

AP Biology Summer 2020-2021

Ms. Wittke

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Welcome to AP Biology! Please read the following pages carefully and submit the assignments adhering to the deadlines listed. Please feel free to contact me with any questions.

AP Biology Background

AP Biology is a college-level biology course. The benefits of taking this class include the following: exposure to rich and rigorous science curriculum, a quality point added to your GPA, the possibility of earning college credit for taking and passing the AP Exam. Some colleges offer between 1-3 semesters of college biology credit for making a 3 or higher on the exam. For information regarding a specific college, check that school's admissions page.

Throughout the course of AP Biology, the content is varied and comprehensive. The students will investigate topics in the areas of Biochemistry, Cells, Cell Signaling, Cell Energetics, Genetics, Aspects of the Human Nervous, Immune, and Endocrine Systems, Evolution, Ecology, DNA Processes, and Biotechnology. The class format involves lecture, reading, labs, case studies, and research.

Required Skills

In order to succeed, students have to be self-motivated and willing to utilize problem solving skills. Students will be expected to keep up with the unit calendar and deadlines with very little prompting.

In this class, writing is an essential skill. Free Response Questions will be found on every quiz or test. Lab reports and case studies can range from 1-2 pages to 8-10 pages.

Vocabulary is also an essential skill. Biology can be like a second language. If vocabulary does not come naturally, students should commit to identifying and learning key terms for each concept topic.

For additional general course information, make good use of the College Board website.

<https://apstudents.collegeboard.org/courses/ap-biology>

Summer Tasks 2020-2021

1. Email and Communication DUE WEDNESDAY JULY 15

By July 15, please send an email to wittkfa@boe.richmond.k12.ga.us. It would be convenient, but not required, if everyone used their school email address for communications.

In the subject line, put **your name—AP Biology**. (Ex. Rachel Carson—AP Biology)

In the body of the email, answer the following questions. You do not have to repeat the questions. You do not necessarily have to answer in complete sentences.

1. Your name—first and last. Also include the name you prefer to be called.
2. In what grade will you be during the 2020-2021 academic year?
3. AP classes you have previously taken and your final grade for those courses.
4. Have you taken Anatomy & Physiology or will you be taking that course this year?
5. List of AP classes you will be taking during the 2020-2021 academic year.
6. List your fine arts area(s)
7. All-time favorite DFA show
8. All-time favorite hobby or activity
9. Favorite candy or snack
10. Summarize your family in one sentence
12. Explain in a sentence or two why you have chosen to take AP Biology.
13. Do you have any concerns or curiosities about taking AP Biology?
14. What are your plans after graduation?

Also, sign up for the Remind account. I can't say that we will use this all year, but we will probably start the year using it.

A

If you have a smartphone, get push notifications.

On your iPhone or Android phone, open your web browser and go to the following link:

rmd.at/dfaapb

Follow the instructions to sign up for Remind. You'll be prompted to download the mobile app.

B

If you don't have a smartphone, get text notifications.

Text the message [@dfaapb](https://www.remind101.com/) to the number 81010.

If you're having trouble with 81010, try texting [@dfaapb](https://www.remind101.com/) to (706) 621-4065.

** Standard text message rates apply.*

2. Basic Chemistry Review on Edgenuity DUE MONDAY 8/3/2020

By the end of May, I will have everyone on my roster signed up for the Modules I have assigned in Edgenuity. The purpose of these modules is to review and make sure we're all familiar with some basic chemistry before we start the year for AP Biology. (Yes, there is a lot of chemistry in biology.) The modules are set up so that you can take a pretest before each module. If you score 85 or higher on the pretest you can skip the lessons for that module. Please let me know as soon as possible if you have any trouble getting into the modules.

3. Biology Terms Scavenger Hunt Project

DUE FRIDAY 8/7/2020

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. This may be turned in emailing or sharing the document or bringing in a physical copy on the due date.

- **Select and “collect” 40 words/terms**

Collect items by finding and taking a **photograph** (digital or paper printed) or making a **sketch** of that item. You should create a unique way to present your “collection”, along with corresponding explanations. You can do this in a number of different ways: PowerPoint, Microsoft Word, and Prezi or by creating an actual photo album. Have another idea for presenting? Just email me!

