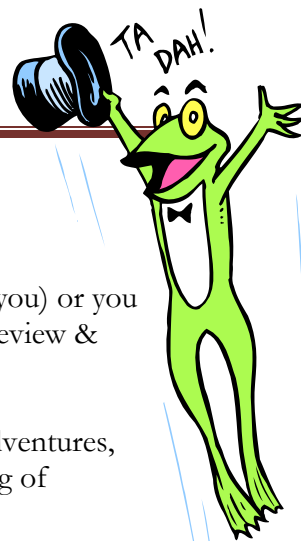


Summer Enrichment AP Biology 2009-10



Welcome to AP Biology 2009-10!

I am looking forward to a fantastic semester with all of you.

You will need: Composition book, AP Edition Review Workbook (provided to you) or you can purchase AP Biology Exam Review by Barron's/ Cliff's Notes/Princeton Review & internet access.

I hope all of you have a good summer. I can't wait to hear of summer adventures, trials and tribulations! I know that the last thing you want to see at the beginning of summer is an assignment for your AP biology class, but that is what this is.

I am glad that you have decided to take AP and I look forward to an exhilarating year. The AP biology course is a rigorous, college-level introductory biology course. As such, it covers a wide variety of material, from biochemistry to animal behavior. In order for us to even begin contemplating covering all of these topics, it will be necessary for you to cover several chapters on the science of ecology (chapters 52 -54 and the first three chapters before the start of school. Chapter one is a preview of what is to come, chapters 2 and 3 should be review for all students (basic chemical concepts) and really should not require more than about 30 minutes of review for each of these two chapters.

How can you get the most out of this course and prepare yourself to take the AP exam? First, make sure you know what is expected of you. Second, remember that answers in science are not always readily available. The fun and thrill is in the quest! Learn to think for yourself and use deductive reasoning. This will help you not only in biology but also in life. Third, plan to put a lot of time into this course. Remember, this is not just "another AP course", but rather a science AP course. Science doesn't come easily for most people.

A variety of teaching methods are used, including labs, projects, and hands-on activities designed to help you learn the material, and demonstrate your ability to teach what you have learned (the surest sign of understanding). Many of the skills you learn here should help prepare you to be a more successful college student. You will need to be organized, consistent, and willing to work hard, because your success in this course depends on your ability to study independently.

Since AP Biology is a college-level course with a college-level exam at the end of the year, many topics must be covered in depth. In order to do this, we must get started quickly during the first week of school. To help you with this, you must do the following assignments over the summer.

No matter which semester you have this class; you must complete this assignment during the summer and bring it to me in room 513 on the first day of class in the fall semester.

I look forward to having you in my class next year and I know that we will have a great semester together. Enjoy your summer and make sure to have fun and relax. See you in August!

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Text: Campbell, Neil A. and Jane B. Reece. *Biology*, 8 ed. Benjamin Cummings Publishing Co. And AP Exam Prep Book (**Use this one for the summer assignment**) **Barron's or Cliffs AP Biology Study Guide 3^d edition (2nd is ok also)** is strongly recommended.

Below are the assignments by chapter:

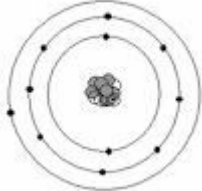
Part I: Organic Chemistry Preparation

Read Chapters 2-5 from your **workbook**

Assignment A: Essential Elements

(25 points HW/CW category)

- Name of Element and periodic block information
- Draw the electron dot diagram for each of the following elements on separate note cards. Include the correct number of protons, neutrons, and electrons in the correct location

a. Hydrogen b. Carbon c. Nitrogen d. Oxygen e. Sodium	f. Nitrogen g. Phosphorous h. Sulfur i. Chlorine j. Potassium
Protons & Neutrons 23 Na 11 Protons	Na <div style="text-align: center; margin-top: 10px;">  </div>
Use any internet resource.	

Assignment B: Fundamental Functional Groups

- Name and draw: Functional group & Monomers in the chart below
- Give examples of compounds that contain these functional groups.

Functional Groups	Monomers
a. Hydroxyl b. Alcohol c. Amino group d. Carboxyl e. Carbonyl f. Aldehyde g. Ketone h. Phosphate i. Methyl j. Thiol	k. Glucose (alpha and beta) l. Fructose m. Saturated fatty acid n. Unsaturated fatty acid o. Amino acid p. Nucleotide
You can use internet resources to complete this section.	

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Preview

Part II (2 hrs)

(35 points Lab category)

Assignment A:

Kingdom Plantae Review

Use **Workbook OR Review Text: Barrons or Cliffs AP Biology** to assist you to complete your reading. Read Ch.29 and create an organizer (table, Chart, concept-map) in your composition notebook. This is an excellent resource for AP Biology that you can use throughout the year for review, particularly before major exams.

Review

Assignment B:

Chapter 52: An Introduction to Ecology and the Biosphere

Workbook: Read the chapter. Pay attention to the role of abiotic and biotic factors in determining species dispersal and abundance.

Chapter 53: Population Ecology

Workbook: Read the chapter. Understand all of the factors that come into play in determining how successful a population is in a particular environment. Know the two growth models and their underlying assumptions. Know the difference between density-dependent and density-independent factors. Be able to discuss how the human population has grown on both a world-wide basis and on a country-by-country case (examples of different age-structure pyramids).

Chapter 54: Community Ecology

Workbook: Read the chapter. This chapter deals with the interaction between species in space and time. There are lots of terms to know in this chapter – you should know them! It also really helps to be able to associate specific species with terms – like sea otter and Keystone species or beaver and foundation species. The role of disturbance and community structure and the theory of Island Biogeography are also discussed in this chapter. The example of Glacier Bay Alaska (one of my old stomping grounds) is a great example of primary succession.

Chapter 55: Ecosystems

Workbook: Read the chapter. This chapter deals with the flow of energy and matter through trophic levels. Read this chapter carefully – it may answer some of the questions you may have about topics such as global warming and the role of ozone in the environment. If you haven't already, rent Al Gore's *An inconvenient truth* this summer and watch it.

Movie

Part III:

(50 points in test/quiz category)

A. *Ecological Review: (choose and complete ONE of the following assignments)*

All work must be: your OWN, original work; typed in complete sentences (double space, Times, 12 font); printed out and before the first day of class begins.

- 1. Review ONE Feature Film:** (Finding Nemo, I Am Legend, Fern Gully, The Lion King, Ice-age, Happy Feet, Eight below, avatar,) Identify and completely explain 2-3 ecological relationships or concepts by citing specific examples from the movie as support for the explanations. Identify 2-3 fallacies and discuss why they are

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fallacies based on specific information cited from the workbook or barrons/cliffs (page numbers). If you used internet resources cite the resources.

2. Review *TWO episodes of Planet Earth*: Identify and completely explain 2 ecological relationships or concepts discussed in **each** episode. Completely explain the human impacts on the specific ecosystem/biome using specific examples from the show AND specific information from the book (page numbers). Connect 2 specific evolutionary adaptations (structure, behavior, or function that promotes survival/reproduction) to their specific ecosystem demands. {For example ONLY: the polar bear is large (reduced surface area to volume conserves heat) and white (camouflage for hunting) and hibernates (conserve energy) to survive in arctic.}

THINK 5!