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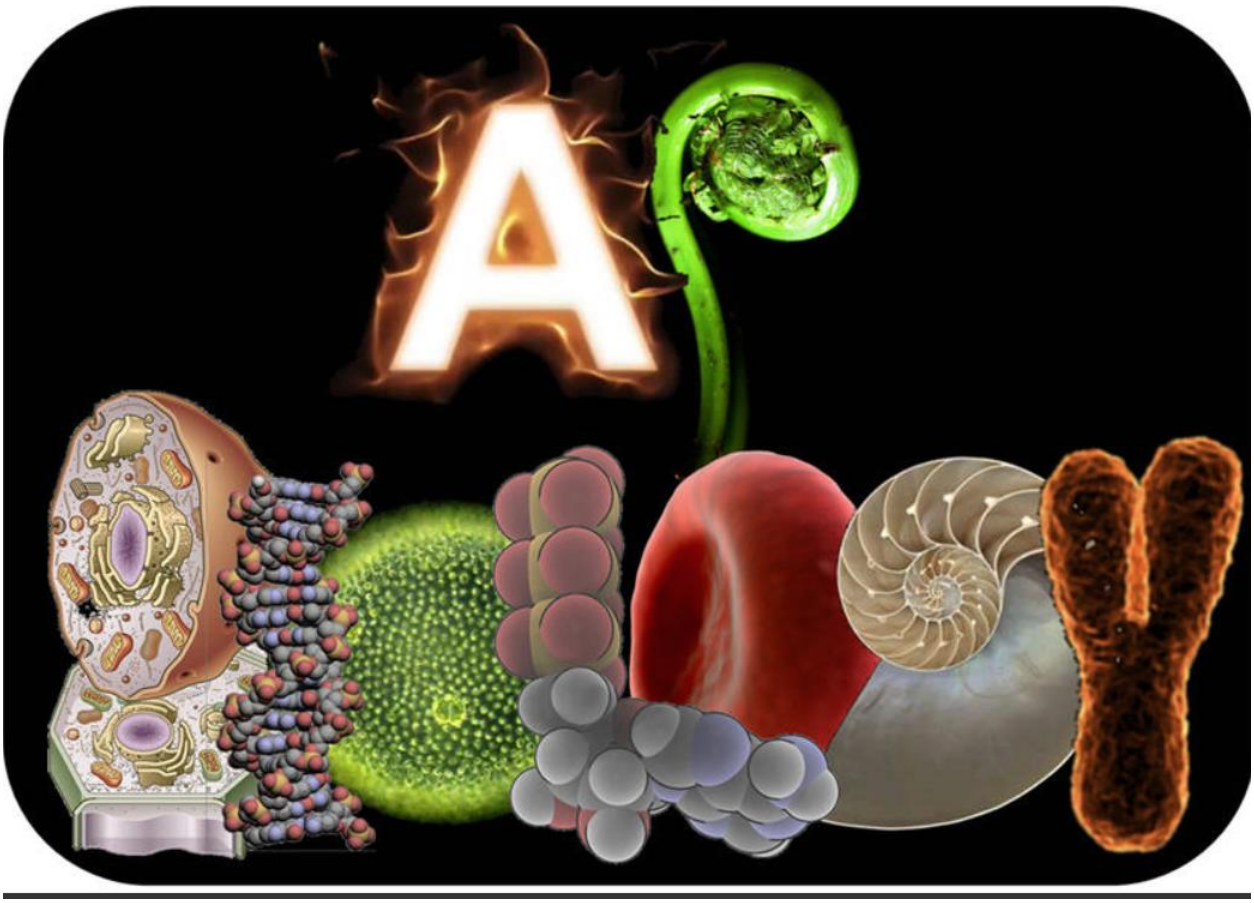
Lawrence High School's

AP Biology

2019 **Required** Summer Assignment



Welcome to AP Biology!

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 memorized facts). Because of the rapid pace of discovery in the life sciences, our primary emphasis is on developing an understanding of the unifying concepts that connect the major topics of biology. The AP Biology Curriculum centers around four Big Ideas. You will need to not only know these, but also understand how they all relate:

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.

A Google Classroom has been set up for this assignment. The instructor will use this platform to post announcements, and you can post questions to support your learning. The instructor will check the Google Classroom periodically throughout the summer. You can turn in your Biology Photo Journal through Google Classroom or you can make a hard copy (scrap book style) to turn in.

