

SLEEPY HOLLOW HIGH SCHOOL
AP BIOLOGY
SUMMER ASSIGNMENT 2009 ☺

Welcome to AP Biology. The summer assignment below is required of all students taking AP Biology. This assignment was developed with four goals in mind:

1. To review a few basic chemistry and biology topics so that we can get into the content of the course as soon as possible.
2. To evaluate your ability to gather information from a variety of sources and to present that information in a coherent way.
3. To give you a sense of the pace and depth of AP biology.
4. To get you (Na⁺K⁺) pumped for the class ☺

You should work on this assignment for about 1-2 hours per day for 7-8 days. (Except the 3rd assignment).

Enjoy the journey. I am looking forward to our year together.
Leana Peltier

I: **DUE: Monday, August 17th.** You are to use a variety of resources, complete each of the following questions. Answers **MUST** be typed and should be no more than 2 pages long. See below for a list of Internet resources.

1. Water is essential for life on earth. Why?
Focus in on the role water plays in living things and the chemical properties of water that allow it to perform as it does. You should be able to understand and write about polarity, surface tension and specific heat.
2. DNA is the genetic information molecule. Describe the structure of DNA. Relate changes in DNA to changes in genetic information.

II: **DUE: Monday, August 17th.** Use a variety of resources to explain or illustrate each of the following terms, ideas or structures. Please be sure your explanation is complete and that you refer to both structure and function in your answer. Be sure to use diagrams whenever possible. **(DRAW YOUR OWN DIAGRAMS...do not copy, cut, paste)**

1. Organic molecules
2. Non-Polar organic molecules
3. Amino acids
4. The 4 levels of protein structure.
5. A dehydration synthesis (condensation) reaction
6. Structural formula for glucose
7. Formation of a triglyceride

III: **Biology Current Event- DUE first day of school.**

You must collect a total of THREE articles relating to the living world. A valuable source is Tuesday's NY Times Science section. The articles can be of any length and you must supply a copy. Once you have read and understood the article you must do the following: (no more than one page in length)

1. Summarize the article
2. Explain the significance of the article.
3. Detail how it impacts the living world.

IV: **HUMAN DISEASES-DUE first day of school.**

HUMAN DISEASE POWERPOINT PRESENTATION

THE PURPOSE:

The purpose of this assignment is to have you look at the human body from a different angle. It is almost impossible to open the newspaper or watch the news on TV without hearing about human diseases, new cures and the state of our health care system. Health care is a major agenda item for the president and the nation. The body is susceptible to malfunction and diseases and Americans are worried about how they are going to pay the costs of their health care if they become sick. In this project, you will focus on a human disease as a way to learn more about the way the body works.

1. THE PROCEDURE:

Choose a disease (genetic, infectious or otherwise) or serious physical problem to focus on for your project. Your project will have more meaning for you if you choose a disease that interests you. (Note that no two students can do the same project.) **Send me an email with your topic and I will respond to OK your project. First come first serve. lpeltier@tufsd.org**

2. RESEARCH YOUR TOPIC:

Find out all you can about the disease you chose for your project. Examples of information you could include in your PowerPoint:

- A basic description of the disease
- Information on the background and/or history of the disease
- The symptoms of the disease; how a person knows they have it
- Any tests a health care provider would run to help diagnose the disease
- How the disease affects the body
- Cures or treatments for the disease
- Current research to find a cure or better treatment for the disease
- The age one normally gets this disease and how they get it
- How a person's daily life is affected by the disease

3. PRESENTATION

Your presentation will be held to 10 minutes maximum! Please KNOW and INTERNALIZE the important information....don't just read off the screen or computer! **A picture is worth a thousand words....include pics on all your slides.** You will be presenting this PowerPoint on the first day of school.

V: Complete the practice problem set at the following web site:

<http://www.biology.arizona.edu/biochemistry/tutorials/chemistry/problems.html>

SUGGESTED REFERENCES ON THE WEB

www.kensbiorefs.com

<http://users.rcn.com/jkimball.ma.ultranet/BiologyPages>

<http://www.accessexcellence.org> (go to the graphics gallery section)

<http://www.biology.arizona.edu>

<http://www.emc.maricopa.edu>

<http://en.wikipedia.org> (cannot be used by itself)

<http://web.mit.edu/esgbio/www/chapters.html>

OTHER SOURCES OF INFORMATION

Any College level General Biology textbook or a scientific encyclopedia.

I will be back in the Hollow coaching volleyball in mid-August if you need me in person come on over to the gym. You can always contact me at

lpeltier@tufsd.org with any questions or concerns. I look forward to hearing from you all.

For the topics DUE Monday, August 17thyou may email them or mail them to the school ATTN: Ms. Peltier

Summer 2009