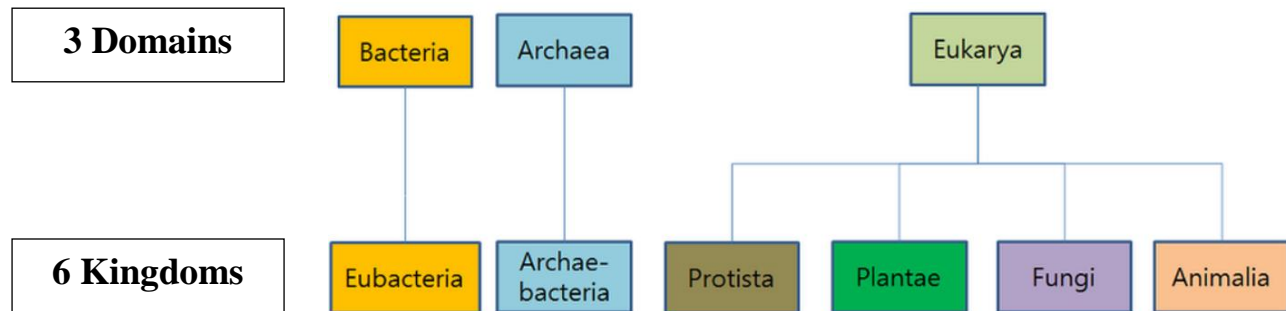


AP BIOLOGY KINGDOM AND BIOME SURVEY

Life is currently classified in **3 Domains** and **6 Kingdoms** as in the chart below. (Kingdom Protista is being researched and may be divided in the future!).



Create a **3 PAGE color image collage** on computer paper with the following images to be included:

On page 1:

- at least 2 plants from each biome

On page 2:

- at least 2 animals from each biome (HUMANS not included)

On page 3:

- any 5 bacteria (Bacteria or Archaea)
- any 5 protists
- any 5 fungi
(page 3 organisms are from any biome)

*Label each image with the **biome** it occupies, and both the **common name** and the **scientific name** (*Genus species*—and note that **Genus is capitalized** but **species is not**, and both words are in ***italics***).

* Make 2 copies of each page – 1 set for your notebook/binder **and** 1 set to submit.

* Make a **COVER SHEET** for the pages you will submit with your **name, block,** and the **resources** you used to find the images and information.

The major biomes are:

- Tropical Rainforest
- Temperate Rainforest
- Desert
- Tundra
- Taiga (Boreal Forrest)
- Grassland
- Savanna
- Freshwater
- Marine

The reason for your choices is up to you: you like the image, the name, how the organism works, you've never heard of before, it's your favorite, etc. Have fun looking!

The more unique/unusual the organism is the better!! The goal is to use this collage is to *raise your awareness* of what's out there in the world of biology that you may not have realized before this assignment.

Here's a good place to start, but research **SEVERAL** sources <https://askabiologist.asu.edu/explore/biomes>

Have fun!! This is due the first day of class.

Name _____ Block _____

GREEK AND LATIN ROOTS, PREFIXES, and SUFFIXES

This assignment is designed to help you learn the language of science, so we'll start with something familiar to everyone -- human biology. We will refer to terms and their prefixes and suffixes throughout the semester.

Instructions: For each root in the list below, find a word that incorporates the root. The word does not have to be a medical or technical term. However, be sure that the word you choose includes the **appropriate root with its given meaning**, rather than just having the same letters without the correct meaning. For example, the word "apple" begins with the letter "a", but it is not an appropriate word to illustrate use of the first root in the list, "a" meaning "without", whereas "atheist" would. To verify that a particular root is appropriately used in the word, look up the word in a dictionary or glossary or Google it.

