

AP Biology Summer Assignment 2010

Welcome to AP Biology! I am really looking forward to having you in AP Biology and hope that you are all looking forward to it as well. It will be a tough class at times but the rewards in the end will be worth the hard work. You'll be amazed at how much knowledge you gained and can apply to many aspects of your life. I know you are all excited to get going in this class as soon as possible! ☺ The purpose of the AP Biology summer assignment allows us to get a head start on the year in order to cover required concepts prior to the test in May. Otherwise we will be stressing out in March and April to race through material that we haven't covered. The table below is guide to what tasks need to be completed. You will find the task details below the table.

Task	Due Date	Task to Complete
1	June 30, 2010	Email that you received the assignment
2	August 1, 2010	Look for an invitation to sign up on the Grou.ps website. Follow instructions on main page.
3	August 20, 2010	Start your Biology photo album. Post at least 5-10 each week on your FA blog
4	1 st day of class	Text readings and questions
5	1 st day of class	Buy class supplies

Task #1 Email Me!

Due Date June 30

Email me at dgarcia@fredericksburgacademy.org in order to let me know that you received the summer assignment. Email me at any time if you have questions about the assignment. This assignment is also posted on the FA website.

Task #2 Grou.ps Invitation

Due Date August 1

You will receive an email invitation to join the class Grou.ps website. (Grou.ps is very much like Ning but Ning now costs money so I've moved on to a new site.) Note it will come from my gmail account so check your junk mail if it doesn't appear in your inbox. Once you join, you will reach the main page. Follow the instructions on the main page as to what you need to do next. If you have questions, email or call me!

Go on to the next page...

AP Biology Summer Assignment 2010

Task #3 The Biology Album

Due August 20 (yes this is before school starts)

For this part of your summer assignment, you will be familiarizing yourself with science terms that we use throughout the year. On the next page is the list of terms.

1. **Earn 80 points by photographing (digital or paper) 40 items from the list of terms.** You will post your photographs with appropriate **explanations / descriptions** on your **FA blog**.

- Begin posting your photos on your blog as soon as possible. **Try to lump your photos into groups of 5 or 10 per post if possible.** That way you will only do just a few blog posts. **Title your posts "AP Bio Album #1" or something like that and number your photos within the post.** Don't wait until the last day to upload everything. Too stressful!
- For photo descriptions, include brief explanations of what the concept means and how your photo illustrates the idea. These do not have to be long explanations.
- Use the category **APBio** so that I can syndicate it accordingly.
- **If you don't have a blog, email me.**

2. **YOU CAN BE CREATIVE:** You could submit a photograph of the whole organism or a close up of one part. The explanation clarifies the meaning of the photo.

3. **ORIGINAL PHOTOS ONLY:** You can't use an image from any publication or the Web. You must have taken the photograph yourself. Prove it by placing something in your photographs like a pen or a coin or a key or your cell phone, etc.

4. **NATURAL ITEMS ONLY:** All items must be from something that you have found in nature like in your yard, neighborhood, and town. **DON'T SPEND ANY MONEY!** Research what the term means and then search for an example IRL.

5. **TEAM WORK:** You may work with other students to complete this project, but **each student must turn in his or her own project** with a unique set of terms chosen. So working with others means brainstorming, discussing, going on photography trips together. It doesn't mean using the same items! There are lots of choices so there's a very slim chance that any two students pick the same items.

6. Go on to the next page for the items...

Below are the items you are to photograph. An individual organism can only be used **once**. Humans are acceptable for **one** category only.

AP Biology Summer Assignment 2010

CATEGORIES

Each specimen in a category is worth 2 points up to a total of 5 specimens in the category. Except where noted every specimen must be native to Virginia.

1. Different biomes (only 3 must be within VA)	7. Organisms in different animal phyla
2. Different types of carbohydrates	8. Organisms in different plant divisions
3. Different classes of proteins	9. Organisms in same class but different orders
4. Evidence of different alleles for the same trait	10. Organisms in same order but different family
5. Distinguishing characteristics between monocots & dicots	11. Organisms in same genus but are different species
6. Organisms in different kingdoms	12. Organisms on different levels of the same food chain

INDIVIDUAL ITEMS

Each specimen is worth 2 points. You may have up to 2 examples of each item; submitting more than 2 will not add any additional points. These do not need to be native to Virginia.

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

AP Biology Summer Assignment 2010

Task #4: Text Readings: Yippee!!!

Due date: The first day of class

It is vital that you learn to love to read your textbook and other reading material. Ask anyone from the previous years and they will tell you that they didn't realize that there was so much reading in this class. And if they didn't do the readings, they didn't know the material as well. So make it a habit to read but don't try to do everything at once--A few sections at a time. And along with the reading you need to learn to comprehend the material by answering questions or taking notes. I'll guide you in the beginning but you'll work your way through on your own as you go through the year. For the summer assignment reading you will begin with the Evolution Unit (chapters 17 and 1 only) and much of it should be a review.

Chapter 17 Introduction to Darwinian Evolution: Read and take notes on this chapter. Then answer the following questions.

1. Ideas about Evolution and Darwin's Ideas

- What are the four key parts to Darwin's theory of natural selection? There technically is a fifth component too.
- Who was Lamarck and how was his idea different than Darwin?
- Why were Charles Lyle and Thomas Malthus important in the development of Darwin's theory?
- What part of Darwin's theory was he unable to explain? How does the modern synthesis theory fill this gap?

2. Evidence for Evolution: For each of these terms, what can you explain as far as how each of them relates to evidence for evolution either in Darwin's time or today (because Darwin didn't know about some of them)

- paleontology, biogeography, embryology, comparative anatomy, homologous structures, analagous structures, vestigial structures, molecular biology, and artificial selection

3. Complete the following links to help you gain a firmer understanding and greater recall concerning the concepts of Darwinian Evolution. Take notes if needed.

[Explore Galapagos](#)

[Natural Selection #1](#)

[Natural Selection #2](#)

[Natural Selection #3](#)

[Darwin](#) (Darwins Diary, In the Name of Darwin, and An Origin of Species)

Chapter 1 A View of Life: Actively read and take notes on this chapter.

AP Biology Summer Assignment 2010

Task #5: Class supplies

Due date: The first day of class

Obtain materials for class. Buy your textbook as soon as you are able to do so. However, you do not need to have your book to do the entire summer assignment.

Required Materials (bring to class everyday):

- Textbook: Solomon, Eldra, Linda Berg, and Diana W. Martin. Biology. Independence, KY; Brooks/Cole Thomson Learning. 7th edition, 2006.
- Laptop computer
- 1-2" binder or folder for notes, handouts, labs.
- Pencil/pen
- An old pair of sneakers or shoes to wear on lab days

Optional Materials:

- 4-5" folder to hold cumulative course materials for the year.
- Test prep study guide. You can buy it any bookstore or on Amazon.com (cheaper at Amazon) . I recommend:
 - Cliff's AP Biology, 3rd edition, Philip Pack, Ph.D. **ISBN-10:** 0470097647.
 - Cliff's AP 5 Biology Practice Exams Philip Pack, Ph.D. **ISBN-10:** 0471770272