

Biological Terminology (Bio Terms): Latin & Greek Word Parts (Prefixes, Root Words, and Suffixes)

The key to learning biological terms is in learning the origins of those words, which are usually Greek or Latin. **You may see these roots again as extra credit questions on tests or quizzes.** I will only include roots related to the unit being tested on!

Word Part	Meaning	Example	Meaning of Example
a-, an-, non-, un-	Without, Not	Aphotic, Anaerobic, Nonrenewable	<i>Without</i> light, <i>Without</i> air or oxygen, <i>Not</i> able to replenish naturally
ab-, ef-	Away	Aboral, Efferent neuron	Away from the mouth, nerve cells going <i>away</i> from brain
ad-, af-	Toward	Adductor muscle, Afferent neuron	Muscle movement <i>toward</i> the body, nerve cells going <i>toward</i> the brain
adi-, lip-	Fat	Adipose, Liposuction	<i>Fat</i> tissue, Removing <i>fat</i> tissue
aero-	Air, Oxygen	Anaerobic	Without <i>oxygen</i>
amphi-	Both sides	Amphibian	<i>Both sides</i> of land and water
ana-	Up	Anabolic	Build <i>up</i> of larger molecules from smaller molecules
angio-	Vessel, Container	Angiosperm, Angiogram	<i>Container</i> for seed, Picture of a blood <i>vessel</i>
andro, anthro, homo (latin)	Man, Human	Androgen, Anthropoid, Homo sapien	<i>Male hormone</i> , <i>Man-like</i> , <i>Man</i> who is wise
anti-, contra-	Opposite, Against	Anticodon, Contraception	<i>Opposite</i> of codon, <i>Against</i> conception
aqua-, hydr-	Water	Aquatic, Hydration	<i>Of water</i> , <i>With water</i>
arthro-	Joint	Arthropod, Arthritis	<i>Jointed</i> foot, <i>Joint</i> inflammation
-ase	Enzyme	Amylase, Lipase	<i>Enzyme</i> that breaks down carbohydrates, <i>Enzyme</i> that breaks down lipids
auto-	Self	Autotroph	<i>Self</i> feeder (can make their own energy, usually by photosynthesis)
avi-, orni-	Bird	Aviary, Ornithologist	<i>Bird</i> cage, <i>Bird</i> studier
bene-	Well Good	Beneficial	Mutualistic relationships benefit both organisms
bi-, di-, diplo-	Two	Bipedal, Diploid, Diplococcus	<i>Two</i> feet, <i>Two</i> sets of chromosomes, <i>Two</i> round bacteria
bio-, vita-	Life	Biosphere, Vitamin	Where <i>life</i> exists on earth, Organic molecules necessary for <i>life</i>
blast-	Germinate, Sprout, Bud	Blastula	Single layer of cells surrounding a cavity formed by cleavage of the fertilized egg
card-	Heart	Cardiology	Study of the <i>heart</i>
carn-	Meat, Flesh	Carnivore	<i>Meat</i> -eater
cat-, de-	Down	Catabolic, Decomposer	Break <i>down</i> of big molecules into small molecules, Break <i>down</i> of dead organisms
centi-	100	Centigrams	<i>100</i> grams
chel-	Claw	Cheleped, Chelicerata	<i>Clawed foot</i> (<i>lobster's big claw</i>), Classification of spiders with small <i>claws</i>
ceph-	Head	Cephalization	Concentration of sense organs at the front of an animal's body, its <i>head</i>
cerv-	Neck	Cervical vertebrae	Bones of the <i>neck</i>
chloro-	Green	Chlorophyl	<i>Green</i> leaf
chrom-	Color	Chromosome	<i>Colored</i> body
-cide	Kill	Herbicide, Insecticide	Plant <i>killer</i> , Insect <i>killer</i>
co-, com-, con-	Together, Both, With	Codominance, Community, Conjugation	<i>Both</i> alleles (trait type – size, color) are dominant, Organisms living <i>together</i>
coel (seel)	Space, Cavity, Hollow	Eucoelomate	Having a true body <i>cavity</i> or <i>hollow space</i> (within the mesoderm germ layer)
corp, som	Body	Corpse, Somatic cell	Dead <i>body</i> , <i>Body</i> cell (any cell that is not an egg or sperm)
-cyst	Capsule, Sac, Pouch	Nematocyst	A capsule within specialized cells of certain coelenterates (jellyfish) containing a barbed, threadlike tube that delivers a paralyzing sting
-cyte	Cell	Erythrocyte, Osteocyte	Red blood <i>cell</i> , Bone <i>cell</i>

deca-, deci-	10	Decameter, Deciliter	10 meters, 10 liters
decid-	Cut Off	Deciduous	Deciduous trees lose their leaves in the fall
dendro-, arbor-	Tree	Dendrochronology, Arboretum	Counting <i>tree</i> rings to determine its age, Place where many different <i>trees</i> grow
dent, dont	Tooth or Teeth	Dental plaque, Orthodontist	<i>Teeth</i> with patches of bacterial growth, Dr. who straightens <i>teeth</i>
