cnidarians.

Cnidarians

Cnidarians are the group of invertebrate animals which possess stinging cells called cnidocytes

Cnidoblast

A cell in the epidermis of coelenterates in which a nematocyst is developed.

Cocci

Any spherical or nearly spherical bacteria

Cochlea

The complex, coiled organ of hearing that contains the organ of Corti.

Codominance

A phenotypic situation in which both alleles are expressed in the heterozygote.

Codon

A three-nucleotide sequence of DNA or mRNA that specifies a particular amino acid or termination signal; the basic unit of the genetic code.

Coelom

A body cavity completely lined with mesoderm.

Coelomate

An animal whose body cavity is completely lined by mesoderm, the layers of which connect

dorsally and ventrally to form mesenteries.

Coenocytic

Referring to a multinucleated condition resulting from the repeated division of nuclei without cytoplasmic division.

Coenzyme

An organic molecule serving as a cofactor. Most vitamins function as coenzymes in important metabolic reactions.

Coevolution

The mutual influence on the evolution of two different species interacting with each other and reciprocally influencing each other's adaptations.

Cofactor

Any nonprotein molecule or ion that is required for the proper functioning of an enzyme. Cofactors can be permanently bound to the active site or may bind loosely with the substrate during catalysis.

Cohesion

The binding together of like molecules, often by hydrogen bonds.

Cohesion species concept

The idea that specific evolutionary adaptations and discrete complexes of genes define species.

Cohesion-tension theory

A theory accounting for the upward movement of water in plants. According to this theory, transpiration of a water molecule results in a negative (below 1 atmosphere) pressure in the leaf cells, inducing the entrance from the vascular tissue of another water molecule, which, because of the cohesive property of water, pulls with it a chain of water molecules extending up from the cells of the root tip.

Cold aclimation response

The process by which plants increase their tolerance to freezing by exposure to low, nonfreezing temperatures.

Coleoptile

The sheath enclosing the apical meristem and leaf primordia of a germinating monocot.

Coleorhizae

A protective sheath enclosing the embryonic root of grasses.

Collagen

A glycoprotein in the extracellular matrix of animal cells that forms strong fibers, found extensively in connective tissue and bone; the most abundant protein in the animal kingdom.

Collecting duct

The location in the kidney where filtrate from renal tubules is collected; the filtrate is now called urine.

Collenchyma cell

A flexible plant cell type that occurs in strands or cylinders that support young parts of the plant without restraining growth.

Cholesterol metabolism

A white crystalline substance, $C_{27}H_{45}OH$, found in animal tissues and various foods, that is normally synthesized by the liver and is important as a constituent of cell membranes and a precursor to steroid hormones. Its level in the bloodstream can influence the pathogenesis of certain conditions, such as the development of atherosclerotic plaque and coronary artery disease.

Colonial

Living in, consisting of, or forming a colony.

An inhabitant of a colony.

Colony

A group of organisms of the same species living together in close association.

Columnar

In biology, columnar refers to the shape of epithelial cells that are taller than they are wide

Commensalism

A symbiotic relationship in which the symbiont benefits but the host is neither helped nor harmed.

Community

All the organisms that inhabit a particular area; an assemblage of populations of different species living close enough together for potential interaction.

Companion cell

A type of plant cell that is connected to a sieve-tube member by many plasmodesmata and whose nucleus and ribosomes may serve one or more adjacent sieve-tube members.

Competition

Interaction between members of the same population or of two or more populations using the same resource, often present in limited supply.

Competitive exclusion principle

The concept that when the populations of two species compete for the same limited resources, one population will use the resources more efficiently and have a reproductive advantage that will eventually lead to the elimination of the other population.

Competitive inhibitor

A substance that reduces the activity of an enzyme by entering the active site in place of the substrate whose structure it mimics.

Complement fixation

An immune response in which antigen-antibody complexes activate complement proteins.

Complement system

A group of at least 20 blood proteins that cooperate with other defense mechanisms; may amplify the inflammatory response, enhance phagocytosis, or directly lyse pathogens; activated by the onset of the immune response or by surface antigens on microorganisms or other foreign cells.

Complementary DNA (cDNA)

A DNA molecule made in vitro using mRNA as a template and the enzyme reverse transcriptase. A cDNA molecule therefore corresponds to a gene, but lacks the introns present in the DNA of the genome.

Complete digestive tract

A digestive tube that runs between a mouth and an anus; also called alimentary canal. An

incomplete digestive tract has only one opening.

Complete flower

A flower that has sepals, petals, stamens, and carpels.

Complex tissues

The complex tissues include the dermal and vascular tissues of plants.

Compound

A chemical combination, in a fixed ratio, of two or more elements.

Compound eye

A type of multifaceted eye in insects and crustaceans consisting of up to several thousand light-detecting, focusing ommatidia; especially good at detecting movement. Compound leaf

a leaf that is composed of two or more leaflets on a common stalk. Clover, roses, sumac, and walnut trees have compound leaves.

Concentric

Having a common center.

Concentration gradient

A regular increase of decrease in the intensity or density of a chemical substance. Cells often maintain concentration gradients of H^+ ions across their membranes. When a gradient exists, the ions or other chemical substances involved tend to move from where they are more concentrated to where they are less concentrated.

Condensation

The process of changing from a gaseous to a liquid or solid state.

Condensation reaction

A reaction in which two molecules become covalently bonded to each other through the loss of a small molecule, usually water; also called dehydration reaction. Condyle

A round bump on a bone where it forms a joint with another bone.

Cone cell

(1) In plants, the reproductive structure of a conifer.

(2) In vertebrates, a type of photoreceptor cell in the retina, concerned with the perception of color and with the most acute discrimination of detail.

Conical

Relating to or resembling a cone

Conidium

A naked, asexual spore produced at the ends of hyphae in ascomycetes.

Conifer

A gymnosperm whose reproductive structure is the cone. Conifers include pines, firs, redwoods, and other large trees.

Conjoint

Xylem and phloem are together in the same vascular bundle.

Conjoint bundles

Conjoint vascular bundles xylem and phloem occure in the same vasciular bundle on the same radius that is one above the other

Conjugation

In bacteria, the transfer of DNA between two cells that are temporarily joined.

Connective tissues

Animal tissue that functions mainly to bind and support other tissues, having a sparse population of cells scattered through an extracellular matrix.

Conservation biology

A goal-oriented science that seeks to counter the biodiversity crisis, the current rapid decrease in Earth's variety of life.

