



2019 Advanced Academics Summer Assignment

Pre-AP Biology (9th and 10th graders)

Dayton High School

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Due Date: August 20th

Learning the language of science is a lot like learning a new language. Scientists often use scientific words that most of us already know. For example, a scientist will say "neo" instead of "new," or "pseudo" instead of "fake". To learn science, you need to also learn this new language. Don't worry, though; this assignment will help you!

The Biology Summer Assignment is broken into two parts:

Part One: Prefixes/Suffixes
(Directions Below)

Part Two: Biology Term Scavenger Hunt
(See Page 6 for Directions)

Part One Directions:

Remember, most words can be broken up into a PREFIX (the beginning of the word) and a SUFFIX (the end of the word). The following tables contain 99 prefixes along with their meanings, as well as 13 suffixes and their meanings. You will only use these tables **(DO NOT LOOK THEM UP ON THE INTERNET!)** to complete the first part of your assignment.

How to use the tables:

Word-telescope

Step 1. Look up the 1st part of the word under the PREFIX LIST

- tele = at a distance

Step 2. Look for the rest of the word under the SUFFIX LIST

- scope= look or observe

Step 3. Put it together

- distance-look
- to look at something at a distance.

Note:

- The order of the words may not always seem right; don't worry about that.
- Sometimes you can only find one part of a word, however that can be a good clue about the meaning.
- You may have extra letters like o, a or i between 2 parts of a word; they don't mean anything.
- If you don't see a word in the suffix list, check the prefix list. Sometimes, words can be both a prefix and suffix.

PREFIX LIST = BEGINNINGS

PREFIX	MEANING	PREFIX	MEANING	PREFIX	MEANING
a-	without, lacking	e-/ef-/ex-	out, out of, from	oculo-	eye
ab-	away from	echin-	spiny	odont-	tooth
adipo-	fat	ect-	outsid	olf-	smell
alb-	white	en-	e in	omni-	all
amphi-/amp-	of both kinds	encephal-	brain	opthal-	eye
andr-	male	epi-	on, above	oss-/ost-	bone
angio-	vessel (blood)	extra-	outside, beyond	phag-	eat
ante-	before	gastro-	stomach	photo-	light
anthropo-	humans	gene-	origin, birth	plasm-	form
anti-	against	geo-	earth	pneumo-	lungs
aqua-	water	glottis-	mouth of windpipe	pre-	before
arbor-	tree	gymno-	uncovered	prot-/proto-	first
arthro-	jointed	hepato-	liver	pseudo-	fake, false
aster-	star	hetero-	different	retro-	backward, back
audi-	hear, sound	hiber-	winter	rota-	turn, wheel
auto-	self	homo-	same, alike	rupt-	break, burst
bi-	two, twice	hydro-	water	sub-	under, beneath
bio-	life, living	hyper-	over, above	super-/sur-	above, upon
bronch-	windpipe (lungs)	hypo-	below, under, less	tele-	at a distance
card-	heart	inter-	between	therm-	temperature
carn-	meat	intra-	within, during, inside	trans-	across, beyond
cell-	storeroom	ichthy-	fish	tri-	three
cephalo-	head	immunis-	free	trop-	turning
chlor-	green	leuc-	white	ventr-	belly
chrom-	color	lith-	stone	uni-	one
chron-	time	luna-	moon	zo-	animal
coel-	hollow	macro-	large		
com-/con-/co-	with, together	meta-	change		
contra-	against	micro-	small		
cran-	head	mono-	single		
cyt-	cell	multi-	many		
de-	from, away	morph	form		
deca-	ten	- neo-	new		
derm	skin	non-	not		
- den-	tooth	neur-	nerve		
di-	two, double				
dia-	through,				
dis-/dif-	across apart from, deprive				

SUFFIX LIST = ENDINGS

SUFFIX	MEANING
-able/ -ible	able to, capable of
-algia	pain
-ectomy	cut out
-graph	instrument for making records
-ism	act of, condition
-itis	inflammation (swelling) or disease
-meter	measure
-ology/ -logy	study of, science of
-phyll	leaf
-pod/ -ped	foot, feet
-scope	look, observe
-sect	cut
-sperm	seed

Name _____

Part One:

Prefixes/Suffixes **(Daily Grade)**

****Only turn in this page with your Scavenger Hunt.****

Using the Language of Science prefix and suffix tables, write the meaning of the following words:

EXAMPLE: cardiology- heart study or science (study of the heart)

1. phototropism- _____

2. arthropod- _____

3. echinoderm- _____

4. epiglottis- _____

5. multicellular- _____

6. hypodermic- _____

7. anthropology- _____

8. hypothermic- _____

9. gymnosperm- _____

10. pseudopod- _____

11. photograph- _____

12. autograph- _____

13. neuralgia- _____

14. decapod- _____

15. hepatitis- _____

16. cytology- _____

17. zoology- _____

18. microbiology- _____

19. geology- _____

20. biology- _____

Notice that several prefixes can mean the same thing:

21. What are the two prefixes that mean ONE or SINGLE? _____
22. What are two suffixes that mean CUT or CUT OUT? _____
23. What are two prefixes that mean ABOVE or ON? _____
24. What are the two prefixes that mean TWO? _____

Just knowing one part of the word gives you a clue to the whole word:

25. Would you want to be careful when touching an animal called an ECHIDNA? Yes or No (circle one)
26. What does a CARNivore eat? _____
27. Is a NEOnate a tiny baby or an old person? _____
28. Is a CRANIotomy a serious surgery? Yes or No (circle one)
29. An ALBino rabbit is what color? _____
30. Does an AMPHibian live on land or water? _____
31. If a medicine is CONTRAindicated for you, should you take it? _____
32. A DERMatologist works with what part of the body? _____
33. How does a tiny animal called a ROTifer travel through the water?
_____ (hint look up rota)
34. If you visited the Elysian Park ARBORetum, what would you expect to see?