derm	Skin	Epidermis, Ectoderm	Top <i>skin</i> layer, Outer layer of tissue/skin during embryo development
deutero-	Second	Deuterostome	Mouth develops second (the anus develops first)
dia-, dif-, diss-	Through, Apart, Across	Diarrhea, Dissect, Diffusion	Flow <i>through</i> , Cut <i>apart</i> , <i>Across</i> (cell membrane)
dors-, noto-	The Back	Dorsal fin, Notochord	Fin on the <i>back</i> of a fish, A embryonic structure that will become vertebrae
echin-	Spiny	Echinoderm, Echidna	Spiny skin (sea star), (spiny anteater)
eco-	Where one lives, Home	Ecology	Study of <i>where organisms live</i>
ecto-, exo-	Out, Outside	Ectoderm, Exoskeleton	<i>Outer</i> layer of tissue during embryo development, Skeleton on <i>outside</i> of body
-emia	Blood Condition	Hyperglycemia, Sickle cell anemia	High blood sugar levels, Sickle shaped red blood cells (should be circular)
entomo-, insect	Insect	Entomologist, Insectivore	<i>Insect</i> studier, <i>Insect</i> eater
epi-	Upon, Over, Atop	Epidermis, Epicardium, Epiphytes	<i>Upon</i> the dermis (skin), <i>Over</i> the heart, <i>Atop</i> a plant
Equ-, iso-	Equal, Same	Isotonic, Equilibrium	Solute levels are <i>equal</i> on both sides of a membrane (inside & outside the cell)
erthr-	Red	Erythrocyte	<i>Red</i> blood cell
eu-	True	Eukaryote, Eucoelomate	<i>True</i> nucleus (protective membrane around DNA), <i>True</i> body cavity
ex-, extra-, exo-	Out, Outside, Beyond	Extinct, Extracellular, Extrapolation	Died <i>out</i> , <i>Outside</i> the cell, <i>Beyond</i> known values (on a graph)
gastr-	Stomach	Gastrointestinal (GI)	<i>Stomach</i> and intestines
geo	Earth	Geotropim	A plant's response to the <i>earth's</i> gravity
hapl-, mono-, uni-	One	Haploid, Monosaccharide, Unicellular	<i>One</i> set of chromosomes, <i>One</i> unit of sugar (glucose), <i>one</i> celled organism
herb-, -phyte	Plant	Herbivore, Epiphyte	<i>Plant</i> eater, <i>Atop</i> a <i>plant</i>
homo (greek)	Same	Homozygous	Same alleles (form of a gene);
hyper-	More, Excessive	Hypertonic, Hypertension	<i>More</i> solute (something dissolved in water), <i>Excessive</i> blood pressure
hypo-, sub-	Less, Below	Hypotonic, Hypotension, Subatomic	<i>Less</i> solute, <i>Below</i> normal blood pressure, Below atoms (protons, neutrons, electrons)
lingu	Tongue	Sublingual	Under the <i>tongue</i>
gnath (nath)	Jaw	Agnathan	A fish without a <i>jaw</i>
gram, -graph	Written or Picture	Electrocardiogram, Sonography	<i>Print out</i> of the heart's electrical activity, Taking <i>pictures</i> using sound waves
helix	Spiral, Coil	Double helix	Two strands in a <i>spiraled</i> shape
hem-	Blood	Hemorrhage	<i>Bleed</i> heavily
hepato-	Liver	Hepatitis	Inflammation of the <i>liver</i>
herp-	Reptile	Herpetologist	Study of <i>reptiles</i> (lizards, croc's, turtles, and snakes)
hetero-	Different, Other	Heterozygous, Heterotroph	Offspring gets <i>different</i> forms of same trait (Tt), <i>Other</i> feeder (ex. herbivore)
ichthyes	Fish	Chondrychthyes, Osteichthyes	<i>Fish</i> with a cartilage skeleton, <i>Fish</i> with a bony skeleton
inter-	Between	Intercellular	<i>Between</i> cells
intra-, endo-	Inside	Intracellular, Endoderm	<i>Inside</i> a cell, <i>Inside</i> layer of a developing embryo
-itis	Inflammation of	Dermatitis, Laryngitis	<i>Inflammation</i> of the skin, <i>Inflammation</i> of the larynx

			(voicebox)
karyo, caryo	Cell Nucleus	Prokaryote, Procaryotic	Cells without a nucleus
kilo-, mill-	1000	Kilogram, Milliliter	1000 grams, 1000 th of a liter
leuco-, leuko-	White	Leucocyte	White blood cell
loc	Place	Locus	Place on a chromosome where a specific gene is found
logy	Study or Science of	Mycology, Virology	Study of Fungi, Study of Viruses
lys-	To break	Lyses, Cytolysis	Process of <i>breaking</i> up or digesting a cell membrane causing cell death
macro-, mega-	Large	Macromolecule, Megafauna	Large molecules (lipids, carbohydrates, proteins, nucleic acids), <i>Big</i> animals
Mal, dis, dys	Bad or Ill	Malnutrition, Disease, Dystrophy	The tumor was malignant.