Consumer, in ecological systems

A heterotroph that derives its energy from living or freshly killed organisms or parts thereof. Primary consumers are herbivores; higher-level consumers are carnivores. Continental drift

The gradual movement of the Earth's continents that has occurred over hundreds of millions of years.

Continuous fibers

A material consisting of extremely fine glass fibers, used in making various products, such as yarns, fabrics, insulators, and structural objects or parts. Also called spun glass. Continuous variation

A gradation of small differences in a particular trait, such as height, within a population; occurs in traits that are controlled by a number of genes.

Contraception

The prevention of pregnancy.

Contractile roots

Contractile roots are found in many plants species mainly at the base of an underground organ (bulb,corm,succulent rosette, etc.).

Contractile vacuoles

A small fluid-filled cavity in the cytoplasm of certain unicellular organisms; it gradually increases in size and then collapses; its function is thought to be respiratory and excretory.

Conus arteriosus

The cone-shaped projection from which the pulmonary artery arises on the right ventricle of the heart in man and mammals.

Convection

The mass movement of warmed air or liquid to or from the surface of a body or object.

Convergent evolution

The independent development of similarity between species as a result of their having similar ecological roles and selection pressures.

Cooperativity

An interaction of the constituent subunits of a protein causing a conformational change in one subunit to be transmitted to all the others.

Copulation

The sexual union of two individuals, resulting in insemination or deposition of the male gametes in proximity to the female gametes.

Cork

A secondary tissue that is a major constituent of bark in woody and some herbaceous plants; made up of flattened cells, dead at maturity; restricts gas and water exchange and protects the vascular tissues from injury.

Cork cambium

A cylinder of meristematic tissue in plants that produces cork cells to replace the epidermis during secondary growth.

Corolla

Petals, collectively; usually the conspicuously colored flower parts.

Corpuscle

Any of various cellular or small multicellular structures in the body, especially a red or white blood cell.

Corpus callosum

In the vertebrate brain, a tightly packed mass of myelinated nerve fibers connecting the two cerebral hemispheres.

Corpus lutuem

A secreting tissue in the ovary that forms from the collapsed follicle after ovulation and produces progesterone.

Corpuscles

A rounded globular mass of cells, such as the pressure receptor on certain nerve endings.

Cortex

(1) The outer, as opposed to the inner, part of an organ, as in the adrenal gland. (2) In a stem or root, the primary tissue bounded externally by the epidermis and internally by the central cylinder of vascular tissue.

Cortisol

A steroid hormone, produced by the adrenal cortex, that promotes the formation of glucose from protein and fat; also suppresses the inflammatory and immune responses. Cotransport

The coupling of the "downhill" diffusion of one substance to the "uphill" transport of another against its own concentration gradient.

Cotyledon

The one (monocot) or two (dicot) seed leaves of an angiosperm embryo.

Countercurrent exchange

The opposite flow of adjacent fluids that maximizes transfer rates; for example, blood in the gills flows in the opposite direction in which water passes over the gills, maximizing oxygen uptake and carbon dioxide loss.

Biology Dictionary

Coupled reactions

In cells, the linking of endergonic (energy-requiring) reactions to exergonic (energy releasing) reactions that provide enough energy to drive the endergonic reactions forward.

Covalent bond

A chemical bond formed as a result of the sharing of one or more pairs of electrons.

Crassulacean acid metabolism

A process by which some species of plants in hot, dry climates take in carbon dioxide during the night, fixing it in organic acids; the carbon dioxide is released during the day and used immediately in the Calvin cycle.

Cranial

Relating to the skull or cranium.

Cretaceous

Belonging to the geologic time, system of rocks, and sedimentary deposits of the third and last period of the Mesozoic Era, characterized by the development of flowering plants and ending with the sudden extinction of the dinosaurs and many other forms of life. Crista

An infolding of the inner membrane of a mitochondrion that houses the electron transport chain and the enzyme catalyzing the synthesis of ATP.

Crop

Cultivated plants or agricultural produce, such as grain, vegetables, or fruit, considered as a group: Wheat is a common crop.

Cross-fertilization

Fusion of gametes formed by different individuals; as opposed to self-fertilization.

Crossing over

The reciprocal exchange of genetic material between nonsister chromatids during synapsis of meiosis I.

Cryptic coloration

A type of camouflage that makes potential prey difficult to spot against its background.

Ctenidia

A comblike respiratory structure serving as the gill of certain mollusks.

Ctenoid

Having marginal projections that resemble the teeth of a comb: a ctenoid fish.

Biology Dictionary

Cuboidal ciliated epithelium

Cuboidal epithelia are epithelial cells having a cube-like shape; that is, their width is approximately equal to their height. They may exist in single layers (simple cuboidal epithelium) or multiple layers (stratified cuboidal epithelium) depending on their location (and thus function) in the body.

Cutaneous

Relating to skin or Integumentary system (skin).

Cuticle

(1) A waxy covering on the surface of stems and leaves that acts as an adaptation to prevent desiccation in terrestrial plants.

(2) The exoskeleton of an arthropod, consisting of layers of protein and chitin that are variously modified for different functions.

Cutin

A waxlike, water-repellent material present in the walls of some plant cells and forming the cuticle, which covers the epidermis.

Cyanobacteria

Photosynthetic, oxygen-producing bacteria (formerly know as blue-green algae).

Cyclic AMP

Cyclic adenosine monophosphate, a ring-shaped molecule made from ATP that is a common intracellular signaling molecule (second messenger) in eukaryotic cells, for example, in vertebrate endocrine cells. It is also a regulator of some bacterial operons. Cyclic electron flow

A route of electron flow during the light reactions of photosynthesis that involves only photosystem I and produces ATP but not NADPH or oxygen.

Cyclin

A regulatory protein whose concentration fluctuates cyclically.

Cyclin-dependent kinase (Cdk)

A protein kinase that is active only when attached to a particular cyclin.

Cycloid

Thin, rounded, and smooth-edged; disklike. Used of fish scales.

Cyclosis or rotation

The circulation of cytoplasm within a cell is called a cyclosis or rotation.

Biology Dictionary

Cyclostomata

A subclass comprising the simplest and most primitive of living vertebrates characterized by the absence of jaws and the presence of a single median nostril and an uncalcified cartilaginous skeleton.

Cymose

Having a usually flat-topped flower cluster in which the main and branch stems each end in a flower that opens before those below it or to its side.

Cystolith

Cystolith is a botanical term for the inorganic concertions, usually of calcium carbonate, formed in a cellulose matrix in special cells, generally in the leaf of plants of certain families. E.g. ficus elastic, the Indian rubber plant.

