

AP Biology Summer Assignment Erwin High School- Mrs. Banks

Welcome to AP Biology. The purpose of this summer assignment is to prepare you for the excitement and rigors of AP Biology. I would like you to be cognizant of the prerequisite skills necessary to succeed in this course. Let us begin by emphasizing that the prerequisites for AP Biology are Biology (preferably Honors Biology) and Honors Chemistry.

That having been said, AP Biology is a demanding and intense discipline that utilizes a college-level text book and inquiry-based lab assignments. AP Biology is a lab-based course and students will be expected to participate in and complete College Board approved laboratory assignments. Additionally, you are expected to read each assigned chapter, complete and master the required homework and projects, and thoroughly digest any lab activity provided with the topics.

While AP Biology can be fun, the "advanced placement level", requires a large commitment, on your part, both in time and energy. **This IS NOT HONORS BIOLOGY WITH A COLOR CODED INTERACTIVE NOTEBOOK!** It is expected that you will demonstrate the work ethics that exemplify a student in an "advanced placement level" course.

Before we begin, let's discuss a major goal of this course. Ultimately, the primary goal of this course is to prepare you for college level biology courses and to prepare students for the College Board's AP Biology Exam on Monday, May 14, 2021.

If we look at the bigger picture, we might ask ourselves why students benefit from the AP Biology course.

- AP Biology utilizes the same textbook as many Biology 101 courses.
- Biology connects to other disciplines such as chemistry, physics, anatomy, history, etc
- Students are familiarized with technology and equipment used in college laboratories.
- Lab experiments and activities hone thinking and problem-solving skills.
- Colleges recognize the rigor represented by taking AP Biology.
- College majors related to science: Biology, Biochemistry, Pre-Med, and Nursing.
- There is a strong job market for people with science skills.

After completing the required activities, I hope you have a better idea of what AP Biology is and what you are signing up for. Please do not hesitate to contact me if you have any questions.

I look forward to working with you in August.

Mrs. Victoria Banks

AP Biology Teacher

Victoria.banks@bcsemail.org

Mandatory Assignment #1: Introduction Letter

I would like to know a little about who you are, so your first assignment is to send me an email. I will reply so that you have an electronic record that your assignment was received. Please send your emails to the following email address: victoria.banks@bcsemail.org. I need to receive this document before the end of the summer. **FOLLOW THESE INSTRUCTIONS SPECIFICALLY, THIS IS A GOOD INDICATOR OF HOW YOU WILL FOLLOW LAB INSTRUCTIONS.** Please answer the following questions in your email using **complete sentences so that I know what you are talking about.**

For example:

1. My last science teacher was Mr. Rockoff for Honors Chemistry.

Subject Line: AP Biology 2020-2021

1. Who was your last science teacher? What class?
2. What other science classes have you taken? Are you currently enrolled in another science class besides AP Biology?
3. What do you like to do (hobbies, sports, music, interests, etc)?
4. Do you have a job or plan on getting one this school year?
5. What causes you to struggle in a course?
6. What is the most effective way for you to prepare for a test?
7. How many AP classes have you taken thus far? How many exams have you passed with a 3 or higher?
8. Have you had Chemistry and made at least a B?
9. Did you make a B or better in Honors Biology or an A in Standard Biology? Please specify which option.
10. How many AP classes are you taking this year? Please list.
11. Have you taken AP Environmental?
12. Have you or will you be taking Anatomy and Physiology?
13. What are you looking forward to the most in AP Biology?
14. What are you most anxious about in AP Biology?
15. Why are you taking AP Biology? What do you hope to accomplish/gain?

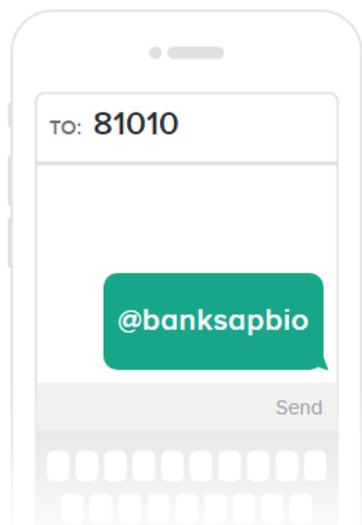
Don't worry! There is no right or wrong answer...please be honest so that I can figure out the best way to help you next year! A word of advice, please remember to use proper salutations, closing, phrasing, etc.

A WORD OF WARNING...If you have not taken Chemistry, you CANNOT take AP Biology. Chemistry is a prerequisite for AP Biology. Also, if you took standard Biology and did not make an A, this will not be a successful class

for you. If you took Honors Biology and made below a B, this will not be a successful class for you.