mar-	Sea	Marine Biology	Study of life in the Sea or Ocean
medi-, meso-	Middle	Medial, Mesoderm	Middle, Middle layer of tissue during embryo development
meta-	Change	Metamorphosis, Metastasis	Change in shape or location; Cancer cells that change location (spread),
meter	Measurement	Spirometer, Sphygmomanometer	Measures inhalation & exhalation, Measures blood pressure
micro-	Small	Microsporangia, Microbiology	Small spore carriers (male), Study of microbes (bacteria, viruses, etc.)
morph	Shape, Form	Mesomorph, Metamorphosis	Middle <i>form</i> , Change in <i>shape</i> (tadpole to frog)
multi, myria, poly-	Many	Multicellular, Myriapod, Polysaccharide	Organism made of <i>many</i> cells, Organism w/ <i>many</i> feet, <i>Many</i> monosaccharides
muta-	Change	Mutation	Change in the # or sequence of DNA
myo-	Muscle	Myofibril, Fibromyalgia	Muscle cell, Muscle pain
nasal, rhin, probosc	Nose	Nasal septum, Rhinoplasty, Proboscis	Wall dividing <i>nasal</i> cavity, Surgery of reshaping the <i>nose</i> , Elephant's <i>trunk</i>
neo-	New	Neonatal	Newborn
nephr-, renal	Kidney	Nephron, Renal vein	Part of the <i>kidney</i> that filters/cleans blood, Vessel taking blood to the <i>kidney</i>
nom-	Name	Binomial nomenclature	Two- <i>name</i> naming system (Homo sapien = Humans)
oct-	8	Octopus	8 feet
oma	Tumor, Swelling	Carcinoma, Lymphoma	Cancer-causing <i>tumor</i> , <i>Tumor</i> of the lymphatic system
omni-, toti-	All	Omnivore, Totipotent	Eats <i>all</i> – plants & animals, <i>All</i> important cell (zygote) – becomes <i>all</i> cells
oo-, ov-	Egg	Oogonia, Oviduct, Oviparous	Egg stem cells, Egg carrying tube, Eggs that are hatched outside the mother
orth-	Straight	Orthoptera, Orthodontist	<i>Straight</i> -winged insect order (grasshoppers), Dr. who <i>straightens</i> teeth
ose, gly, sacchar	Sugar	Glucose	A simple <i>sugar</i> or monosaccharide made by photosynthesis in autotrophs
-osis	Act, Condition	Acidosis	Too much acid in body fluids
oste-	Bone	Osteoarthritis, Osteocyte	Inflammation where <i>bones</i> meet (joint), <i>Bone</i> cell
paleo-, archeo-	Old, Ancient	Paleontology, Archeology	Study of fossils and the history of earth, Study of <i>ancient</i> civilizations
para-	Beside	Parallel, Parapodia	<i>Side</i> by <i>Side</i> , Feet to the <i>side</i>
patho-	Disease	Pathogens	<i>Disease</i> -causing organisms (some bacteria, some viruses, etc.)