Cytochrome

An iron-containing protein, a component of electron transport chains in mitochondria and chloroplasts.

Cytokines

In the vertebrate immune system, protein factors secreted by macrophages and helper T cells as regulators of neighboring cells.

Cytokinesis

The division of the cytoplasm to form two separate daughter cells immediately after mitosis.

Cytokinin

A class of related plant hormones that retard aging and act in concert with auxins to stimulate cell division, influence the pathway of differentiation, and control apical dominance.

Cytoplasm

The entire contents of the cell, exclusive of the nucleus, and bounded by the plasma membrane.

Cytoplasmic determinants

In animal development, substances deposited by the mother in the eggs she produces that

regulate the expression of genes affecting the early development of the embryo.

Cytoplasmic streaming

A circular flow of cytoplasm, involving myosin and actin filaments, that speeds the distribution of materials within cells.

Biology Dictionary

Cytoskeleton

A network of microtubules, microfilaments, and intermediate filaments that branch throughout the cytoplasm and serve a variety of mechanical and transport functions.

Cytosol

The semifluid portion of the cytoplasm.

Cytotoxic T cell (TC)

A type of lymphocyte that kills infected cells and cancer cells.

"concentric rings"

Having a common center “ concentric rings”

D

Dalton

The atomic mass unit; a measure of mass for atoms and subatomic particles.

Darwinian fitness

A measure of the relative contribution of an individual to the gene pool of the next generation.

Daughter cell

A cell that is the offspring of a cell that has undergone mitosis or meiosis. The term "daughter" does not indicate the sex of the cell.

Day-neutral plant

A plant whose flowering is not affected by photoperiod.

Deciduous

Refers to plants that shed their leaves at a certain season.

Decomposers

Saprotrophic fungi and bacteria that absorb nutrients from nonliving organic material such as corpses, fallen plant material, and the wastes of living organisms, and convert them into inorganic forms.

Biology Dictionary

Dehydration reaction

A chemical reaction in which two molecules covalently bond to one another with the removal of a water molecule.

Deletion

A deficiency in a chromosome resulting from the loss of a fragment through breakage

Demography

The study of statistics relating to births and deaths in populations.

Denaturation

For proteins, a process in which a protein unravels and loses its native conformation, thereby becoming biologically inactive. For DNA, the separation of the two strands of the double helix. Denaturation occurs under extreme conditions of pH, salt concentration, and temperature.

Dendrite

One of usually numerous, short, highly branched processes of a neuron that conveys nerve impulses toward the cell body.

Denitrification

The process by which certain bacteria living in poorly aerated soils break down nitrates, using the oxygen for their own respiration and releasing nitrogen back into the atmosphere.

Density

The number of individuals per unit area or volume.

Density-dependent factor

Any factor influencing population regulation that has a greater impact as population density increases.

Density-dependent inhibition

The phenomenon observed in normal animal cells that causes them to stop dividing when they come into contact with one another.

Density-independent factors

Any factor influencing population regulation that acts to reduce population by the same percentage, regardless of size.

Deoxyribonucleic acid (DNA)

A double-stranded, helical nucleic acid molecule capable of replicating and determining the inherited structure of a cell's proteins.

Biology Dictionary

Deoxyribose

The sugar component of DNA, having one less hydroxyl group than ribose, the sugar component of RNA.

Dependent variable

In an experiment, the dependent variable is the factor that responds when another factor is manipulated.

Deploblastic

Derived from two embryonic germs layers, the ectoderm and endoderm. Used of lower invertebrates, such as sponges and coelenterates.

Depolarization

An electrical state in an excitable cell whereby the inside of the cell is made less negative relative to the outside than at the resting membrane potential. A neuron membrane is depolarized if a stimulus decreases its voltage from the resting potential of –70 mV in the direction of zero voltage.

Deposit-feeder

A heterotroph, such as an earthworm, that eats its way through detritus, salvaging bits and pieces of decaying organic matter.

Dermal tissue system

The protective covering of plants; generally a single layer of tightly packed epidermal cells covering young plant organs formed by primary growth.

Dermis

The inner layer of the skin, beneath the epidermis.

Desmosome

A type of intercellular junction in animal cells that functions as an anchor.

Determinate cleavage

A type of embryonic development in protostomes that rigidly casts the developmental fate of each embryonic cell very early.

Determinate growth

A type of growth characteristic of animals, in which the organism stops growing after it reaches a certain size.

Biology Dictionary

Determination

The progressive restriction of developmental potential, causing the possible fate of each cell to become more limited as the embryo develops.

Detritus

Dead organic matter.

Detritivores

Organisms that live on dead and discarded organic matter; include large scavengers, smaller animals such as earthworms and some insects, as well as decomposers (fungi and bacteria).

Deuterostome

One of two distinct evolutionary lines of coelomates, consisting of the echinoderms and chordates and characterized by radial, indeterminate cleavage, enterocoelous formation of the coelom, and development of the anus from the blastopore.

Development

The progressive production of the phenotypic characteristics of a multicellular organism, beginning with the fertilization of an egg.

Diadelphous

Having the filaments of a flower united into two groups

Diakinesis

In cell division the stage of first meiotic prophase, in which the nucleolus and nuclear envelope disappear and the spindle fibers form.

Diaphragm

A sheet of muscle that forms the bottom wall of the thoracic cavity in mammals; active in ventilating the lungs.

Diastole

The stage of the heart cycle in which the heart muscle is relaxed, allowing the chambers to fill with blood.

Diatoms

Any of numerous microscopic, unicellular, marine or freshwater algae of the phylum Chrysophyta, having cell walls containing silica.

Diastolic pressure

The pressure in an artery during the ventricular relaxation phase of the heart cycle.

Biology Dictionary

Dichlamydeous

Having two coverings, a calyx and a corolla.

Dicot

A subdivision of flowering plants whose members possess two embryonic seed leaves, or cotyledons.

Dicotyledon

A member of the class of flowering plants having two seed leaves, or cotyledons, among other distinguishing features; often abbreviated as dicot.

Dictyosomes

The golgi apparatus in plant cells.

Differentiation

The process by which cells or tissues undergo a change toward a more specialized form or function, especially during embryonic development.

Diffusion

The spontaneous tendency of a substance to move down its concentration gradient from a more concentrated to a less concentrated area.

Digestion

The process of breaking down food into molecules small enough for the body to absorb.

