AP BIOLOGY SUMMER ASSIGNMENT
Carteret High School
2018-2019

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Cover Page

Course: AP Biology	
Assignment title	AP Biology Summer Assignment: Word Roots / Biological Collection Photo Blog
Date due	2nd day of class
Estimated time for completion	10-20 hours
Resources needed to complete assignment	☒ School assigned textbook ☒ Other supplies: device(s) with internet and photography capabilities.
How the assignment will be assessed	The Word Roots component will be assessed through a test, while the Biological Collection Photo Blog will be scored using the accompanying rubric. Both assignments will be averaged together and will be counted as a test grade 1st quarter.
Purpose of assignment	☒ Review of foundational material/concepts/skills. ☒ Expose students to required material/concepts/skills/texts that cannot be covered during the academic year. ☐ Have students read material that will be discussed or used in class at the beginning of the year.

AP Biology Summer Assignment

Welcome to AP Biology! This course is designed to be the equivalent of a two-semester introductory biology course usually taken in the first year of college. In other words, it's a little like drinking from a fire hose. It will be a rewarding experience, but as with most things that are, it will also be challenging. Throughout the course, you will become familiar with major recurring ideas that persist throughout all topics and material.

The 4 Big Ideas of AP Biology
Big Idea 1: The process of evolution drives the diversity and unity of life.
Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.
Big Idea 3: Living systems store, retrieve, transmit and respond to information essential to life processes.
Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties.

On the pages that follow, you'll find detailed instructions of the two assignments that comprise your summer work for AP Biology. The first assignment is related to learning word roots to help with the vocabulary that you'll encounter in AP Biology. The second part deals with collecting, through photography, examples of biological terms or concepts and creating a photo blog of your collection.

You'll have a word root test on the 2nd day of AP Biology. Your photo blog will be due on the 2nd day of AP Biology as well. Both will be averaged together and counted as a test grade 1st quarter.

Included in this packet are the following documents:

Assignment #1 - Word roots

This assignment will help you tremendously with all the terminology you'll be learning in AP Biology and most immediately with the second part of your summer assignment – the photo blog. AP Biology can sound like a foreign language at times. Learning the root words that make up this terminology can make the rest of the course significantly easier. **On the second day of class, you will have a test on the word roots listed in this packet.** Study them however **YOU** learn best. Make flashcards, add them to a virtual study site like Quizlet or Study Stack, rewrite them, or draw pictures. Do whatever works for you. It is highly recommended that you break up the list you're responsible for and review them throughout the summer. Cramming them in at the last minute will likely be ineffective.

Word Roots List

A-,	no; lacking; none
ab-	away from; out from
ad-	to; toward
alb-	white
allo-	other
amph-; amb-	both
an-	not; without
ana-	up, away
andro	masculine; man
ante-	before; ahead of time
antero-	front
antho	flower
anti-	against
ap-	to; toward
aqu-	water
archaeo-	primitive; ancient
arthro-	joint
-ase	referring to enzyme activity
auto-	self
bene-	well; good
bi-	two; twice; double
bio-; bi-	life; living
-blast	sprout; germ
brachi-	having arms
branchi-	having fins
bronch-	windpipe
carb-	coal; carbon
cardi-	heart
carp-	fruit
cell-	storeroom; chamber
centi-	hundredth
centr-	center

cephal-	head
chlor-	green
chondr-	cartilage
chrom-; -chrome	color
-cide	killing
circum-	around; about
co-	with; together
Coel-	hollow
counter-	against
Cyan	blue
-cycle ; cyci-	ring; circle
cyt-; -cyte	cell; receptacle
dendr-	tree
Dent-	tooth
Derm-	skin
di-	two; double
dia-	through; across
dis-	apart; out
Dors-	back
du-; duo	two
-duct	lead
dys-	ill; bad
ec-	out of; outside
eco-	house
ect-	outside; without
en-	in; into
-en	made of
encephal-	brain
end- ;	within; in
enter-	intestines
epi-	on; above
erythro-	red