ped, pod	Feet, Foot	Centipede, Tetrapod	100 <i>feet</i> , 4 <i>feet</i>
pent-	5	Pentradial, Pentose	5 spokes or rays (sea star has 5 rays/arms); 5 carbon sugar
peri-	Around	Pericardium	<i>Around</i> the heart
phago, troph, vore	To Feed or Eat	Phagocyte, Autotroph, Carnivore	<i>Eating</i> cell (white blood cells), Self- <i>Feeders</i> (photosynthesizers), Meat <i>eater</i>
phore	Carry, To Bear	Chromatophore	Color or pigment <i>carrying</i> cell

photo-, lumin	Light	Photosynthesis, Bioluminescence	Using <i>light</i> to make glucose, Organisms that can create <i>light</i>
phyte, phyto	Plant	Epiphyte	A <i>plant</i> that grows atop of another <i>plant</i>
pinn-, plum-, -pter	Wing, Feather, Fin	Pinnepedia, Plumage, Hymenoptera	Using <i>fins</i> for feet (seals), <i>Feather</i> shape & patterns, Straight membraned <i>wings</i>
pino-	Drink	Pinocytosis	Process of a cell engulfing/ <i>drinking</i> liquids or dissolved substances
platy-	Flat	Platyhelminthes	<i>Flatworm</i> , <i>Flat</i> foot
ploid	Chromosome	Haploid, Diploid	One set of <i>chromosomes</i> , Two sets of <i>chromosomes</i>
pneumo-, pulmo-	Lungs	Pneumonia, Pulmonary artery	Infection of the <i>lungs</i> , Vessel taking blood from the heart to the <i>lungs</i>
post-	After	Post mortem	<i>After</i> death
pre-, pro	Before, Forward	Prenatal	<i>Before</i> birth
prim-, prot-	First	Primary consumer, Protozoa	<i>1st</i> organisms to eat producers (herbivores), <i>1st</i> animal
pseudo-	False	Pseudocoelomate, Pseudopodium	<i>False</i> body cavity (between ecto- & endoderm), <i>False</i> foot (found in amoeba's)
quat-, quad, tetra-	4	Quaternary, Quadiceps, Tetrapod	<i>4th</i> , 4 heads, 4 feet
re-	Again	Reproduce	Produce <i>again</i>
rhea, rrhea	Flow/Discharge	Diarrhea	Frequent passage of loose, watery, soft stools
sal	Salt	Saline	Full of salt or salt containing
sapr-	Rotten	Saprotroph	Feeds on <i>Rotting</i> organic matter/dead organisms (also called decomposers)
schizo-	Split	Schizocoely, Schizophrenia	Cavity formed at the <i>split</i> of the endo- & ectoderm (protostomes), <i>Split</i> mind
scope	View, See	Microscopic, Macroscopic	To <i>see or view</i> something small, To <i>see or view</i> something w/o using a scope
sect, -tom	Cut	Bisect, Anatomy	<i>Cut</i> in two, To <i>cut</i> up
semi-, hemi-	One-Half	Semipermeable, Hemisphere	Allows some (1/2), but not all things through, <i>One-half</i> a sphere (ball-shape)
sperm	Seed	Spermicide, Spermatid	<i>Sperm</i> killer, A small or immature <i>sperm</i>
spir	Breathe	Inspire, Spiracle	To <i>breathe</i> in, Hole found on insects for air to enter and leave (<i>breathing</i>)
stas, stat	Unchanging	Homeostasis	<i>Unchanging</i> chemical conditions in healthy organisms
stom-, ora	Mouth	Stomata, Oral cavity	Hole or <i>mouth</i> in leaves allowing gas exchange (O ₂ & CO ₂), <i>Mouth</i> space
sym-, syn-, sys	With, Together	Symbiosis, Synthesize, System	Organisms living <i>with</i> each other, Put <i>together</i> , Working <i>together</i>
tax-	Arrange	Taxonomy	A system used to <i>arrange</i> or classify a large number of organisms
telo-	End	Telophase, Telomeres	<i>End</i> of mitosis, <i>End</i> or tip of chromosomes
terr	Land	Terrestrial ecosystem	All living and nonliving things in a designated area on <i>land</i>
tert-, tri-	3	Tertiary, Trisomy	<i>3rd</i> , 3 bodies (chromosomes)
therm	Heat	Thermophile, Thermometer	Bacteria that live in <i>hot</i> areas, <i>Heat</i> measuring instrument
toxic	Poison	Neurotoxin, Hemotoxin	<i>Poison</i> to the nervous system, <i>Poison</i> in the blood
trans-, per-	Across, Through	Transport, Transdermal, Permeable	<i>Across</i> a cell membrane, <i>Through</i> the skin, Through a cell membrane
trop, volv	Turn, Change	Phototropism, Evolution	Plant's response of <i>turning</i> toward light, How organisms <i>change</i> over time
troph	To feed, eat	Autotroph, Heterotroph	Self <i>feeders</i> (Autotrophs); Other <i>feeder</i> (Heterotroph)
ventr-	Belly	Ventral	Belly portion of an organism (portion of a worm that touches the ground)
vore	Devour	Carnivore	Carnivores devour meat or flesh
zo	Animal	Zoology	Study of <i>animals</i>
zyg	Yoke (egg + sperm)	Zygote, Homozygous	Union of <i>egg</i> & <i>sperm</i>