Digestive tract

The series of organs in the digestive system through which food passes, nutrients are absoebed, and waste is eliminated. In higher vertebrates, it consists of the esophagus, stomach, small and large intestines, rectum, and anus.

Dihybrid

A hybrid individual that is heterozygous for two genes or two characters.

Dihybrid cross

A breeding experiment in which parental varieties differing in two traits are mated.

Dikaryon

A mycelium of certain septate fungi that possesses two separate haploid nuclei per cell.

Dioecious

Referring to a plant species that has staminate and carpellate flowers on separate plants.

Dimorphism

Displaying two separate growth forms.

Dipeptides

A dipeptide is a molecule consisting of two amino acids joind by a single peptide bond.

Diploid cell

A cell containing two sets of chromosomes (2n), one set inherited from each parent.

Diplobalstic

They have two germ layers - or a two - layerd body wall. The epidermis and gastrodermis.

Diplotene

A stage of meiotic prophase in which homologous chromosome pairs begin to separate and chiasmata become visible.

Directed molecular evolution

A laboratory version of evolution at the molecular level that can produce "designer molecules." A large starting population of molecules (typically nucleic acids) that varies randomly in base sequence and shape is subjected to replication with variation, followed by selection. After several cycles of replication and selection, the population of molecules will evolve toward one containing a high proportion of molecules well adapted to the selection criterion applied.

Directional selection

Natural selection that favors individuals on one end of the phenotypic range.

Disaccharide

A double sugar, consisting of two monosaccharides joined by dehydration synthesis.

Diurnal

Applied to organisms that are active during the daylight hours.

Dispersion

The distribution of individuals within geographical population boundaries.

Diversifying selection

Natural selection that favors extreme over intermediate phenotypes.

Division

A taxonomic grouping of related, similar classes; a high- level category below kingdom and above class. Division is generally used in the classification of prokaryotes, algae, fungi, and plants, whereas an equivalent category, phylum, is used in the classification of protozoa and animals.

Biology Dictionary

DNA

Abbreviation of deoxyribonucleic acid.

DNA ligase

width="400" valign="TOP"> A linking enzyme essential for DNA replication; catalyzes the covalent bonding of the 3' end of a new DNA fragment to the 5' end of a growing chain.

DNA methylation

The addition of methyl groups ($–CH_3$) to bases of DNA after DNA synthesis; may serve as a long-term control of gene expression.

DNA molecules

A nucleic acid that carries the genetic information in the cell and is capable of self replication and synthesis of RNA. DNA consists of two long chains of nucleotides twisted into a double helix and joined by hydrogen bonds between the complementary bases adenine and thymine or cytosine and guanine. The sequence of nucleotides determines individual hereditary characteristics.

DNA polymerase

An enzyme that catalyzes the elongation of new DNA at a replication fork by the addition of nucleotides to the existing chain.

DNA probe

A chemically synthesized, radioactively labeled segment of nucleic acid used to find a gene of interest by hydrogen-bonding to a complementary sequence.

Domain

A taxonomic category above the kingdom level; the three domains are Archaea, Bacteria, and Eukarya.

Dominance hierarchy

A linear "pecking order" animals, where position dictates characteristic social behaviors.

Dominant allele

In a heterozygote, the allele that is fully expressed in the phenotype.

Dormancy

A period during which growth ceases and metabolic activity is greatly reduced; dormancy is broken when certain requirements, for example, of temperature, moisture, or day length, are met.

Dorsal

Pertaining to or situated near the back; opposite of ventral.

Dorsoventrally

Relating to or involving, or extending along the axis joining the dorsal and ventral sides.

Double circulation

A circulation scheme with separate pulmonary and systemic circuits, which ensures vigorous blood flow to all organs.

Double fertilization

A mechanism of fertilization in angiosperms, in which two sperm cells unite with two cells in the embryo sac to form the zygote and endosperm.

Double helix

The form of native DNA, referring to its two adjacent polynucleotide strands wound into a spiral shape.

Down syndrome

A human genetic disease resulting from having an extra chromosome 21, characterized by mental retardation and heart and respiratory defects.

Dorsifixed

Attached at the or by the back to a plant or plant part.

Duodenum

The first section of the small intestine, where acid chyme from the stomach mixes with digestive juices from the pancreas, liver, gallbladder, and gland cells of the intestinal wall.

Duplication

An aberration in chromosome structure resulting from an error in meiosis or mutagens; duplication of a portion of a chromosome resulting from fusion with a fragment from a homologous chromosome.

Duramen (Heart wood)

The older inactive central wood of a tree or woody plant; usually darker and denser than the surrounding sapwood

Dynein

A large contractile protein forming the sidearms of microtubule doublets in cilia and flagella.

Biology Dictionary

E

Ebracteate

Having no bracts.

Ecdysis

The shedding of an outer integument or layer of skin, as by insects, crustaceans, and snakes; molting.

Ecdysone

A steroid hormone that triggers molting in arthropods.

Ecological efficiency

The ratio of net productivity at one trophic level to net productivity at the next lower level.

Ecological niche

The sum total of an organism's utilization of the biotic and abiotic resources of its environment.

Ecological pyramid

A graphic representation of the quantitative relationships of numbers of organisms, biomass, or energy flow between the trophic levels of an ecosystem. Because large amounts of energy and biomass are dissipated at every trophic level, these diagrams nearly always take the form of pyramids.

Ecological species concept

The idea that ecological roles (niches) define species.

Ecological succession

Transition in the species composition of a biological community, often following ecological disturbance of the community; the establishment of a biological community in an area virtually barren of life.

Ecology

The study of how organisms interact with their environments.

Ecosystem

A level of ecological study that includes all the organisms in a given area as well as the abiotic factors with which they interact; a community and its physical environment.

Ecotype

A locally adapted variant of a species, differing genetically from other ecotypes of the same species.

Ectoderm

The outermost of the three primary germ layers in animal embryos; gives rise to the outer covering and, in some phyla, the nervous system, inner ear, and lens of the eye.

Ectoparasites

A parasite, such as a flea, that lives on the exterior of another organism.

Ectotherm

An animal such as a reptile, fish, or amphibian, that must use environmental energy and

behavioral adaptations to regulate its body temperature.

Eeffector cell

A lymphocyte (as a T cell) that has been induced to differentiate into a form (as a cytotoxic T cell) capable of mounting aspecific immune response called also effector lymphocyte.

Ectothermic

Relating to an organism that regulates its body temperature largely by exchanging heat with its surrounding environment.