eu-	well; good, true
extra-	beyond; outside of
ex-	out of
fibr-	fiber; thread
-fid; fis-	divided into; split
flor-	flower
foli-	leaf
gastro-	stomach
-gene ;	origin
-gest	carry; produce
glob-	ball; round
gymno-	naked
gyn-	female
haem- ; hem-	blood
hepat-	liver
herb-	grass
hetero-	different; other
hex-	six
hist-	tissue
holo-	entire; whole
homo-	same; alike
hydr-	water
hypo-	beneath; under; less
hyper-	above; beyond; over
ichthy-	fish
im-	not
in-	to; toward; into
infro-	below, beneath
inter-	between
intra-	within; inside
-ism	a state or condition
iso-	equal; same

-itis	inflammation; disease
lat-	side; flank
-less	without
leuc-	white; bright; light
lip-	fat
-logy	study
-lysis; -lyte; -lyst	dissolve; decompose
macr-	large
mal-	bad; evil
mamm-	breast
marg-	border; edge
med-	middle
mela-; melan	black; dark
mes-	middle; half; intermediate
met-;	between; along; after
-meter; -metry	way of measuring, instrument for measuring
micro-	small
milli-	thousandth
mis-	wrong; incorrect
mono	one; single
mort-	death
mov-; -mot	move
morph-	shape; form
multi-	many
myc-	fungal
myo-	muscle
neo-	new; recent
nephro-	kidney
neur-;	nerve; tendon
noct-;	night
-nomy; -nome	distribute; arrange; law

non-	not
not-	back
nuc-	center
ob-	against
ocul-	eye
oct-	eight
-oid	like in form or shape
olf-	smell
omni-	all
oo-	egg
opthal-	eye
-osis	state or condition of
oste-	bone
-ous	full of; abounding in
ov-	egg
oxy-	sharp; acid; oxygen
paleo-	old; ancient
palm-	broad; flat
pan-	all
path-; -pathy	disease; suffering
-ped, pod	foot
pent-	five
permea-	pass; go
phag-	eat
pheno-	show
phil-	living; fond of
phon-; -phone	sound
photo-	light
-phyte; phyt-	plant
poly-	many; several
por-	opening
port-	carry
post-	after; behind
pre-	before; ahead of time

pro-	forward; favoring
proto-	first; primary
pseud-	false; deceptive
pulmo-	lung
quadr-	four; four-fold
radi-	ray; spoke of a wheel; energy in rays
re-	again; back
ren-	kidney
saccharo-	sugar
sapr-	rotten
semi-	half; partly
solv-	loosen; free
sperm-	seed
spher-	ball
-spire	breathe
spore	seed
stat-	standing; placed
strat-	layer
strict-	drawn tight
styl-	pillar
sub-	under; below
super-	over; above; on top
sym-;	together
-taxis	movement
tele-	far off; at a distance
tetr-	four
therm-	heat
toxico-	poison
trans-	across
tri-	three
troph-	one who feeds; well fed
ventr-	belly
vit-; viv-	life
xanthin-	yellow
zo-;	animal

Assignment #2 - Biological Collection Photo Blog

For this assignment, you will "collect" 25 photographic examples of biological terms/concepts and post them on a photo blog. Select any of the items from the Biological Collection List to include in your blog. This will introduce you not only to the language of biology, but also emphasize that biology is something that's *DONE* not just memorized. **A hardcopy of your Photo Blog Table of Contents AND a link to your photo blog is due the second day of class. The link should be written on the table of contents AND emailed to Dr. Dorrian at jdorrian@carteretschools.org.** Please see Dr. Dorrian if access to the needed technology is an issue.