Google Classroom Group Code:

- *Go to www.classroom.google.com*
- *Click on I'm a Student*
- *Enter access code to access the class.*
- Code is: **4ao3bh1**

Assignment: No text book needed for this assignment

On the pages that follow, you'll find detailed instructions for this TWO part assignment that comprises your AP Biology summer work. V

1. Part 1 is related to becoming acquainted with the Science Practices that you'll be learning about this year in AP Biology which are embedded and applied through the content, labs and readings. You are required to watch selected videos and take notes.
2. Part 2 deals with collecting, through research and photography, examples of biological terms or concepts and creating a photo journal of your collection.
3. **Your video notes and Photo Journal will be due the first full week of school. The instructor will post the exact date(s) in Google Classroom over the summer or in early September.**
4. Both parts of this Summer Assignment will be combined as a test grade for 1st quarter.

Part 1 – Video Notes

Watch the videos listed below and take hand-written notes on each of them. The notes should be your original work. EACH note sheet will be scored from 0 to 5 based on completeness and thoroughness as shown in the rubric below. Note pages will not be accepted late nor will they be accepted if they are typed.

Video Links

1- Introduction to AP Biology https://www.youtube.com/watch?v=ibhnP5suqK8
2- The Scientific Method https://youtu.be/SMGRe824kak
3- CER (Claim- Evidence-Reasoning) https://youtu.be/5KKsLuRPsvU
4- AP Biology Science Practice 1 Model and Representations https://youtu.be/v5Nemz_cVew
5- AP Biology Science Practice 2 Using Mathematics Appropriately https://youtu.be/jgqYlSKoXak
6- AP Biology Science Practice 3 Formulate Questions https://youtu.be/2zB272Ak63A
7- AP Biology Science Practice 4 Data Collection Strategies https://youtu.be/AzTXnne40wU
8- AP Biology Science Practice 5 Analyze Data and Evaluate Evidence https://youtu.be/0JqukouOtZA
9- AP Biology Science Practice 6 Scientific Explanations and Theories https://youtu.be/3gK1xWNM7kk
10- AP Biology Science Practice 7 Connecting Knowledge https://youtu.be/7l4bcs49JP8

0 **No Credit**	**2** **Below expectations**	**3-4** **Complete**	**5** **Exceeds expectations**
No notes or copied from a peer or downloaded from an on-line resource	Only addresses 2-3 of the criteria	All criteria are met, but more detail could have been added for more complete notes. Or only one criterion is missing.	All criteria listed below are met or have been exceeded for each entry, and all criterion are addressed.

What does work that "exceeds expectations" have?

1. Each video's notes are on separate page - you can use the front and back of a page.
2. The video's title is written as it appears in the video on the top line of the paper.
3. The notes are legibly written.
4. Use of highlighting or different colors to emphasize key points, new vocabulary, and/or important concepts.
5. Examples from the video are documented in some way.
6. Drawn pictures, charts, or graphs are used to display details provided in the video.
7. A summary of the video content is provided at the end of the notes. Please emphasize the summary in some way (title it, star it, highlight it, etc. to identify it as the summary)
8. Notes are to be original work and are not to be copied from a peer – these serve as a log of what you have learned from the video. Copying them from a peer and not watching the video does you no good. You will receive zero credit if you are found submitting work that is too closely aligned with a classmate's work.

Note Taking Tips:

Taking good notes in class is an important part of a student's academic success in school, and in AP Biology.

Actively taking notes during class or when watching a video can help you focus and better understand main

concepts. Good note-taking will improve your active listening, comprehension of material, and retention. It will help you better remember what you hear and see. AP Biology is a course where maintaining focus, listening and understanding the material will support content retention for the AP Exam.

You might want to re-watch the videos to further your understanding and/or to enhance your notes to increase your understanding and retention of the material. The videos address foundation concepts that will continuously be addressed throughout the course. Good notes can provide a great resource for creating outlines and studying.

How to determine the main points in a video or lecture:

- Introductory remarks or slides often include summaries of overviews of main points.
- Listen for signal words/phrases like, "There are four main…" or "To sum up…" or "A major reason why…"
- Repeated words or concepts are often important.
- Non-verbal cues like explanations of diagrams and charts, and voice inflections indicate important points.
- Final remarks often provide a summary of the important points of the lecture.