Efferent

Carrying away from a center, applied to nerves and blood vessels.

Egg

A female gamete, which usually contains abundant cytoplasm and yolk; nonmotile and often larger than a male gamete.

Ejaculatory duct

In the male, a duct from each testis that join to form the urethra.

Elasmobranches

Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous skeleton and placoid scales: sharks; rays; skates

Elastin

Elastin is a protein in connective tissue that is elastic and allows many tissues in the body to resume their shape after stretching or contracting. Elastin helps skin to return to its original when it is poked or pinched.

Electric potential

The difference in the amount of electric charge between a region of positive charge and a region of negative charge. The establishment of electric potentials across the plasma membrane and across organelle membranes makes possible a number of phenomena, including the chemiosmotic synthesis of ATP, the conduction of nerve impulses, and muscle contraction.

Electrochemical gradient

The diffusion gradient of an ion, representing a type of potential energy that accounts for

both the concentration difference of the ion across a membrane and its tendency to move relative to the membrane potential.

Electrogenic pump

An ion transport protein generating voltage across the membrane.

Electromagnetic spectrum

The entire spectrum of radiation; ranges in wavelength from less than a nanometer to more than a kilometer.

Electron

A particle with a single negative charge; one or more electrons orbit the nucleus of the atom.

Electron acceptor

Substance that accepts or receives electrons in an oxidation-reduction reaction, becoming reduced in the process.

Electron carrier

A molecule that conveys electrons; one of several membrane proteins in electron transport chains in cells. Electron carriers shuttle electrons during the redox reactions that release energy used to make ATP.

Electron donor

Substance that donates or gives up electrons in an oxidation-reduction reaction, becoming oxidized in the process.

Electron microscope (EM)

A microscope that focuses an electron beam through a specimen, resulting in resolving power a thousandfold greater than that of a light microscope. A transmission electron microscope (TEM) is used to study the internal structure of thin sections of cells. A scanning electron microscope (SEM) is used to study the fine details of cell surfaces. Electron microscopic

Of or relating to or involving an electron microscope.

Electron shell

An energy level at which an electron orbits the nucleus of an atom.

Electron transport chain

A sequence of electron-carrier molecules (membrane proteins) that shuttle electrons during the redox reactions that release energy used to make ATP.

Electronegativity

The tendency for an atom to pull electrons toward itself.

Element

Any substance that cannot be broken down to any other substance.

Embryo

A developing stage of multicellular organisms; in humans, the stage in the development of offspring from the first division of the zygote until body structures begin to appear; about the ninth week of gestation.

Embryoblast

A group of cells near the embryonic axis of the blastocyst that develop into the embryo.

Embryogenesis

The development and growth of an embryo.

Embryonic germ-layers

The primary germ layers (endoderm, mesoderm, and ectoderm) are formed and organized in their proper locations during gastrulation.

Embryo sac

The female gametophyte of angiosperms, formed from the growth and division of the megaspore into a multicellular structure with eight haploid nuclei.

Enantiomer

One of a pair of molecules that are mirror-image isomers of each other.

Encystment

The process of forming or becoming enclosed in a cyst or capsule.

Endarch xylem

A primary xylem strand in which the first-formed elements are

closest to the centre of the axis, as in the shoots of most spermatophyta.

Endangered species

A species that is in danger of extinction throughout all or a significant portion of its range.

Endemic species

Species that are confined to a specific, relatively small geographic area.

Endemic

An organism found only in one particular location.

Endergonic reaction

A nonspontaneous chemical reaction in which free energy is absorbed from the surroundings.

Endocarp

The hard inner (usually woody) layer of the pericarp of some fruits (as peaches or plums or cherries or olives) that contains the seed

Endocrine gland

A ductless gland that secretes hormones directly into the bloodstream.

Endocrine system

The internal system of chemical communication involving hormones, the ductless glands that secrete hormones, and the molecular receptors on or in target cells that respond to hormones; functions in concert with the nervous system to effect internal regulation and maintain homeostasis.

Endocytosis

The cellular uptake of macromolecules and particulate substances by localized regions of the plasma membrane that surround the substance and pinch off to form an intracellular vesicle.

Endoderm

The innermost of the three primary germ layers in animal embryos; lines the archenteron and gives rise to the liver, pancreas, lungs, and the lining of the digestive tract.

Endodermis

The innermost layer of the cortex in plant roots; a cylinder one cell thick that forms the boundary between the cortex and the stele.

Endogenous

Arising from internal structures or functional causes.

Endomembrane system

The collection of membranes inside and around a eukaryotic cell, related either through direct physical contact or by the transfer of membranous vesicles.

Endometrium

The inner lining of the uterus, which is richly supplied with blood vessels.

Endonucleases

Endonucleases are enzymes that cleave the phosphodiester bond within a polynucleotide chain.

Endoparasites

A parasite, such as a tapeworm, that lives within another organism.

Endoplasmic reticulum

An extensive membranous network in eukaryotic cells, continuous with the outer nuclear membrane and composed of ribosome-studded (rough) and ribosome-free (smooth) regions.

Endorphin

A hormone produced in the brain and anterior pituitary that inhibits pain perception.

Endoskeleton

A hard skeleton buried within the soft tissues of an animal, such as the spicules of sponges, the plates of echinoderms, and the bony skeletons of vertebrates.

Endosperm

A nutrient-rich tissue formed by the union of a sperm cell with two polar nuclei during double fertilization, which provides nourishment to the developing embryo in angiosperm seeds.

Endospore

A thick-coated, resistant cell produced within a bacterial cell exposed to harsh conditions.

Endosymbiotic theory

A hypothesis about the origin of the eukaryotic cell, maintaining that the forerunners of

eukaryotic cells were symbiotic associations of prokaryotic cells living inside larger prokaryotes.

Endothermic

Relating to a chemical reaction that obsorb heat.

Endothelium

The innermost, simple squamous layer of cells lining the blood vessels; the only constituent structure of capillaries.

Endotherm

An animal that uses metabolic energy to maintain a constant body temperature, such as a bird or mammal.

Endotoxin

A component of the outer membranes of certain gram-negative bacteria responsible for generalized symptoms of fever and ache.

Energy

The capacity to do work by moving matter against an opposing force.

Energy of activation

The amount of energy that reactants must absorb before a chemical reaction will start.

Enzymes

Any of several complex proteins that are produced by cells and act as catalysts in specific biochemical reactions. There are over 700 identified human enzymes. Enhancer

A DNA sequence that recognizes certain transcription factors that can stimulate transcription of nearby genes.