Mandatory Assignment #2: Sign up for Remind

1. Join our Remind text class. When I need to send out reminders, I use Remind. Please follow the instructions below to sign up. Text **@banksapbio** to **81010**.



Mandatory Assignment #3: Get Your Supplies for AP Biology Class

Get yourself ready for class! Below is the list of supplies that you will need for this class.

1. **Two, at least** 2 inch binders, any color with a clear cover for title page. You will use one for first semester and one for second semester.
2. Blue or Black pens and pencils. I do not accept turned in work in any colors other than blue, black, or pencil.
3. A pack of highlighters.
4. Colored pencils or markers that **DO NOT** bleed through papers.
5. You will find it useful to have Post-It notes of different sizes and colors for taking notes in your textbook.
6. Pack of dividers for your binder.
7. Index cards, white cards or different colors would be useful.
8. One bottle of Clorox wipes which will be used for messy labs and *E. coli* lab sanitation.

Mandatory Assignment #4: Sign up for Google Classroom

We will be using Google Classroom as our learning management system. Google Classroom has most lesson materials, an up to date calendar, and helpful links for studying. Please follow the instructions below to sign up. You will also use google classroom to turn in much of your work.

Use this ACCESS CODE: 4rdlvud

Mandatory Assignment #4: Video Notes

On the following pages, you will find detailed instructions of the two assignments that comprise your summer work for AP Biology. The first assignment is related to becoming acquainted with Science Practices that you will be learning about this year in AP Biology. The second part deals with collecting, through photography, examples of biological terms or concepts and creating a photo blog of your collection.

Your video notes are due on the first day of class in AP Biology and your photo blog will be due on the second day. Both will be averaged together and counted as a test grade for first quarter. No late summer assignments will be accepted!

Included in this packet are the following documents:

Document	Page
Assignment #4- Video Notes	
• Instructions and content video list	4 & 5
Assignment #5- Biological Collection Photo Blog	
• Instructions and grade rubric	6 & 7
• Biological Collection list	8
• Photo blog table of contents (submit this completed form the 2 nd day of class)	10 & 11
• Example entries for photo blog	9

Video Notes- due 1st day of AP Biology

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 0-5 based on completeness and thoroughness as shown in the rubric below. Note pages will not be accepted late nor will they be accepted typed.

#	Video Content	Links
1	The nature of science	https://tinyurl.com/y737zfhx
2	AP Biology Science Practice 1	https://tinyurl.com/y7z4k42c
3	AP Biology Science Practice 2	https://tinyurl.com/yaxkdv8h
4	AP Biology Science Practice 3	https://tinyurl.com/y9ulcqw
5	AP Biology Science Practice 4	https://tinyurl.com/ydfw8y6o
6	AP Biology Science Practice 5	https://tinyurl.com/y8h4772m
7	AP Biology Science Practice 6	https://tinyurl.com/y9a2wshy
8	AP Biology Science Practice 7	https://tinyurl.com/ya8sl5rw

Grading Rubric:

0	2	3-4	5
No credit	Below Expectations	Complete	Exceeds Expectations
No notes OR copied from a peer.	Several criteria are missing from entry.	All criteria are met, but there is room for improvement within criteria OR one criterion is missing from entry.	All criteria listed below are met or have been exceeded for each entry.

What does work that "exceeds expectations" have?

- ✓ Each video's notes are on a different page.
- ✓ The video's title is written as it appears in the video on the top line of the paper.
- ✓ The notes are legibly written.
- ✓ Highlighting or colors are used to emphasize key points, new vocabulary, and/or important concepts.
- ✓ Examples are documented in some way when given in the video.
- ✓ 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)

Notes are to be original artwork 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.

Mandatory Assignment #5: Biological Collection Photo Blog-due 2nd day of AP Biology

For this assignment, you will "collect" 25 photographic examples of biological terms/concepts and post them on a photo blog. Select any of the items from the Biological Collection List to include in your blog. This will introduce you not only to the language of biology, but also emphasize that biology is something that is DONE, not just memorized. A hardcopy of your Photo Blog Table of Contents AND a link to your photo blog is due the second day of class. The link should be written on the table of contents AND emailed to me. Please see me if access to the needed technology is an issue.

Directions for the Biological Collection Photo Blog:

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. Use the Biological Collection list on page 9 to select terms/concepts for your blog. Page 10 will give you examples of what entries should include.
2. Upload the photo, definition, and explanation to a "blog" that you create for the class. You can choose to complete your picture collection on a google doc, google slide show, etc. If you have other ideas, feel free to reach out to me at Victoria.banks@bcsemail.org.
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 on the blog 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 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 when you hand in your summer work. This same item must appear in every picture!
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.
6. This is an individual project. While brainstorming, discussing, and even going on collecting adventures together is welcome, your items and photos are to be unique. With over 90 concept choices, probability says there is a very slim chance that any two students will have the same items chosen from their list.
7. Be careful and respectful! Never touch plants or animals that you are unfamiliar with. Don't kill or harm any organisms. Do not remove any organisms from the natural environment.

