

AP Biology Summer Assignment - 2017

Welcome! Congratulations on deciding to take on the challenge of an Advanced Placement Course.

The two main goals of AP Biology are to help you develop a conceptual framework for modern biology and to gain a deeper appreciation of science as a process (as opposed to an accumulation of facts). Because of the rapid pace of discovery in the life sciences our primary emphasis is on developing an understanding of unifying concepts that connect the major topics of biology.

Why a summer assignment??

AP Biology is a vigorous, yet manageable and rewarding class. In order to meet the demands of the curriculum it is necessary for you to complete some work before you come back in August. Your summer assignment will be based on pre-requisite information that you need a refresher on before coming back. Many of you may be well versed in these topics already so it shouldn't be too difficult.

Part 1: Check out a textbook BEFORE summer vacation!!

You will need to check out an AP Biology textbook before school lets out this year so you can complete your summer assignment. The AP Biology textbook is the 10th edition of Campbell Biology.

Part 2: Introduction Email

I would like to know a little about who you are and why you are taking AP Biology, so the second part of your summer assignment is to send me an email introducing yourself. Here is what I would like you to email me at sarah.westerfield@huttoisd.net **BEFORE** the beginning of the 2017-2018 school year:

Subject Line: AP Biology 2017-2018, Your Name

Body: Your full name (and nickname that you go by if you have one) and stuff about you.

- What science classes have you taken?
- Are you taking any other science classes next year?
- Was there anything that you liked or disliked about your earlier biology class?
- What are you looking forward to the most in AP Biology?
- What are you most anxious about in AP Biology?
- Why are you taking AP Biology? What do you hope to accomplish/gain?
- What do you like to do (hobbies, sports, music, interests, etc.)?

Remember to use proper email etiquette. I will reply so you have an electronic record that the first part of your assignment was received. I will be checking my email most of the summer so if you have any problems with the other parts of the assignment, please contact me through email as well. I am due to have a baby near the beginning of July so it may take me some time to get back to you, but I should reply by the beginning of August.

Part 3: Online Assignment for Chp. 1-3

- a. First you will need to create a Mastering Biology Account to complete the online assignments. Follow the instructions below for creating an account to gain access.
 1. Go to www.pearsonschool.com/access
 2. Enter the first 6 letters of the student access code: SSNAST
 3. Click on Covered Titles.
 4. Select Campbell Biology, 10th ed. from the Science Menu
 5. Click on Student Registration Link
 6. Accept terms.
 7. Create a Pearson account. I suggest using your email as your username.
 8. Type in the full access code: SSNAST-EMAIL-FINCH-BOTAN-WERSH-NJORD
 9. You have been provided a course ID: SWESTERFIELD37994

10. Once your account has been created, you will go directly to www.masteringbiology.com to log in.
- b. Once you have set up your account, read Chapters 1-3.
- c. Complete the assignment for each chapter on Mastering Biology.
- d. If you have trouble creating an account and accessing the online assignments, please email me right away. Do NOT procrastinate till the week before school starts.

Part 4: Biology Prefixes and Suffixes-The Language of Science

The main reason students find it difficult to understand science is because of all the hard to write, spell and read words. Actually, scientific vocabulary is a mix of small words that are linked together to have different meanings. If you learn the meanings of the little words, you'll find scientific vocabulary much easier to understand.

- Complete the attached "Biology Prefixes and Suffixes Worksheet" and bring it on the first day of school.
- Be prepared for a quiz over the prefixes and suffixes the 2nd day of school.

Part 5: Vocabulary Photography

For this assignment, you will "collect" 25 photographic examples of biological terms/concepts and create either a PowerPoint presentation or a scrapbook with them. Select any items from the Biological Collection List to include in your presentation or scrapbook. This will introduce you not only to the language of biology, but also emphasize that biology is something that's DONE not just memorized.

Directions for Vocabulary Photography:

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.
2. Create either a presentation slide or scrapbook page with the photo, definition, and explanation.
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 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 in your presentation or scrapbook.
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. You should NOT need to buy anything.
6. 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.
7. See the attached Biological Collection List and sample entries.
8. If you chose to do a PowerPoint presentation, email it to me before the first day of school. If you chose to do a scrapbook, bring it on the first day of school.

****This assignment will be due the FIRST DAY of school. Do not wait until then to complete the assignment or you will feel overwhelmed.**

I truly am looking forward to working with you next year!

Sincerely, *Mrs. Westerfield*

Sarah.westerfield@huttoisd.net

Classroom: 9-125

Grading Breakdown of Assignment

This assignment will be worth 2 test grades and 1 daily grade for the first six weeks. The table below shows how the assignment will be graded. If the assignment is not turned in on the first day of school a score of 0% will be assigned for the 2 test grades or the student may drop the course. No late assignments will be accepted.