Entropy

A quantitative measure of disorder or randomness, symbolized by S.

Environmental grain

An ecological term for the effect of spatial variation, or patchiness, relative to the size and behavior of an organism.

Enzyme

A class of proteins serving as catalysts, chemical agents that change the rate of a reaction without being consumed by the reaction.

Eocene

Belonging to the geologic time, rock series, or sedimentary deposits of the second epoch of the Tertiary Period, characterized by warm climates and the rise of most modern mammalian families.

Eoplasts

Any of several pigmented cytoplasmic organelles found in plant cells and other organisms, having various physiological functions, such as the synthesis and storage of food. Epiblast

The outer layer of a blastula that gives rise to the ectoderm after gastrulation.

Epiblema

The epidermal cells of rootlets, specially adapted to absorb liquids. Goodale.

Epicuticular waxes

The epicuticle is the outermost portion of the exoskeleton of an insect (and various other arthropods); its exact composition and structure may differ somewhat among different taxa, but certain aspects can be generalized:

It is secreted by the epidermis, and is deposited on top of the procuticle via pores that pass outwards through the procuticle from the epidermal cells.

Epidermis

(1) The dermal tissue system in plants.

(2) The outer covering of animals.

Epidermal

pertaining to the epidermis; epidermic; cuticular.

Epigenesis

The progressive development of form in an embryo.

Epididymis

A long coiled tube into which sperm pass from the testis and are stored until mature and ejaculated.

Epigenesis

A cartilaginous flap that blocks the top of the windpipe, the glottis, during swallowing, which prevents the entry of food or fluid into the respiratory system.

Epigynous

Having a floral parts (such as the petals and stamens) attached to or near the upper part of the ovary, as in the flower of the apple, cucumber, or daffodil.

Epinephrine

A hormone produced as a response to stress; also called adrenaline.

Epipetalous

Borne on or attached to the petals or corolla, as the stamens of the petunia.

Epiphyllous

Growing upon, or inserted into, the leaf.

Epiphyte

A plant that nourishes itself but grows on the surface of another plant for support, usually on the branches or trunks of tropical trees.

Episome

A plasmid capable of integrating into the bacterial chromosome.

Epistasis

A phenomenon in which one gene alters the expression of another gene that is independently inherited.

Epithelium

A cellular tissue covering the external and internal surfaces of the body.

Epithelial tissue

Sheets of tightly packed cells that line organs and body cavities.

Epitope

A localized region on the surface of an antigen that is chemically recognized by antibodies; also called antigenic determinant.

Equilibrium

The state of a system in which no further net change is occurring; result of counterbalancing forward and backward processes.

Biology Dictionary

Equilibrium species

Species characterized by low reproduction rates, long development times, large body size, and long adult life with repeated reproductions.

Equational division

Nuclear division in which each chromosome divides into equal longitudinal halves.

Equatorial plate

The plane located midway between the poles of a dividing cell during the metaphase stage of mitosis or meiosis. It is formed from the migration of the chromosomes to the center of the spindle

Ergastic substances

Ergastic substances are non-protoplasm materials found in cells.

Ergot

The disease caused by such a fungus.

ER membranes

In eukaryotes, the functional continuum of membraneous cell components consisting of the nuclear envelope, endoplastic reticulum, and Golgi apparatus as well as vesicles and other structures derived from these major components.

Ergastic substances

Ergastic substances are non-protoplasm materials found in cells. The living protoplasm of a cell is sometimes called the bioplasm and distinct from the ergastic substances of the cell.

Erythrocyte

A red blood cell; contains hemoglobin, which functions in transporting oxygen in the circulatory system.

Esophagus

A channel that conducts food, by peristalsis, from the pharynx to the stomach.

Essential amino acids

The amino acids that an animal cannot synthesize itself and must obtain from food. Eight amino acids are essential in the human adult.

Esterification

A chemical reaction resulting in the formation of at least one ester product.

Biology Dictionary

Estivation

A physiological state characterized by slow metabolism and inactivity, which permits survival during long periods of elevated temperature and diminished water supplies.

Estrogens

The primary female steroid sex hormones, which are produced in the ovary by the developing follicle during the first half of the cycle and in smaller quantities by the corpus luteum during the second half. Estrogens stimulate the development and maintenance of the female reproductive system and secondary sex characteristics.

Estrous cycle

A type of reproductive cycle in all female mammals except higher primates, in which the nonpregnant endometrium is reabsorbed rather than shed, and sexual response occurs only during midcycle at estrus.

Ethology

The comparative study of patterns of animal behavior, with emphasis on their adaptive significance and evolutionary origin.

Ethylene

The only gaseous plant hormone, responsible for fruit ripening, growth inhibition, leaf abscission, and aging.

Etiolation

In plants, a condition characterized by stem elongation, poor leaf development, and lack of chlorophyll; occurs in plants growing in the dark or with greatly reduced light. Etioplasts

Etioplasts are chloroplasts that have not been exposed to light. They are usually found in plants grown in the dark. If a plant is kept out of light for several days, its normal chloroplasts will actually convert into etioplasts.

Euchromatin

The more open, unraveled form of eukaryotic chromatin, which is available for transcription.

Eukaryotic cells

A type of cell with a membrane-enclosed nucleus and membrane-enclosed organelles, present in protists, plants, fungi, and animals; also called eukaryote.

Biology Dictionary

Eukaryote

An organism whose cells contain membraine-bound organelles and whose DNA is enclosed in a cell nucleus and is associated with proteins.

Eumetazoa

Members of the subkingdom that includes all animals except sponges.

Eusocial

Applied to animal societies, such as those of certain insects, in which sterile individuals work on behalf of reproductive individuals.

Eutherian mammals

Placental mammals; those whose young complete their embryonic development within the uterus, joined to the mother by the placenta.

Eutrophic lake

A highly productive lake, having a high rate of biological productivity supported by a high rate of nutrient cycling.

Eutrophication

A process in which an aquatic environment accumulates high nutrient levels due to factors such as industrial or urban pollution or run-off of fertilizers from nearby agricultural lands. The nutrients lead to dense blooms of algae and aquatic plants that cloud lake water, deplete specific minerals and dissolved gases, and can cause natural plant and animal populations to decline.

Evaporative cooling

The property of a liquid whereby the surface becomes cooler during evaporation, owing to a loss of highly kinetic molecules to the gaseous state.

Evolution

All the changes that have transformed life on Earth from its earliest beginnings to the diversity that characterizes it today.