Directions for the Biological Collection Photo Blog:

1. "Collect" an item by taking a picture of it. **Define**, in your own words, the biological term/concept. Also within a couple of statements, **explain** how the picture represents the term or concept. Use the Biological Collection List on page 5 to select terms/concepts for your blog.
2. Upload the photo, definition, and explanation to a blog that you create for the class. Google's Blogger is a free and easy blog. Find instructions on page 8 of this packet on how to set up a blog.
3. Be creative. If you choose an item that is internal to a plant or animal, like phloem, you could submit a photograph of the whole organism or a close up of one part, and then explain on the blog *what* phloem is and specifically *where* phloem is in the specimen.
4. Use original photos ONLY. You cannot use an image from any publication or from the internet. You must take the photo yourself. The best way to prove that the photo is your work is to have something in your picture that represents you. This could be a key chain, pen, bracelet, small toy, etc. Submit a picture of you with your proof object when you hand in your summer work.
5. You should only use natural items. Take a walk in your neighborhood, go to the zoo, go for a hike in the woods, etc. Humans are natural items and may be used, but only for a few entries.
6. This is an individual project. While brainstorming, discussing, and even going on collecting adventures together is welcome, your items and photos are to be unique. With over 90 concept choices, probability says there is a very slim chance that any two students will have the same items chosen from their list.
7. Be careful and respectful! Never touch plants or animals you are unfamiliar with. Don't kill or hurt any organisms. Don't remove any organisms from the natural environment.
8. Blog safely. See page 9 for guidelines for safe blogging.

Rubric for Biological Collection Photo Blog			
Point	Biological Collection Photo Blog Entry (per photo)	Point	Table of Contents*
1	Original photo posted to blog	3	Blog URL written AND emailed to teacher
1	Biological term/concept identified	2	Picture of you with your proof object submitted
1	Biological term/concept defined in own words	10	Each biological term/concept listed in the order it appears on blog
2	Biological term/concept and photo relationship explained fully	10	Blog is easy to follow and neatly presented
* Points in this selection are award in an all or none format. If the guideline is not fully met, **no points will be awarded**.			

Your photo blog is worth a maximum of 150 points (125 points for your photo blog (5 points for each photo blog entry) and 25 points for a completed Blog Table of Contents)

Biological Collection List

1. Adaptation of an animal
2. Adaptation of a plant
3. Altruistic behavior
4. Amniotic egg
5. Analogous structures
6. Animal that has a segmented body
7. Anther and filament of stamen
8. Archaebacteria
9. Asexual reproduction
10. ATP
11. Autotroph
12. Auxin producing area of a plant
13. Basiodiomycete
14. Batesian mimicry
15. Bilateral symmetry
16. Biological magnification
17. C3 Plant
18. C4 Plant
19. CAM Plant
20. Calvin Cycle
21. Cambium
22. Cellular respiration
23. Coevolution
24. Commensalism
25. Connective tissue
26. Cuticle layer of a plant
27. Detritivore
28. Dominant vs. recessive phenotype
29. Ectotherm
30. Endosperm
31. Endotherm
32. Enzyme
33. Epithelial tissue
34. Ethylene
35. Eubacteria
36. Eukaryote
37. Exoskeleton
38. Fermentation
39. Flower ovary
40. Frond
41. Gametophyte
42. Genetic variation within a population
43. Genetically modified organism
44. Gibberellins
45. Glycogen
46. Gymnosperm cone – male or female
47. Gymnosperm leaf
48. Hermaphrodite
49. Heterotrophy
50. Homeostasis
51. Homologous structures
52. Hydrophilic
53. Hydrophobic
54. Introduced species
55. Keystone species
56. Krebs cycle
57. K-strategist
58. Lichen
59. Lipid used for energy storage
60. Littoral zone organism
61. Long-day plant
62. Mating behavior (be careful!!)
63. Meristem
64. Modified leaf of a plant
65. Modified root of a plant
66. Modified stem of a plant
67. Mullerian mimicry
68. Mutualism
69. Mycelium
70. Mycorrhizae
71. Niche
72. Parasitism
73. Parenchyma cells
74. Phloem
75. Pollen
76. Pollinator
77. Population
78. Predation
79. Prokaryote
80. R-strategist
81. Radial symmetry (animal)
82. Redox reaction
83. Rhizome
84. Seed dispersal (animal, wind, water)
85. Spore
86. Sporophyte
87. Stigma and style of carpel
88. Succession
89. Taxis
90. Territorial behavior
91. Tropism
92. Unicellular organism
93. Vestigial structures
94. Xylem

