

PREFIXES, SUFFIXES, AND STEMS

The following list gives the meaning of prefixes, suffixes, and stem that are commonly used to form scientific terms. Whenever you encounter a new term in your study of biology, break it apart and try to find the parts in this list. Such a habit will greatly simplify your mastery of biological vocabulary.

As an example, you might take the word *nephrology*. The stem *nephro-* is derived from the Greek word *nephros*, meaning *kidney*, while the stem *log-* is derived from the Greek word *Logos*, meaning *thought* or *study of*. You might later encounter the word *nephrolith*, and you would then only have to determine the meaning of the suffix *-lith* since you would already know the meaning of the first part of the word. Or when you ran across such words as *bacteriology* and *zoology*, you would probably have a good idea of what they mean. After some practice, you will be surprised how many new words you can define without looking them up.

It has often been necessary to add a vowel to combining forms for pleasing pronunciation. For example, *bacteri-* + *-logy* becomes *bacteriology*. For the same reason it has been necessary, at times, to drop or change a vowel in a prefix, suffix, or stem. For example, *gastro-* becomes *gastric*, the adjective pertaining to the stomach.

Most scientific terms are derived from either the ancient Greek or the Latin because neither of these languages is in used now so that they are unchanging, and also they are studied universally. As a result, you will find that Latin noun endings are often used in biology. As a help in determining the plural of words with Latin endings, you might memorize the following:

QUIZ 1	
a-, an-	no; lacking; none
ab-	away from; out from
ac-	to; toward
-aceous; -aceous	of or pertaining to
acou-	hearing
acr-; acro-	extreme; peak
ad-	to; toward
adeno-	gland
agri-	field, soil
-al	having character of
alb-	white
-algia	pain
alto-	high
ameb-	change; alternation
amphibi-	leading a double life
ampho-; amb-	both
an-	not; without
ana-	up
andro-	masculine; man
anemo-	wind
angio-	vessel
ante-	before; ahead of time
antero-	front
antho-	flower
anti-	against
anthropo-	man
ap-	to; toward
aqu-	water
archaeo-	primitive; ancient
arthro-	joint
aster-; astr-	stars
-ate	used in forming verbs from nouns
-ation	used in forming nouns from verbs
atom-	vapor
audi-	hear
auto-	self

bactr-	stick; club
barb-	beard
baro-	weight
bath-	depth; height
bene-	well; good
bi-	two; twice; double
bio-; bi-	life; living
-blast	sprout; germ
brachi-	having arms
branchi-	having fins
brev-	short
bronch-	windpipe
calor-	heat
carb-	coal; carbon
cardi-	heart
carn-	meat
carp-	fruit
carpal-	wrist
caud-	tail
QUIZ 2	
cell-	storeroom; chamber
-cene	new; recent
centi-	hundredth
centr-	center
cephal-	head
cervic-	neck
chem-	referring to chemistry
chlor-	green
chrom-; -chrome	color
chym-	juice
-cide	killing
circum-	around; about
cirru-	hairlike curls
co-	with; together
cocc-	seed
coel-	hollow
coll-	glue

com-	with; together
con-	with; together
coni-	cone
contra-	against
corp-	body
cosmo-	world; order; form
cotyl-	cup
counter-	against
crypt-	hidden; covered
-cule; -culus	added to nouns to form diminutive
cucmul-	heaped
cuti-	skin
cyan-	dark blue
-cycle; cyci-	ring; circle
cyst-	bladder; pouch
cyt-; -cyte	cell; receptacle
dacty-	finger
deca-	ten
deci-	tenth
deliquesc-	become fluid
demi-	half
dendr-	tree
dent-	tooth
derm-	skin
di-	two; double
dia-	through; across
digit	finger; tow
din-	terrible
dis-	apart; out
dorm-	sleep
dors-	back
du-; duo	two
-duct	lead
dynam-	power
dys-	ill; bad
ec-	out of; outside
echin-	spiny; prickly
eco-	house
QUIZ 3	
ect-	outside; without
electro-	electric; electricity
en-	in; into
-en	made of
encephal-	brain
end-; ent-	within; in
enter-	intestines
-eous	nature of; like
epi-	on; above
-err	wander; go astray
erythro-	red
ethno-	race; people
eu-	well; good
extra-	beyond; outside of
ex-	out of
-fer	bear; carry; produce
ferro-	iron

fibr-	fiber; thread
-fid; fis-	divided into; split
-flect; -flex	bend
flor-	flower
fluor-	fluorine
foli-	leaf
fract-	break
galact-; galax-	milk; milky fluid
gastro-	stomach
geo-	land; earth
-gen; -gine	producer; former
-gene; gene-	origin
-gest	carry; produce
glob-	ball; round
glottis	mouth of windpipe
-gon	angle; corner
-gony	offspring; generation; coming into being
-grade	step; division
-gram	writing; record
-graphy; -graph	writing; record
grav-	heavy
gross	thick
gymno-	naked
gyn-	female
gyr-	ring; circle; spiral
haem-; hem-	blood
bepat-	liver
herb-	grass
hetero-	different; other
hex-	six
hibern-	winter
QUIZ 4	
hipp-	horse
hist-	tissue
holo-	entire; whole
homo-	man
homo-	same; alike
hort-	garden
hybrid	mongrel
hydr-	water
hygr-	wet; moist
hypo-	beneath; under; less
hyper-	above; beyond; over
hypho-	weaving
hypno-	sleep
-ic	added to nouns to form adjectives
ichthy-	fish
ign-	fire
im-	not
in-	to; toward; into
in-	not
-ine	of or pertaining to
infro-	below, beneath
inter-	between
intra-	within; inside