Part 2 – Photo Journal

Assignment:

Below is a list of essential vocabulary terms that will be addressed throughout the course. You will choose 25 terms for this part of the assignment. For each chosen term, you will need to find and photograph an item/object that demonstrates or defines the term. Images can be digital or paper printed. You do not need to find the exact item/term on the list, the image is a representation for the item/term. For example if the term is of an internal part of the organism, you must apply the term to the specimen you find 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 stem and then explain what phloem is and specifically where phloem is in your specimen. Be creative!

Term	Image or Evidence	Explanation or Claim
Phloem		This image represents the term since phloem is ….. Photo is from a trip to Longwood Gardens

For each photo you must:

1. Define the term selected
2. Explain how your photo represents that term.

Format:

1. Create a template that allows you to present responses for both of the above prompts.
2. You can submit your work through Google Classroom **or** make a hard copy, scrap book style project that you create yourself.
3. You can choose to be as creative as you would like, but there is no need to go crazy and spend money.

*PHOTO REQUIREMENTS:

- You cannot repeat photos
- Please use your good judgement when choosing items/objects/images to submit.
- Be creative and have fun with this part of the assignment
- Each picture must be clear and an obvious representation of the term.

Digital/On-Line Portfolio:

- If you choose to do an on-line portfolio, you cannot use an image from any publication or the Web. The photograph must be original. You can create your own template to present the information. (You can share your template layout with others).

Hard Copy/Scrapbook Portfolio:

- If you choose to create a paper, hard copy (scrap book style) photo journal, you can use FIVE but only five images from magazines and local newspapers. You cannot use an image from the Web if you choose hard copy portfolio.

* NATURAL ITEMS:

All items must be from something that you found in nature. Take a walk around your yard, neighborhood and town. YOU DON'T HAVE TO SPEND ANY MONEY! Research what the term means and in what organisms or items that can be found and represent the term …and then go out and find them!

* TEAM WORK:

You may work with other students in the class to complete this project, but each student must turn in his or her own project with a unique set of terms chosen. There are 110 choices….probability says there is a very small chance that any two students will have most of the same 25 terms chosen.

Terms:

1. adaptation of an animal
2. adaptation of a plant
3. abscisic acid
4. agonistic behavior
5. altruistic behavior
6. amylase
7. analogous structures
8. angiosperm
9. annelid
10. anther & filament
11. aquatic biome
12. arthropod
13. ATP
14. autotroph
15. auxin producing area of a plant
16. Batesian mimicry
17. bilateral symmetry
18. biological magnification
19. C3 plant
20. C4 plant
21. Calvin cycle
22. carbohydrate
23. cellulose
24. cellular respiration
25. chitin
26. cnidarian
27. coelomate
28. commensalisms
29. community
30. coevolution
31. deciduous leaf
32. decomposer
33. detritivore
34. dicot plant with flower & leaf
35. diploid chromosome number
36. dominant vs recessive phenotype
37. echinoderm
38. ecosystem
39. ectotherm
40. endosperm
41. eutrophication
42. endotherm
43. enzyme
44. epithelial tissue
45. ethylene
46. eukaryote
47. exoskeleton
48. fermentation
49. flower ovary
50. frond
51. fruit –dry with seed
52. fruit – fleshy with seed

53. gametophyte
54. gastropod
55. genetically modified organism
56. genetic variation within population
57. gibberellins
58. glycogen
59. gravitropism
60. gymnosperm cone
61. hermaphrodite
62. homeostasis
63. homologous structures
64. hydrophilic
65. hydrophobic
66. introduced species
67. invasive species
68. K-strategist
69. keratin
70. keystone species
71. kinesis
72. leaf-gymnosperm
73. lichen
74. lipid
75. littoral zone organism
76. long-day plant
77. meristem
78. modified leaf of a plant
79. monocot plant w/flower & leaf
80. mutualism
81. mycelium
82. mycorrhizae
83. myosin
84. nematode
85. niche
86. parasite
87. phloem
88. platyhelmininthes
89. pollen
90. pollinator
91. population
92. porifera
93. primary producer
94. primary consumer
95. prokaryote
96. chemoreceptor
97. protein
98. r-strategist
99. radial symmetry
100. rhizome
101. animal w/ 2 chambered heart
102. secondary consumer
103. spore
104. sporophyte
105. stigma & style
106. taxis
107. tendril of a plant
108. thigmotropism
109. thorn of a plant
110. xylem

*****THE ABOVE TERMS ARE THE TERMS YOU CAN CHOOSE FROM FOR YOUR PHOTO JOURNAL*****