Photo Blog Table of Contents

Name _____

Blog URL _____ URL submitted via email ☐

Your photo with proof object submitted via hardcopy ☐

Photo Order	Biological terms/concepts	Comments	Points Earned
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
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25			

Example Entries for Photo Blog

(http://popeapbiology2011.wordpress.com/2011/06/29/erin-hs-ap-biology-scavenger-hunt-pictures/)

Notice the toy giraffe in the pictures below. This is this bloggers proof object and is used to demonstrate that the photographs in the blog entries are indeed their original. **Make sure you have proof object in each of your photos.**

4. Detritovore

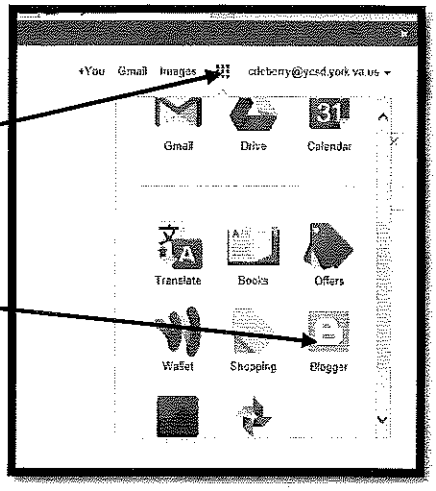
This is a picture of an earthworm. The earthworm represents a *detritivore*. A detritivore, also called a decomposer, is an organism that consumes non-living organic materials (corpses, fallen plant material, and wastes) to obtain its energy and nutrients. They can be found in many different areas (land and water). They can also be found in many different types, for example, fungi, bacteria, and protists, as well.

10. Modified Leaf

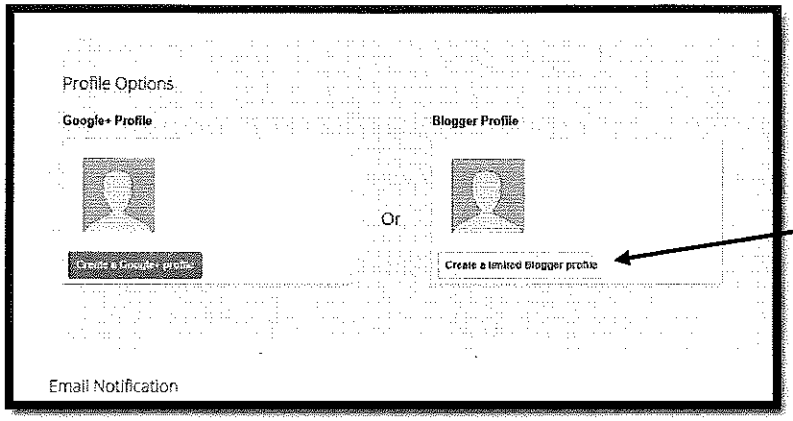
This is a picture of pine needles. Pine needles are an example of a *modified leaf of a plant*. A modified leaf is one that has adapted to perform another function, other than photosynthesis and transpiration. A pine needle's shape functions to retain moisture, which is helpful in dry and windy areas.

Setting up your AP Biology Biological Collection Photo Blog using Google's Blogger