<i>First Test Grade</i> → Online Assignment for Chapters 1-3 and Biology Prefixes and Suffixes		
Online Assignment Chapter 1		25 points
Online Assignment Chapter 2		25 points
Online Assignment Chapter 3		25 points
Biology Prefixes and Suffixes Assignment		25 points
Total		100 points
<i>Second Test Grade</i> → Vocabulary Photography		
25 words	4 points for each word	1 point for photo
		1 point for definition
		1 point for explanation
		1 point for neatness/grammar
Total	100 points	
<i>Daily Grade</i> → Prefixes and Suffixes Quiz on 2nd day of school		

Biology Prefixes and Suffixes-The Language of Science

Find the mean to the following Greek/Latin root words.

Word	Meaning
a / an	
meso	
leuco	
aero	
anti	
amphi	
aqua / hydro	
arthro	
auto	
bi / di	
bio	
cephal	
chloro	
chromo	
cide	
cyto	
derm	
haplo	
ecto (exo)	
endo	
epi	
gastro	
genesis	
herba	
hetero	
homo	
ov	
kary	
neuro	
soma	
saccharo	
primi / archea	
phyll	
hemo	

Word	Meaning
hyper	
hypo	
intra	
-itis	
lateral	
-logy	
-lysis	
-meter	
mono	
morph	
micro	
macro	
multi / poly	
pod	
-phobia	
-philia	
proto	
photo	
pseudo	
synthesis	
sub	
troph	
therm	
tri	
zoo, zoa	
-tropism	
-taxis	
-stasis	
zyg / zygos	
phago	
path / pathy	
sym / syn	

Once you have completed the above table, use it to develop a definition, in your own words, for each of the following terms.