	ROOT	MEANING OF ROOT	WORD(S) CONTAINING ROOT
1	A-, AN-	not, without	
2	AB-	away	
3	ANTI-	against	
4	ARTHR-	joint	
5	BI-, DI-	two, double	
6	BIO-	life	
7	-BLAST	early stage, precursor	
8	CARDIA-, CARDIO-	heart	
9	CHROM-	colored	
10	CO-, COM-, CON-	with, together	
11	CONTRA-	against	
12	CUT-	skin	
13	-CYST	bladder, hollow	
14	-CYTE	cell	
15	DERM-	skin	
16	DIA-, DI-	through, across	
17	DORS-	back	
18	EC-, EX-	out of, out from	
19	-ECTOMY	excision of	

	ROOT	MEANING OF ROOT	WORD(S) CONTAINING ROOT
20	-EMIA	of blood, in blood	
21	EN-, END-, ENDO-	within	
22	EPI-	on, upon, over	
23	EXTRA -	outside of, beyond	
24	FOLI-	leaf	
25	-GEO	land, earth	
26	GASTR-	stomach	
27	-GENESIS	origination or development of	
28	GLYC-, GLYCO-	sweet	
29	-GRAM, -GRAPH	record, write	
30	HEM-, HEMA-, HEMO-	blood	
31	HEMI-, SEMI-	half	
32	HETERO-	different	
33	HOMO-, HOMEO-	same, similar	
34	HYDR-	water	
35	HYPER-	above, over, excessive	
36	HYPO-	below, under, deficient	
37	HYBERN-	winter	
38	INTER-	between	
39	INTRA-	within	
40	ISO-	equal	
41	-ITIS	inflammation	
42	LEUC-, LEUK-	white	
43	-LYSIS	loosening, dissolving, separating	
44	MACRO-	large	
45	MARG-	border, edge	
46	METR, METER	measure	
47	MICR-	small	
48	MONO-	one, single	

	ROOT	MEANING OF ROOT	WORD(S) CONTAINING ROOT
49	MYO-	muscle	
50	NEO-	new	
51	NEUR-	nerve	
52	-OLOGY	study of	
53	-OMA	tumor, swelling	
54	OS-, OSTEO-	bone	
55	-OSIS	abnormal condition	
56	-OSTOMY	formation of an artificial opening	
57	-OTOMY	incision into	
58	PARA-	beside, near	
59	PER-	through	
60	PERI-	around	
61	PHOT-	light	
62	POLY-	many	
63	POST-	in back of, after	
64	PRE-	in front of, before	
65	RETRO-	behind, to come before	
66	SUB-	below, beneath	
67	SUPER-, SUPRA-	above, beyond	
68	THERM-	heat	
69	TOX-	poison	
70	TRANS-	across, by way of	

WRITING EXERCISE ON ROOTS, PREFIXES AND SUFFIXES

Instructions: Using the list “Prefixes, Suffixes, and Stems” that begins after this page, give a definition of each word below. Do **not** look the words up in a dictionary or textbook—use the root words!!! Seriously—you will thank me next May! 😊

1. microscope - _____

2. chromosome - _____

3. hydrolysis - _____

4. synthesis - _____

5. hypodermic - _____

6. neurology - _____

7. cytoplasm- _____

8. endothermic - _____

9. hydrophilic - _____

10. lysosome - _____

11. photosynthesis - _____

12. antidiuretic - _____

13. polymerase - _____

14. monomer - _____

15. epigenetics - _____

16. hydrophobic - _____

17. chromosome - _____

18. biogenesis - _____

19. prokaryote - _____

20. phagocyte - _____

Prefixes, Suffixes, and Stems

This list gives the meaning of prefixes, suffixes, and stem that are commonly used to form scientific terms. When you encounter a new term, break it apart and try to find the parts in this list. This skill 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. With words, it has often been necessary to add a vowel to combine forms for pleasing pronunciation. For example, *bacteri-* + *-logy* becomes *bacteriology*, or *hydr-* + *-lysis* becomes *hydrolysis*. 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 use 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 will memorize the following 1st Semester:

Common Roots used frequently

-ase	an enzyme
-ose	a sugar/carbohydrate

Quiz 1

a-,an-	no, lacking, none
ab-	away from, out from
ac-	to, toward
-aceus,-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-	on both sides
an-	not ;without
ana-	back, up, again
andro-	masculine; man
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
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-	carbon
cardi-	heart
carn-	meat
carp-	fruit
carpal-	wrist
caud-	tail