Evolutionary species concept

The idea that evolutionary lineages and ecological roles can form the basis of species identification.

Exaptation

A structure that evolves and functions in one environmental context but that can perform additional functions when placed in some new environment.

Biology Dictionary

Excitatory postsynaptic potential (EPSP)

An electrical change (depolarization) in the membrane of a postsynaptic neuron caused by the binding of an excitatory neurotransmitter from a presynaptic cell to a postsynaptic receptor; makes it more likely for a postsynaptic neuron to generate an action potential.

Excretion

The disposal of nitrogen-containing waste products of metabolism.

Excretory

Of, relating to, or used in excretion: excretory organs.

Excretory organs

An organ that separates waste substances form the blood and discharges them.

Excretory system

The organ system that disposes of nitrogen-containing metabolic wastes.

Exergonic reaction

A spontaneous chemical reaction in which there is a net release of free energy.

Exocrine glands

Glands, such as sweat glands and digestive glands, that secrete their products into ducts that empty onto surfaces, such as the skin, or into cavities, such as the interior of the stomach.

Exocytosis

The cellular secretion of macromolecules by the fusion of vesicles with the plasma membrane.

Exodermis

A layer of cells lying immediately below the epidermis.

Exon

The coding region of a eukaryotic gene that is expressed. Exons are separated from each other by introns.

Exoskeleton

A hard encasement on the surface of an animal, such as the shells of mollusks or the cuticles of arthropods, that provides protection and points of attachment for muscles.

Biology Dictionary

Exotoxin

A toxic protein secreted by a bacterial cell that produces specific symptoms even in the absence of the bacterium.

Exothermic

Relating to a chemical reaction that releases heat.

Exponential growth

In populations, the increasingly accelerated rate of growth due to the increasing number of individuals being added to the reproductive base. Exponential growth is very seldom approached or sustained in natural populations.

Expression vector

A vector that allows a DNA sequence cloned into it to be transcribed when the vector is introduced into a cell.

Expressivity

In genetics, the degree to which a particular genotype is expressed in the phenotype of individuals with that genotype.

Extinct

No longer existing.

Extracellular

Located or occurring outside a cell or cells.

Extracellular matrix (ECM)

The substance in which animal tissue cells are embedded; consists of protein and polysaccharides.

Extraembryonic membranes

Four membranes (yolk sac, amnion, chorion, allantois) that support the developing embryo in reptiles, birds, and mammals.

External morphology

The branch of biology that deals with the form and structure of an organism or part, without regard to function.

Eyelashes

Any of the short curved hairs that grow from the edges of the eyelids.

Biology Dictionary

F

F_1 (first filial generation)

The first filial or hybrid offspring in a genetic cross-fertilization.

F_2 (second filial generation)

Offspring resulting from interbreeding of the hybrid F_1 generation.

F factor

A fertility factor in bacteria, a DNA segment that confers the ability to form pili for conjugation and associated functions required for the transfer of DNA from donor to recipient. May exist as a plasmid or integrated into the bacterial chromosome. Fascia

A sheet or band of fibrous connective tissue separating or binding together muscles and organs etc

Facilitated diffusion

The spontaneous passage of molecules and ions, bound to specific carrier proteins, across a biological membrane down their concentration gradients.

Facultative anaerobe

An organism that makes ATP by aerobic respiration if oxygen is present but that switches to fermentation under anaerobic conditions.

Fascicular cambium

Fascicular cambium (plant anatomy), ...vascular bundle develops a meristematic area of

growth from an undifferentiated (parenchymatous) layer of cells between the primary xylem and primary phloem, called a fascicular cambium.

Fascicular vascular cambium

Cambium that develops within the vascular bundle.

FAD

Abbreviation of flavin adenine dinucleotide, a coenzyme that functions as an electron acceptor in the Krebs cycle.

Fallopian tube

Either of a pair of slender ducts through which ova pass from the ovaries to the uterus in the female reproductive system of humans and higher mammals.

Biology Dictionary

Family

A taxonomic grouping of related, similar genera; the category below order and above genus.

Fat

A biological compound consisting of three fatty acids linked to one glycerol molecule.

Fatty acid

A long carbon chain carboxylic acid. Fatty acids vary in length and in the number and location of double bonds; three fatty acids linked to a glycerol molecule form fat.

Feedback inhibition

A method of metabolic control in which the end-product of a metabolic pathway acts as an inhibitor of an enzyme within that pathway.

Feedback systems

Control mechanisms whereby an increase or decrease in the level of a particular factor inhibits or stimulates the production, utilization, or release of that factor; important in the regulation of enzyme and hormone levels, ion concentrations, temperature, and many other factors.

Fermentation

A catabolic process that makes a limited amount of ATP from glucose without an electron transport chain and that produces a characteristic end-product, such as ethyl alcohol or lactic acid.

Fertilization

The union of haploid gametes to produce a diploid zygote.

Fetal membrane

Any of the membranous structures closely associated with or surrounding a developing vertebrate embryo, including the amnion, chorion, allantois, and yolk sac. Fetus

An unborn or unhatched vertebrate that has passed through the earliest developmental stages; a developing human from about the second month of gestation until birth. Fiber

A lignified cell type that reinforces the xylem of angiosperms and functions in mechanical support; a slender, tapered sclerenchyma cell that usually occurs in bundles. Fibril

Any minute, threadlike structure within a cell.

Biology Dictionary

Fibrin

The activated form of the blood-clotting protein fibrinogen, which aggregates into threads that form the fabric of the clot.

Fibrillin

Fibrillin is a glycoprotein, which is essential for the formation of elastic fibers found in connective tissue.

Fibroin

Fibron is a type of protein created by silkworms in the production of silk.

Fibroblast

A type of cell in loose connective tissue that secretes the protein ingredients of the extracellular fibers.

Fibrous protein

Insoluble structural protein in which the polypeptide chain is coiled along one dimension. Fibrous proteins constitute the main structural elements of many animal tissues. Fibula

The outer and narrower of two bones of the human lower leg, extending from the knee to the ankle.

Filament

A chain of cells.

Filtrate

Fluid extracted by the excretory system from the blood or body cavity. The excretory system produces urine from the filtrate after extracting valuable solutes from it and concentrating it.

Filtration

The first stage of kidney function; blood plasma is forced, under pressure, out of the glomerular capillaries into Bowman's capsule, through which it enters the renal tubule.

Fimbriae

A fringelike anatomical part or structure.