1. Hydrology _____

2. Cytolysis _____

3. Protozoa _____

4. Epidermis _____

5. Spermatogenesis _____

6. exoskeleton _____

7. Abiotic _____

8. Pathogen _____

9. pseudopod _____

10. Hemophilia _____

11. Endocytosis _____

12. herbicide _____

13. Anaerobic _____

14. Bilateral _____

15. autotroph _____

16. Monosaccharide _____

17. Arthropod _____

18. polymorphic _____

19. Hypothermia _____

20. Biogenesis _____

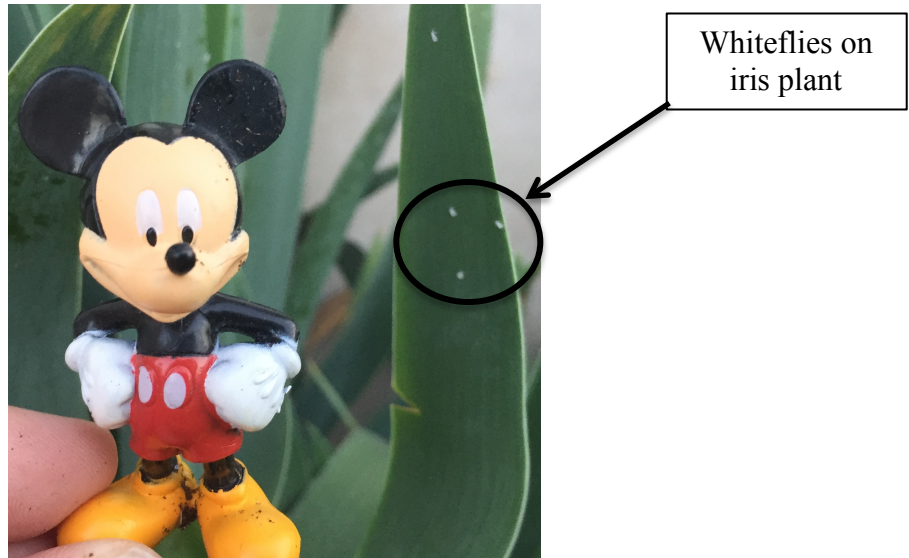
Biological Collection List

1. Abscisic acid
2. Adaptation of a plant
3. Adaptation of an animal
4. Amniotic egg
5. Analogous structures
6. Animal that has a segmented body
7. Anther and filament of stamen
8. Archaea
9. Asexual reproduction
10. ATP
11. Autotroph
12. Auxin producing area of a plant
13. Bacteria
14. Bilateral symmetry
15. C₃ Plant
16. C₄ Plant
17. Calvin Cycle
18. CAM Plant
19. Catalyst
20. Cellular respiration
21. Cellulose
22. Chitin
23. Codominance
24. Coevolution
25. Commensalism
26. Connective tissue
27. Convergent evolution
28. Cuticle layer of a plant
29. Detritovore
30. Diploid chromosome number
31. Dominant vs. recessive phenotype
32. Ectotherm
33. Endotherm
34. Enzyme
35. Epithelial tissue
36. Ethylene
37. Eukaryote
38. Exoskeleton
39. Fermentation
40. Flower ovary
41. Fossil
42. Gametophyte
43. Genetic variation in a population
44. Genetically modified organism
45. Gibberellins
46. Glycogen
47. Gravitropism
48. Gymnosperm
49. Haploid chromosome number
50. Heterotroph
51. Homeostasis
52. Homologous structure
53. Hydrophilic
54. Hydrophobic
55. Incomplete dominance
56. Invasive species
57. Keratin
58. Keystone species
59. Krebs Cycle
60. Lichen
61. Lignin
62. Lipid used for storage
63. Meristem
64. Modified leaf of a plant
65. Modified root of a plant
66. Modified stem of a plant
67. Mutualism
68. Mycelium
69. Mycorrhizae
70. Niche
71. Osmosis
72. Parasitism
73. Phloem
74. Phototropism
75. Pollen
76. Pollinator
77. Pollution
78. Polymer
79. Polyploidy
80. Polysaccharide
81. Population
82. Predation
83. Prokaryote
84. Radial symmetry
85. Redox reaction
86. Rhizome
87. Seed dispersal (animal, wind, water)
88. Sepal
89. Sex-linked trait
90. Spore
91. Sporophyte
92. Stigma and style of carpel
93. Succession
94. Symbiosis
95. Thigmotropism
96. Trophic level
97. Unicellular
98. Vestigial structures
99. Xylem

Examples for Vocabulary Photograph

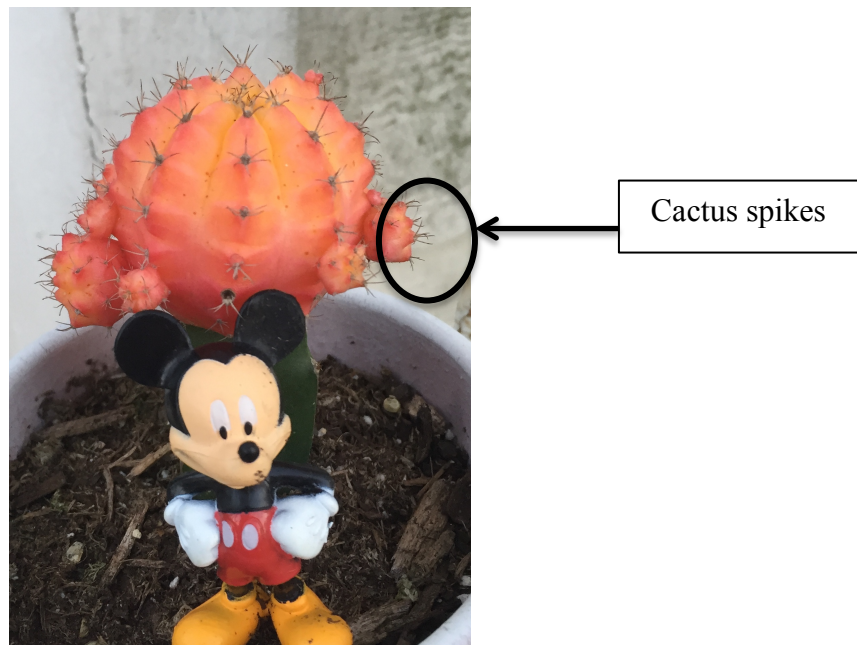
Notice the toy Mickey Mouse in the picture below. This is the individual's proof object that is used to demonstrate that the photographs are indeed their original photos. **Make sure you have your proof object in each of your photos.**

3. Parasitism



This is a picture of whiteflies on an iris plant. The whiteflies and the iris plant are an example of a parasitic relationship. In parasitism, one organism, the parasite, benefits at the expense of the other organism, the host. The whiteflies are benefiting by having a place to lay their eggs on the underside of the leaves and they also take nutrients from the leaves of the plants as their food source to the detriment of the plant. The whiteflies would be the parasites causing the damage and the iris plant would be the host that is harmed.

7. Modified Leaf



This is a picture of cactus spikes. Cactus spikes are an example of modified leaves on a plant. A modified leaf is one that has adapted to perform another function, other than photosynthesis and transpiration. A cactus spike's shape functions as a deterrent to keep herbivores from eating the leaves of the cactus.