Quiz 2

cell-	storeroom, chamber	dynamo-	power
-cene	new; recent	dys-	ill; bad
centi-	hundredth	ec-	out of; outside
centr-	center	echin-	spiny; prickly
cephal-	head	eco-	house, home
cervic-	neck		
chem..-	referring to chemistry		
chlor-	green		
chrom-; -chrome	color		
chym-	juice		
-cide	killing		
curcum-	around; about		
cirru-	hair like curls		
co-	with; together		
cocc-	seed		
coel-	hollow		
coll-	glue		
com-, con-	with; together		
coni-	cone		
contra-	against		
corp-	body		
cosmo-	world; order; form		
coytl-	cup		
counter-	against		
crypt-	hidden; covered		
-cule; -culus	added to nouns to form diminutive		
cuti-, cutan-	skin		
cyan-	dark blue		
-cycle; cyci-	ring; circle		
cyst-	bladder; pouch		
cyt-; cyte, cyto	cell		
dactyl-	finger		
deca-	ten		
deci-	tenth		
demi-	half		
dendr-	tree		
dent-	tooth		
derm-	skin		
di -	two; double		
dia-	through; across		
digit	finger; toe		
dis-	apart; out		
dorm-	sleep		
dors-	back		
du-; duo	two		
-duct	lead		

Quiz 3

ect-	outside; without	haem-; hem-	blood
electro-	electric; electricity	hepat-	liver
en-	in; into	herb-	grass
-en	made of	hetero-	different; other
encephal-	brain	hex-	six
end-; ent -	within; in	hibern-	winter
enter-	intestines		
-eous	nature of; like		
epi-	on; above		
-err	wander; go astray		
erythro-	red		
ethno	race; people		
eu-	true; new; 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		
-gen; -gine	producer; former		
-gene; gene-	origin		
-gest	carry; produce		
galact; galax-	milk; milky fluid		
gastro-	stomach		
geo-	land; earth		
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; circular; spiral		

Quiz 4

hipp-	horse	mast-	breast
hist-	tissue	med-	middle
holo-	entire; whole	meg-	great; million
homo-	man	mela-; melan-	black; dark
homo-	same; alike	-mer,- mere	part, unit
hort-	garden	mes- middle; half;	intermediate
hybrid	mongrel	met-; meta-	between; along; after
hydr-	water	meteor-	lofty, high, in air
hygr-	wet; moist	-meter; -metry	way of measuring, instrument for measuring
hypo-	beneath; under; less		
hyper-	above; beyond; over		
hypho-	weaving		
hypno-	sleep		
-ic	added to nouns to form adjectives		
ichthy-	fish		
ign-	fire		
im-, in-	not		
in-	to; toward; into		
-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		
karyo-	nucleus		
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, separate; loosen		
macro-	large		
mal-	bad; evil		
malle-	hammer		
mamm-	breast		
marg-	border; edge		

Quiz 5

micro-	small	pan-	all
milli-	thousandth	par-	beside; near, equal; bring forth
mis-	wrong; incorrect	path-; -pathy	disease; suffering
mito-	thread; filament	-ped	foot
mole-	mass	pent-	five
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		

Quiz 6

per-	through	-scribe; script	write
permea-	pass; go	semi-	half; partly
phag-	eat		
phenol-	show		
phil-	living; fond of		
phon-; -phone	sound		
-phore	bearer		
photo-	light		
phyc-	seaweed; algae		
-phyll	leaf		
physic-	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-	'before' another in time		
procto-	rectum; anus		
proto-	first; primary		
pseudo-	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		
sclera-	hard		
sci-	know		
scope	look; observe		

Quiz 7

sept-	partition; seven	ven-; vent-	come
septic	putrefaction; infection	ventr-	belly
sex-	six	vice-	in place of
-sis	condition; state	vig-	strong
sol-	sun	vit-; viv-	life
solv-	loosen; free	volv-	roll; wander
-soma	body, structure	vor-	devour; eat
somn-	sleep	xanthin-	yellow
son-	sound	zo-; -zoa	animal
spec; spic-	look at	zyg-	yolk
sperm-	seed	zym-	yeast
sphere-	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		