First law of thermodynamics

The principle of conservation of energy. Energy can be transferred and transformed, but it cannot be created or destroyed.

Biology Dictionary

Fitness

The genetic contribution of an individual to succeeding generations relative to the contributions of other individuals in the population.

Fixed action pattern

A highly stereotypical behavior that is innate and must be carried to completion once initiated.

Flaccid

Limp; walled cells are flaccid in isotonic surroundings, where there is no tendency for water to enter.

Flagellum

A long cellular appendage specialized for locomotion, formed from a core of nine outer doublet microtubules and two inner single microtubules, ensheathed in an extension of plasma membrane.

Flame cells

organ of excretion in flatworms

Flatworms

Any of various parasitic and nonparasitic worms of the phylum Platyhelminthes, such as a tapeworm or a planarian, characteristically having a soft, flat, bilaterally symmetrical body and no body cavity. Also called platyhelminth.

Flower

The reproductive structure of angiosperms; a complete flower includes sepals, petals,

stamens (male structures), and carpels (female structures).

Fluid-feeder

An animal that lives by sucking nutrient-rich fluids from another living organism.

Fluid mosaic model

The currently accepted model of cell membrane structure, which envisions the membrane as a mosaic of individually inserted protein molecules drifting laterally in a fluid bilayer of phospholipids.

Follicle

A microscopic structure in the ovary that contains the developing ovum and secretes estrogens.

Biology Dictionary

Follicle-stimulating hormone (FSH)

A protein hormone secreted by the anterior pituitary that stimulates the production of eggs by the ovaries and sperm by the testes.

Fontana

A city of southern California west of San Bernardino. It is an industrial center in a citrus growing area. Population: 170,000.

Food chain

The pathway along which food is transferred from trophic level to trophic level, beginning with producers.

Food web

The elaborate, interconnected feeding relationships in an ecosystem.

Foregut

The anterior alimentary canal in a vertebrate embryo, including those parts which will develop into the pharynx, esophagus, stomach, and anterior intestine. Fossil

The remains of an organism, or direct evidence of its presence (such as tracks). May be an unaltered hard part (tooth or bone), a mold in a rock, petrification (wood or bone), unaltered or partially altered soft parts (a frozen mammoth).

Founder effect

A cause of genetic drift attributable to colonization by a limited number of individuals from

a parent population.

Fovea

A small area in the center of the retina in which cones are concentrated; the area of sharpest vision.

Fragile X syndrome

A hereditary mental disorder, partially explained by genomic imprinting and the addition of nucleotides to a triplet repeat near the end of an X chromosome.

Fragmentation

A method of asexual eprodection, occurring in some invertebrate animals, in which parts of the organism break of and sunsequently differentiate and develop and new individuals. It occurs especially in certain coelenterates and annelids.

Biology Dictionary

Frameshift mutation

A mutation occurring when the number of nucleotides inserted or deleted is not a multiple of 3, thus resulting in improper grouping into codons.

Free energy

A quantity of energy that interrelates entropy (S) and the system's total energy (H); symbolized by G. The change in free energy of a system is calculated by the equation $G = \Delta H - T \Delta S$, where T is absolute temperature.

Free energy of activation

The initial investment of energy necessary to start a chemical reaction; also called activation energy.

Frequency-dependent selection

A decline in the reproductive success of a morph resulting from the morph's phenotype becoming too common in a population; a cause of balanced polymorphism in populations.

Fungi

A group of simple plants lacking chlorophyll.

Fruit

A mature ovary of a flower that protects dormant seeds and aids in their dispersal.

Function

Characteristic role or action of a structure or process in the normal metabolism or behavior of an organism.

Functional group

A specific configuration of atoms commonly attached to the carbon skeletons of organic molecules and usually involved in chemical reactions.

Biology Dictionary

G

Gases

An aeriform fluid that possesses complete molecular mobility and the property of indefinite expansion. A gas has no definite shape, and its volume is determined by its container and by temperature and pressure.

G protein

A GTP-binding protein that relays signals from a plasma-membrane signal receptor, known as a G-protein linked receptor, to other signal-transduction proteins inside the cell. When such a receptor is activated, it in turn activates the G protein, causing it to bind a molecule of GTP in place of GDP. Hydrolysis of the bound GTP to GDP inactivates the G protein.

G-protein linked receptor

A signal receptor protein in the plasma membrane that responds to the binding of a signal molecule by activating a G protein.

G_0 Phase

The G_0 phase (G sub 0) or G zero is a period in the cell cycle where cells exist in a quiescent

state. G_0 is sometimes referred to as a "post-mitotic" state since cells in G_0 are in a non dividing phase outside of the cell cycle;

G_1 phase

The first growth phase of the cell cycle, consisting of the portion of interphase before DNA synthesis begins.

G_2 phase

The second growth phase of the cell cycle, consisting of the portion of interphase after DNA synthesis occurs.

Gallbladder

A small, pear-shaped muscular sac, located under the right lobe of the liver, in which bile secreted by the liver is stored until needed by the body for digestion.

Golgi apparatus

The golgi apparatus is an organelle found in most eukaryotic cells. It was identified in 1898 by the Italian physician Camillo Golgi and was named after him.

Biology Dictionary

Gametangium

The reproductive organ of bryophytes, consisting of the male antheridium and female archegonium; a multichambered jacket of sterile cells in which gametes are formed.
An organ or a cell in which gametes are produced.

Gamete

A haploid egg or sperm cell; gametes unite during sexual reproduction to produce a diploid zygote.

Gametophyte

The multicellular haploid form in organisms undergoing alternation of generations, which mitotically produces haploid gametes that unite and grow into the sporophyte generation.

Ganglion

A cluster (functional group) of nerve cell bodies in a centralized nervous system.

Gap junction

A type of intercellular junction in animal cells that allows the passage of material or current between cells.

gap phases

In the cell cycle, the phases that precede (G_1) and follow (G_2) the synthesis (S) phase in which DNA is replicated; in the G_1 phase, the cell doubles in size, and its enzymes, ribosomes, and other cytoplasmic molecules and structures increase in number; in the G_2 phase, the replicated chromosomes begin to condense and the structures required for mitosis or meiosis are assembled.

Gastric

Pertaining to the stomach.

Gastrin

A digestive hormone, secreted by the stomach, that stimulates the secretion of gastric juice.

Gastrodermis

The cellular lining of the digestive cavity of certain invertebrates.

Gastrotricha

Any of various minute aquatic animals of the phylum Gastrotricha, having a wormlike, ciliated body.