Rubric for Biological Collection Photo Blog			
Points	Biological Collection Photo Blog Entry (per photo)	Points	Table of Contents*
1	Original photo posted to blog	3	"Blog" shared with teacher via email
1	Biological term/concept identified	2	Picture of you with your proof object submitted
1	Biological term/concept defined in own words	10	Each biological term/concept listed in the order it appears on blog
2	Biological term/concept and photo relationship explained fully	10	Blog is easy to follow and neatly presented
*Points in this section are awarded in an all or none format. If the guideline is not <u>fully</u> met, no points will be awarded!			

Your photo blog is worth a maximum of 150 points (125 points for your photo blog (5 pts for each photo blog entry) and 25 points for a completed Blog Table of Contents.

Task #	Due Date	Task Description	Objective	Check off when complete
1	Before 1 st day of class	Letter of Introduction sent to victoria.banks@bcsemail.org	So I can begin to get to know you as a student.	
2	Before 1 st day of class	Sign up for Remind	So that I can send reminders.	
3	Before 1 st day of class	Get your supplies for AP Biology.	Assemble supplies so that we can get started right away.	
4	Before 1 st day of class	Sign up for Google Classroom.	Digital Learning!	
5	Due first day of class	Video Notes	To refresh your lab and math skills. To work on note taking strategies.	
7	Due 2 nd day of class	Biological Collection Photo Blog	To get you out in the natural world observing actual biology!	

Biological Collection List

1. Adaptation of an animal
2. Adaptation of a plant
3. Altruistic behavior
4. Amniotic egg
5. Analogous structures
6. Animal that has a segmented body
7. Anther and filament of stamen
8. Archaeobacteria
9. Asexual reproduction
10. ATP
11. Auxin producing area of a plant
12. Basidiomycete
13. Batesian mimicry
14. Bilateral symmetry
15. Biological magnification
16. C₃ plant
17. C₄ plant
18. CAM plant
19. Calvin Cycle
20. Cambium
21. Cellular respiration
22. Coevolution
23. Commensalism
24. Connective tissue
25. Cuticle layer of a plant
26. Detrivore
27. Dominant vs recessive phenotype
28. Ectotherm
29. Endotherm
30. Endosperm
31. Enzyme
32. Epithelial tissue
33. Ethylene
34. Eubacteria
35. Eukaryote
36. Exoskeleton
37. Fermentation
38. Flower ovary
39. Frond
40. Gametophyte
41. Genetic variation within a population
42. Genetically modified organism
43. Gibberellins
44. Glycogen
45. Gymnosperm cone-male or female
46. Gymnosperm leaf
47. Hermaphrodite
48. Heterotrophy
49. Homeostasis
50. Homologous structures
51. Hydrophobic
52. Hydrophilic
53. Invasive species
54. Keystone species
55. Krebs cycle
56. K-strategist
57. Lichen
58. Lipid used for energy storage
59. Littoral zone organism
60. Long day plant
61. Meristem
62. Modified leaf of a plant
63. Modified root of a plant
64. Modified stem of a plant
65. Mullerian mimicry
66. Mutualism
67. Mycelium
68. Mycorrhizae
69. Niche
70. Parasitism
71. Parenchyma cells
72. Phloem
73. Pollen
74. Pollinator
75. Population
76. Predation
77. Prokaryote
78. R-strategist
79. Radial symmetry (animal)
80. Redox reaction
81. Rhizome
82. Seed dispersal (animal, wind, water)
83. Spore
84. Sporophyte
85. Stigma and style of carpel
86. Succession
87. Taxis
88. Territorial behavior
89. Tropism
90. Unicellular organism
91. Vestigial structures
92. xylem

Example Entries for Photo Blog

Notice the toy giraffe in the pictures below. This is the bloggers proof object and is used to demonstrate that the photographs in the blog entries are original. **Make sure you have the proof object in each of your photos.**

4. Detritivore



This is a picture of an earthworm. The earthworm represents a *detritivore*. A detritivore, also called a decomposer, is an organism that consumes non-living organic materials (corpses, fallen plant material, and wastes) to obtain its energy and nutrients. They can be found in many different areas (land and water). They can also be found in many different types, for example, fungi, bacteria, and protists, as well.

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.

Photo Blog Table of Contents

Name _____

(Submit this completed form the 2nd day of class)

Submitted via email

Your photo with proof object submitted via email

Photo Order	Biological Terms/Concepts	Comments	Points Earned
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			

Photo Order	Biological Terms/concepts	Comments	Points Earned
22			
23			
24			
25			