35. In 1969, where did the LUNar mission land? _____
36. What is another name for a CHRONometer? _____
37. Why do they call this symbol (*) an ASTERisk? _____

Part Two Directions:

Biology Term Scavenger Hunt (**Test Grade**)

For this part of your summer assignment, you will be familiarizing yourself with science terms that we will be using at different points throughout the year. If you don't know what a word means you can look it up on the internet for this portion, but make sure you understand that there is more than one meaning for certain words. Make sure you are finding the meaning in biology terms!

On the next page is the list of terms. You should select and "collect" 30 words/terms.

"Collect", means you should find that item and either take a photograph (digital or paper printed) or make a sketch of that item (please number each sketch 1-30). You should create a unique way to present your "collection", along with corresponding explanations. Your presentation should show CONSIDERABLE effort, have drawings that are colored or a PowerPoint that isn't just a plain background. Some additional ideas are: PowerPoint, Microsoft Word, Google Slide, Prezi or by creating an actual photo album. **DO NOT USE A PHONE POWERPOINT APP!** Have another idea for presenting? Just email me!

You do not need to find the exact item on the list. For example, if it is an internal part to an organism, you must apply the term to the collected specimen, and explain how this specimen represents the term.

EXAMPLE: If you choose the term "phloem", you could submit a photograph you have taken of a plant leaf or a plant stem and then explain in your project what phloem is and specifically where phloem is found in your specimen.

ORIGINAL PHOTOS/SKETCHES ONLY:

You cannot use an image from any publication or the web. You must have taken the photograph (**can't use the same picture for multiple terms**) or made the sketch (**needs to be on white paper**) yourself. The best way to prove the photograph you took is yours is to place an item such as a stuffed animal, a button, toy car, action figurine, etc. in **all** of your photographs. You could even make a small sign of your name that will be in each photo/drawing.

NATURAL ITEMS ONLY:

Specimens may be used for only **one item/word (can't use the same picture for multiple terms)**, and all must be from something that you have found in nature. Take a walk around your yard, neighborhood, and town. **DON'T SPEND ANY MONEY!** Research what the term means, if you can't recall from previous science classes. You can also research in what organisms it can be found. Then, just go out and find one!

EXAMPLE:: If you are making a photo album and want to use a leaf to represent a autotroph simply tape the entire leaf on the paper.

1. Abiotic factor
2. Adaptation of a plant
3. Adaptation of an animal
4. Amniotic egg
5. Angiosperm
6. Animalia
7. Anther & filament of stamen
8. Antibiotic
9. Autotroph
10. Bacteria
11. Biotic factor
12. Carbohydrate
13. Carnivore
14. Commensalism
15. Community
16. Conifer leaf
17. Consumer
18. Deciduous leaf
19. Decomposer
20. Dermis
21. Detrivore
22. Dicot plant with flower & leaf
23. Ecosystem
24. Environment
25. Eukaryote
26. Exoskeleton
27. Flower ovary
28. Fungi/fungus
29. Glucose
30. Gymnosperm
31. Habitat
32. Herbivore
33. Heterotroph
34. Homeostasis
35. Hydrolysis
36. Insect
37. Keratin
38. Lipid
39. Monocot plant with flower & leaf
40. Multicellular organism
41. Mutualism
42. Niche
43. Offspring
44. Omnivore
45. Osmosis
46. Parasite
47. Parasitism
48. Phloem
49. Phototropism
50. Pine cone – female
51. Pine cone – male
52. Plantae
53. Pollinator
54. Population
55. Predation
56. Predator animal
57. Prey animal
58. Primary consumer
59. Producer
60. Prokaryote
61. Protein
62. Protista
63. Quaternary consumer
64. Scavenger
65. Secondary consumer
66. Shoot system
67. Species
68. Stem – herbaceous
69. Stem – woody
70. Stigma & style of carpel/
pistil
71. Tertiary consumer
72. Thigmotropism
73. Unicellular organism
74. Vaccine
75. Xylem



If either part is turned in early (1st-3rd day of school) you will receive 10 extra credit points. If turning in a digital copy, please email me at crystal.holsinger@daytonisd.net.

Turn this rubric in with your project.

Name _____

Summer Assignment Rubric

_____ (10) unique way to present project - shows considerable amount of effort – drawing are colored and put together neatly, PowerPoints are not just basic background.

_____ (30) all images have symbol present / hand drawings- were taken and not off the internet (drawings are number)

_____ (30) all images correspond to the term - no repeat pictures

_____ (30) explanation of term to the image is present in every term and is correct

Turned in early _____

Turned in on due date _____

_____ / 100

Turned in late _____

Final Grade: _____