-ion	go; come
-ism	a state or condition
iso-	equal; same
-itis	inflammation; disease
kilo-	thousand
lachry-	tear
lact-	milk
lat-	side; flank
-less	without
leuc-	white; bright; light
lign-	wood
lin-	line
lingu-	tongue
liqu-	become fluid, liquid
lip-	fat
lith-; -lite	stone; petrifying
loc-	place
-logy	study
-lysis; -lyte; -lyst	dissolve; decompose
macr-	large
mal-	bad; evil
malle-	hammer
mamm-	breast
marg-	border; edge
mast-	breast
med-	middle
meg-	great; million
mela-; melan-	black; dark
mes-	middle; half; intermediate
met-; meta-	between; along; after
meteor-	lofty, high, in air
-meter; -metry	way of measuring, instrument for measuring
metro-	uterus
QUIZ 5	
micro-	small
milli-	thousandth
mis-	wrong; incorrect
mito-	thread; filament
mole-	mass
mono-	one; single
mont-	mountain
mort-	death
mov-; -mot	move
morph-	shape; form
multi-	many
mycel-	threadlike
mycet-	fungus
myria-	many
moll-	soft
nas-	nose
nemat-	thread
neo-	new; recent
nephro-	kidney
-ner-	moist; liquid
neur-; nerv-	nerve; tendon

noct-; nox-	night
-node	knot
-nomy; -nome	distribute; arrange; law
non-	not
not-	back
nuc-	center
ob-	against
ocul-	eye
oct-	eight
odont-	tooth
-oid	like in form or shape
olf-	smell
omni-	all
oo-	egg
opthal-	eye
opt-; opsy	eye; vision
orb-	circle; round; ring
orth-	straight; correct; right
oscu-	mouth
oste-	bone
-ous	full of; abounding in
ov-	egg
oxy-	sharp; acid; oxygen
pachy-	thick
paleo-	old; ancient
palm-	broad; flat
pan-	all
par-	beside; near; equal; bring forth
path-; -pathy	disease; suffering
-ped	foot
pent-	five
QUIZ 6	
per-	through
permea-	pass; go
phag-	eat
pheno-	show
phil-	living; fond of
phon-; -phone	sound
-phore	bearer
photo-	light
phyc-	seaweed; algae
-phyll	leaf
physi-	nature; natural qualities
-phte; phyt-	plant
plan-	roaming; wandering
plasm-; -plast	form; formed into
pleur-	rib; lung
pneumo-	lungs; air
-pod	foot
poly-	many; several
por-	opening
port-	carry
post-	after; behind
pom-	fruit
pre-	before; ahead of time
pro-	forward; favoring

procto-	rectum; anus
proto-	first; primary
pseud-	false; deceptive
pter-	having wings or fins
pulmo-	lung
puls-	drive; push
pyr-	heat; fire
quadr-	four; four-fold
quin-	five
radi-	ray; spoke of a wheel; energy in rays
re-	again; back
rect-	correct; right
ren-	kidney
ret-	net; made like a net
rhin-	nose
rhiz-	root
rubr-	red
saccharo-	sugar
sapr-	rotten
saur-	lizard
scler-	hard
sci-	know
scope	look; observe
-scribe; script	write
semi-	half; partly
QUIZ 7	
sept-	partition; seven
septic	putrefaction; infection
sex-	six
-sis	condition; state
sol-	sun
solv-	loosen; free
somn-	sleep
son-	sound
spec-; spic-	look at
sperm-	seed
spher-	ball
-spire	breathe
spore	seed
stat-	standing; placed
stell-	stars
stern-	breast; chest

stom-; -stome	mouth
strat-	layer
stereo-	solid; three dimensions
strict-	drawn tight
styl-	pillar
sub-	under; below
super-	over; above; on top
sur-	over; above; on top
sym-; syn-	together
tachy-	quick; swift
tarso-	ankle
tax-	arrangement
tele-	far off; at a distance
terr-	earth
tetr-	four
thall	young shoot
therm-	heat
-tom	cut; slice
toxico-	poison
top-	place
trans-	across
tri-	three
trich-	hair
troph-	one who feeds; well fed
trop-	turning; changing
-ule	diminutive
ultra-	beyond
ur-	urine
vas-	vessel
vect-	carry
ven-; vent-	come
ventr-	belly
vice-	in place of
vig-	strong
vit-; viv-	life
volv-	roll; wander
vor-	devour; eat
xanthin-	yellow
zo-; -zoa	animal
zyg-	yolk
zym-	yeast