

To Prospective A.P. Biology Students and Their Parents:
Pathways to A.P. Biology for Next Year (2013/2014)

What Are My Choices to Prepare for A.P. Biology?

You need to prepare by gaining a thorough understanding of two of the topics we cover in A.P. Biology: Methods of Science and Chemistry for Biology. If you have done prior course work in Biology, either at South or elsewhere, you may already have covered this material and you are not required to do further study. If you have not had any prior classes that covered these areas, you may choose to study on your own or to attend one of two “summer institute boot camps.” Each of these will involve 15 hours of class time and associated independent study. The dates are 6/25-6/28 and 8/26-8/29. Each class will run for 4 days, between 9:00AM and 1:00PM, with a short break each day.

Even if you feel that you have met the requirements by other means, or you are leaning towards a “do-it-yourself” approach, I really want to encourage any student who is able to attend one of these summer sessions to do so. I think it will give you a real jump-start on the year. In addition, because I plan to include one A.P. lab activity during these institutes, those who chose self-study will have to do that lab at the start of the school year during J-blocks or other out-of-class time.

If you are unable to make either of the sessions offered, you may opt for “independent study.” You may take a class of your choosing over the summer that addresses the topics we will cover, or you may explore resources on line and follow our curricular materials. One good on-line option is M.I.T.’s open courseware. The site states that: “We have selected relevant material from MIT’s introductory courses to support students as they study and educators as they teach the AP Biology curriculum.” This site can be found here:

<http://ocw.mit.edu/high-school/biology/>

Another alternative is the excellent free text found at:

<http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.html>

If using this source, we will cover the first 3 chapters.

What are the topics we will cover in the summer institutes or which we must study on our own?

We will address 2 broad topics: Methods of Science and Chemistry for Biology. Some of the chemistry should be review. Rough outlines are provided below.

I. Methods of Science

- A. Scientific reasoning: Induction vs. deduction
- B. Terms of Science
- C. Tools of Science
- D. Precision and accuracy of measurement
- E. Hypothesis driven design
- F. Variables
- G. Sample sizes
- H. Types of experiments
- I. Mathematical methods of data analysis
- J. Using graphs and tables

II. Chemistry (for Biology)

1. Basic Intro
 - A. Organic vs. inorganic molecules
 - B. Types of bonds and inter- and intra-molecular forces
 - C. Functional groups
 - A. Isomers and their importance
 - B. Elements vs. compounds
 - C. Redox reactions
 - D. Energy and chemical reactions
2. Water and its special properties
 - A. pH
3. Major organic compounds:
 - B. Carbohydrates
 - C. Lipids
 - D. Proteins
 - a. Enzymes
 - E. Nucleic Acids
 - a. ATP

What else do I need to do to prepare?

During the last week of school please check in with me, in room 3114. You will be given 3 things:

- 1. A copy of the text book**
- 2. A summer study packet. If you will be attending one of our summer sessions, we will use this material during our class sessions. If you will be working on your own, you will need this as a guide.**
- 3. A card with contact information for Dr. K. You will be asked to provide your e-mail address, which I will use to create an e-mail chain. This will assure that every student gets copies of the power points we will cover and receives any updates.**

Is there a test?

Yes, there will be a “readiness” test given on 8/29. If you have attended one of our summer sessions and/or read and mastered the material in the study packet, you should have no trouble passing this test.

What if I don't pass?

In the unlikely event that you do not pass, we will have a private conversation about your test and why you had trouble. We will try to make sure that you are placed in a biology class where you can enjoy science and succeed academically.

I am looking forward to seeing all of you next year!

Dr. Jordan Kraus

jordan_kraus@newton.k12.ma.us