- **You do not need to find the exact item on the list, say for example, if it is an internal part to an organism, but you must apply the term to the specimen you find and explain in your finished project 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 in your specimen.

- **ORIGINAL PHOTOS/SKETCHES ONLY:**

You **may not use an image from any publication or the Web**. You must have taken the photograph (or made the sketch) yourself. The best way to prove that is to place an item (stuffed animal, a button, toy car, etc.) in all of your photographs that only you could have added each time. You could 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, 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 and in what organisms it can be found... and then go out and find one. If it safe to do so, go to the grocery store. That may not be nature, but the items in the produce section came from nature.

- **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. No photographs may be duplicated among students.

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| 1. adaptation of an animal | 24. chitin | 49. fruit – dry with seed |
| 2. adaptation of a plant | 25. chlorophyta | 50. fruit – fleshy with seed |
| 3. abscisic acid | 26. cnidarian | 51. gametophyte |
| 4. actin | 27. coelomate | 52. gastropod |
| 5. amniotic egg | 28. conifer leaf | 53. genetically modified organism |
| 6. amylase | 29. commensalism | 54. gibberellins |
| 7. angiosperm | 30. connective tissue | 55. glycogen |
| 8. animal that has a segmented body | 31. cuticle layer of a plant | 56. gymnosperm cone |
| 9. annelid | 32. deciduous leaf | 57. haploid chromosome number |
| 10. anther & filament of stamen | 33. deuterostome | 58. heartwood |
| 11. arthropod | 34. dicot plant with flower & leaf | 59. hermaphrodite |
| 12. archaebacteria | 35. diploid chromosome number | 60. insect |
| 13. autotroph | 36. echinoderm | 61. K-strategist |
| 14. auxin producing area of a plant | 37. ectotherm | 62. keratin |
| 15. basidiomycete | 38. endosperm | 63. leaf – gymnosperm |
| 16. Batesian mimicry | 39. endotherm | 64. lepidoptera |
| 17. biological magnification | 40. enzyme | 65. lichen |
| 18. bryophyte | 41. epithelial tissue | 66. lignin |
| 19. C 4 plant | 42. ethylene | 67. lipid used for energy storage |
| 20. Calvin cycle | 43. eubacteria | 68. littoral zone organism |
| 21. carbohydrate -fibrous | 44. eukaryote | 69. long-day plant |
| 22. cambium | 45. exoskeleton | 70. meristem |
| 23. cellulose | 46. fermentation | 71. modified leaf of a plant |
| | 47. flower ovary | 72. modified root of a plant |
| | 48. frond | 73. modified stem of a plant |

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| 74. monocot plant with flower & leaf | 86. pine cone – female | 99. scale from animal with two-chambered heart |
| 75. muscle fiber – striated | 87. platyhelminthes | 100. spore |
| 76. mutualism | 88. pollen | 101. sporophyte |
| 77. mycelium | 89. pollinator | 102. stem – herbaceous |
| 78. mycorrhizae | 90. porifera | 103. stem – woody |
| 79. myosin | 91. prokaryote | 104. stigma & style of carpel |
| 80. nematode | 92. protein – fibrous | 105. tendril of a plant |
| 81. niche | 93. protein – globular | 106. thorn of a plant |
| 82. nymph stage of an insect | 94. protostome | 107. unicellular organism |
| 83. parasite | 95. pteridophyte | 108. vascular plant tissue |
| 84. parenchyma cells | 96. r-strategist | 109. xerophyte |
| 85. phloem | 97. radial symmetry | 110. xylem |
| | 98. rhizome | |

4. Graphing and Data Analysis Packets

DUE FRIDAY 8/7/2020

On the webpage, there will be two packets. One is a reference packet about various different kinds of graphs. The other is a practice packet of graphing, analysis, and questions. You may complete the work in whatever format is convenient for you: printed sheets and handwritten, handwritten on notebook paper and graph paper, typed, or using digital graphs (from Excel or another software program).