1. Set up a Google account if you don't already have one.

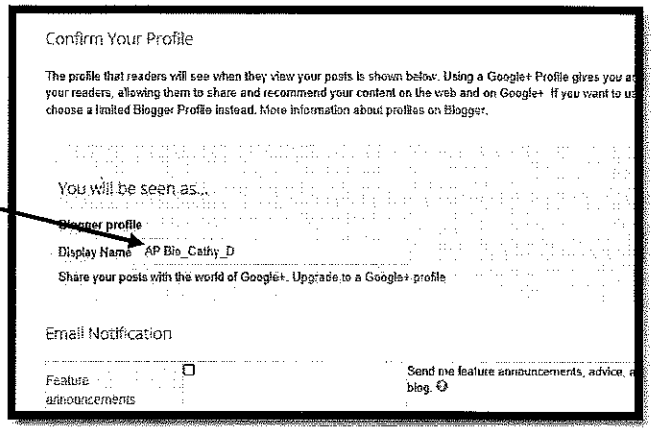


2. In the **Google Apps tool bar** (upper right corner), select **Blogger**.

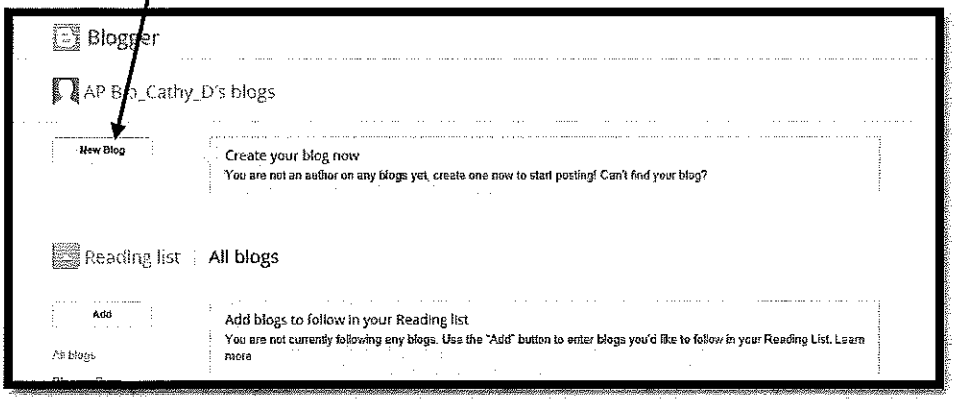


3. Next select Blogger Profile – **Create a Limited Blogger Profile.**

4. Next you'll need to enter a Blogger Profile. Use **AP Bio_First Name_Last Initial** as your format. (You'll probably want to de-select the Email Notification box.)



5. Click **New Blog** and follow the rest of the directions for setting up your photo blog for AP Bio.



6. Remember to upload your original 25 photos, definitions, and explanations by the 2nd day on AP Biology to your blog. Email a link to your blog to your AP Biology teacher by the 2nd day as well.

Guidelines for Safe Blogging (Adapted from Kim Foglia's Class Blog)

Blogging is a very public activity. Anything that is posted on the Internet stays there. FOREVER! Deleting a post simply removes it from the blog it was posted to. Copies of the post may exist scattered all over the Internet. That is why we need to be careful and follow some simple, clear, safety rules.

FIRST RULE: To protect your privacy, you need to set up your account using ONLY your first name. This means that many of you need to go in and change your profile. If you have the same first name as another classmate, then let's add only your last initial to your first name, like DanielF.

SECOND RULE: We do not use pictures of ourselves in our profiles. If you really want a graphic image associated with your posting use an avatar -- a picture of something that represents you but IS NOT of you.

Other teachers who have blogged with their classes have come up with a list of guidelines for student bloggers. One of them, Bud Hunt, has these suggestions, among others:

Students using blogs are expected to treat blog spaces as classroom spaces. Speech that is inappropriate for class is not appropriate for our blog. While we encourage you to engage in debate and conversation with other bloggers, we also expect that you will conduct yourself in a manner reflective of a representative of this school.

Never EVER EVER give out or record personal information on our blog. Our blog exists as a public space on the Internet. Don't share anything that you don't want the world to know. For your safety, be careful what you say, too. Don't give out your phone number or home address. This is particularly important to remember if you have a personal online journal or blog elsewhere.

Again, your blog is a public space. And if you put it on the Internet, odds are really good that it will stay on the Internet. Always. That means ten years from now when you are looking for a job, it might be possible for an employer to discover some really hateful and immature things you said when you were younger and more prone to foolish things. Be sure that anything you write you are proud of. It can come back to haunt you if you don't.

Never link to something you haven't read. While it isn't your job to police the Internet, when you link to something, you should make sure it is something that you really want to be associated with. If a link contains material that might be creepy or make some people uncomfortable, you should probably try a different source.

Keep all of these in mind as you create you Biological Collection Photo Blog for AP Biology. Email your teacher if you have questions or concerns about blogging.