



## *AP Biology Summer Assignment 2018-2019*

Dear AP Biology Students,

Welcome to AP Biology and thank you for embarking on this challenging and rewarding road with me! I am excited about working with you as you continue to broaden your scientific knowledge. You have chosen to begin an adventure that is both fascinating and rewarding. You are studying biology at a time of many scientific advances; perhaps more knowledge is being realized today in biology than in any other area of science. As you are all aware, Advanced Placement courses are quite rigorous and AP Biology is no exception. We will be completing a course that is equivalent to two semester college courses in addition to a lab course. At times, I will ask you to stretch yourself and the task at hand will seem overwhelming. However, be assured that I will not ask any more of you than I am also willing to give. Don't worry while the course is challenging, it is also rewarding!

Your summer assignment begins by:

1. Sending me an email at [smithm9@fultonschools.org](mailto:smithm9@fultonschools.org). In the subject of your email place AP BIO, your last name and your first name. In the body of the email place.

**Parents' name-**

**Parents' cell number-**

**Parents' email-**

Do this ASAP

2. Check out the class website- The summer assignment will be located there along with all links.

Class website- <http://mrmsmith.weebly.com/>

3. Please go ahead and purchase the AP Biology Review book ("5 Steps to a 5" in AP Biology, 2016 edition)- Cost \$15

**SUMMER ASSIGNMENT #1- Project Grade (20% of overall grade)**

**AP BIOLOGY SUMMER ASSIGNMENT SCAVENGER HUNT**

FIND AND TAKE A "SELFIE" WITH EACH ITEM. EACH OBJECT CAN ONLY COUNT FOR ONE ITEM ON THE LIST. CREATE A PPT OR PREZI WITH THE IMAGES AND DESCRIPTIONS. YOU NEED TO BE IN THE SHOT! NO TAKING IMAGES OFF THE INTERNET! YOU CAN MEET EACH OTHER OVER THE SUMMER TO COMPLETE THE ASSIGNMENT. The assignment is due on the first day of school NO EXCEPTIONS!!!!  
Please DO NOT EMAIL DIRECTLY TO ME.

1. Commensalism	17. A simple food chain	27. A primary consumer
2. An arachnid	18. Batesian mimicry	32. A bird
3. A non-flying insect	19. Mullerian mimicry	33. Growth rings in a tree trunk
4. Mutualism	20. A wind-dispersed seed	34. An amphibian

5. An annelid	21. An animal dispersed seed	35. Something made of keratin
6. Evidence of decomposition	22. Biotic factor	36. Something made of chitin
7. A population	23. An example of cryptic coloration	37. Something made of cellulose
8. A community	24. Parasitism	38. An example of thigmotropism
10. Evidence of cellular respiration	25. An abiotic factor	39. A sporophyte
11. An ecosystem	26. An autotroph	40. An arthropod
12. A fungus	27. A primary consumer	41. Secondary succession
13. Moss	28. A primary succession	42. A reptile
14. A monocot leaf	29. A fruit	43. An endotherm
15. A dicot leaf	30. A flower	43. Phototropism
16. An animal track	31. A gymnosperm	44. lichen 45. Spending time with friends and family

**Assignment 2: Biology & Chemistry Review (Pre Test- Quiz grade)**

A solid comprehension of introductory biology and chemistry are essential for further study and experimentation in the life sciences. You will be expected to understand and apply the following concepts. Please take some time to review your notes/texts and other resources from previous classes and seek help at the start of school, if you are having difficulties. Bring in your notes and any questions on the first day of class. You do not need to turn anything in for this assignment.

Your diagnostic test applying these basics will be assessed on your third class meeting.

(This will help me gauge your preliminary understanding of the concepts.)

Use these resources and other resources to assist you in reviewing and understanding terms and concepts:

1. Bozeman Science Biology Playlist

[https://www.youtube.com/watch?v=ibhnP5suqK8&index=2&list=PL7A750281106CD067&/](https://www.youtube.com/watch?v=ibhnP5suqK8&index=2&list=PL7A750281106CD067&list=PL7A750281106CD067)

2. Chemistry Playlist

<https://www.youtube.com/watch?v=jEoQ6TNLJI8&list=PL43285691048DAD00>

3. Chemio app

Diagnostic Exam Concepts/ Content- It would be a great idea to create flashcards for the following terms or area of information below:

1. Scientific method
2. Experimental design and hypothesis testing
3. Properties of water
4. Monomers and polymers

5. Dehydration synthesis and hydrolysis
6. Organic macromolecules (carbohydrates, proteins, lipids, nucleic acids)
7. Cell Theory
8. Endosymbiont/Endosymbiotic Theory
9. Fluid-mosaic model and phospholipid bilayer
10. Membrane transport
11. Cells; structures and functions of cellular components/organelles
12. Cellular respiration (glycolysis, oxidation of pyruvate, Krebs cycle, electron transport chain; lactate & ethanol fermentation)
13. Photosynthesis (light-dependent and light-independent reactions)
14. Cell cycle (interphase, mitosis/meiosis)
15. Semi-conservative replication
16. Basic genetics (Mendel's principles of segregation and independent assortment)
17. Central Dogma of Molecular Biology
18. Laws of Thermodynamics
19.  $PV = nRT$
20. Periodic Table of Elements
21. **CHNOPS**: Carbon, Hydrogen, Nitrogen, Oxygen, Phosphorus, Sulfur (major elements in living matter)
22. Matter (mass & volume)
23. Subatomic elements (electrons, protons, neutrons)
24. Radioactive isotopes
25. ENERGY (including potential and kinetic energy, free energy, ATP, light energy, heat energy, etc.)
26. Energy levels & electron orbitals (valence, valence electrons)
27. Bonding: covalent bonding; ionic bonding; Van der Waals interactions, etc.
28. Redox reactions

- 29. Stoichiometry
- 30. Molarity
- 31. pH (hydrogen ions, hydroxide ions): acids, bases, buffers
- 32. Enzymes and other catalysts
- 33. Evolution
- 34. Theories of Natural selection
- 35. Nervous system, Immune System, Cardiovascular system

Please email me if you are having difficulties. [Smithm9@fultonschools.org](mailto:Smithm9@fultonschools.org)

**Final Note**

Don't be intimidated, if you want to succeed you will. Don't get me wrong, it will take some work, but I will provide you with all of the tools necessary to be successful. However, I can't do the work for you! That being said- Don't Procrastinate on your summer assignments, schedule some time just for AP Bio, but the rest of the summer relax, unwind and get ready for a great 2018-2019 school year! If you have any questions please email [smithm9.fultonschools.org](mailto:smithm9.fultonschools.org)

Enjoy your summer and I'll see you in August!

Mr. Smith