

## Senior AP Biology 2020-2021 Summer Work

Greetings! Congratulations on your decision to take on the challenge of AP Biology. I am so looking forward to having you in class again!!! AP Biology is a college level course, with college level expectation for participation and effort. It is a course that unites what you know about biology, chemistry, physics, psychology and math ( including statistics ☺), to come to an understanding of the natural world. 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.

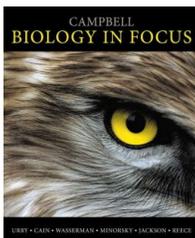
**Big Idea 2:** Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.

**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.

### To DO NOW:

- You must purchase the textbook ASAP



Campbell Biology in Focus / Edition 1 by Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson.

## AP Biology Summer Assignment - 50 pts

### BIOLOGY SCAVENGER HUNT - Due: First Full Day of School 2020

For your summer assignment, you will be familiarizing yourself with science terms that we will be using throughout the year. On the next page is the list of terms. Most of these terms will be new to you, so you will have to do some research.

How to submit assignment: E-mail me, share your presentation, or hand in to me the first full day of class.

1. Each item is worth 2 points. You must earn 50 points by the first day of class. Earn points by "collecting" (photographing) items from the list below. When I say "collect", I mean you should collect that item by finding it and taking a photograph (digital or paper printed) of the item. **Define**, in your own words, the biological term/concept. Also, within a couple of statements, **explain** how the picture represents the term or concept. The example on the last page gives you an example of what entries should include. You will need to use your photographs with appropriate explanations and descriptions to create a PowerPoint presentation, website, or poster that will be presented to the class.
2. **YOU CAN (AND SHOULD) BE CREATIVE:** If you choose an item that is internal to a plant or animal, like the term "xylem", you could submit a photograph of the whole organism or a close up of one part of the organism, and provide an explanation in your PowerPoint of what xylem is and where xylem is found in your specimen.
3. **ORIGINAL PHOTOS ONLY:** Do not use an image from any publication or the Web. You must have taken the photograph yourself. The best way to prove that is to place an item in all of your photographs that only you could have added each time, something that you might usually have on you like a pen or a toy giraffe or a key or your cell phone, etc.
4. **NATURAL ITEMS ONLY:** All items 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 and in what organisms it can be found... and then go out and find examples
5. **TEAM WORK:** You may work with other students, but each student must turn in his or her own work with a unique set of terms (in other words, **DO NOT** use the same exact terms as your team members). Working with other students means brainstorming, collaborating, discussing, going on collecting trips together. It doesn't mean using the same items! There are almost 100 choices, providing plenty of variety. **BIOLOGY SCAVENGER HUNT TERMS** Below are the items you are to "collect" (photograph). An individual organism can only be used once. **Humans are acceptable for one category only. You must take all photos yourself; no Internet photos!**

## INDIVIDUAL ITEMS

Each specimen is worth 2 points.

1. adaptation of an animal
2. adaptation of a plant
3. altruistic behavior
4. amniotic egg
5. analagous structures
6. animal that has a segmented body
7. anther & filament of stamen
8. archaebacteria
9. asexual reproduction
10. modified leaf of a plant
11. ATP
12. autotroph
13. auxin producing area of a plant
14. diffusion
15. Batesian mimicry
16. bilateral symmetry
17. biological magnification
18. C3 plant
19. C4 plant
20. CAM plant
21. Calvin cycle
22. cambium
23. cellular respiration
24. coevolution
25. commensalism
26. connective tissue
27. cuticle layer of a plant
28. detritovore
29. dominant vs. recessive phenotype
30. ectotherm
31. endosperm
32. endotherm
33. enzyme
34. epithelial tissue
35. ethylene
36. eubacteria
37. eukaryote
38. exoskeleton
39. fermentation
40. flower ovary
41. osmosis
42. gametophyte
43. genetic variation within a population
44. genetically modified organism
45. gibberellins
46. glycogen
47. gymnosperm cone – male or female
48. cell membrane
49. hermaphrodite
50. heterotroph
51. homeostasis
52. homologous structures
53. hydrophilic
54. hydrophobic
55. introduced species
56. keystone species
57. Krebs cycle
58. K-strategist
59. lichen
60. lipid used for energy storage
61. pigments
62. long-day plant
63. mating behavior (*be careful!*)
64. meristem
65. modified root of a plant
66. modified stem of a plant
67. Mullerian mimicry
68. mutualism
69. protein
70. phenotype
71. niche
72. parasitism
73. parenchyma cells
74. phloem
75. pollen
76. pollinator
77. population
78. predation
79. prokaryote
80. r-strategist
81. steroids
82. redox reaction
83. rhizome
84. seed dispersal (animal, wind, water)
85. spore
86. sporophyte
87. stigma & style of carpel
88. succession
89. taxis
90. territorial behavior
91. tropism
92. unicellular organism
93. vestigial structures
94. xylem

Example of Collection: ( The giraffe is proof that the photo is original and it appears in every photograph of specimens collected.)

#### 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.