

AP Biology Summer Assignment 2016-2017

Welcome to AP Biology!

Purpose: The purpose of this summer assignment is to review a few chemistry concepts that are the foundation to Biology. The interview will give you an insight to one part of Biology.

Due Date: This assignment will be collected on Wednesday August 24th. I will collect your handwritten chemistry review. The interview questions, responses and your summary will be shared with me on Google Docs. The notebook and calculator will be checked on the 24th as well.

Lab Notebook: Over the summer you need to get a composition lab notebook with graph paper. You can find these at Staples and Office Max. This is due on the second day of school, but **beware that many stores run out when school starts so plan ahead (I am not joking!!)** There is no excuse for not being able to find one by this day, you have all summer!! Make sure it has graph paper and not lined paper.

Calculator: For the AP test you are only allowed to use a 4 function calculator. These are the small old calculators that you probably haven't used in years. Because it is the only calculator allowed during the AP test, it is the only calculator you can use on our tests. This means no graphing or scientific calculators. Here is an example of what one looks like. You can find these at Target, any drugstore, Amazon or even the Dollar Store! You need to have this by the first test!

Please email me at jpolivka@acalanes.k12.ca.us if you have any questions. Don't wait for school to start to begin this assignment. I hope you have a great summer!!!



PART 1-CHEMISTRY REVIEW: Answer the following questions. You can use books or the internet to help you. The following video will help you with Chapter 3.

<http://www.bozemanscience.com/water-a-polar-molecule>

Chapter 2: The Chemical Context of Life

1. Distinguish among nonpolar covalent, polar covalent and ionic bonds.
2. Explain why strong covalent bonds and weak bonds are both essential in living organisms.

Chapter 3: Water and the Fitness of the Environment

1. With the use of a diagram or diagrams, explain why water molecules are: a) polar and b) capable of hydrogen bonding with 4 neighboring water molecules.
2. List four characteristics of water that are emergent properties resulting from hydrogen bonding.
3. Define cohesion and adhesion. Explain how water's cohesion and adhesion contribute to the movement of water to the leaves of a tree.
4. Draw a water molecule bonded to 4 other water molecules. Draw covalent bonds as solid bonds as dotted lines and indicate partial charges

PART 2: INTERVIEW: The following link <https://apstudent.collegeboard.org/apcourse/ap-biology> will take you to a list of 103 career areas and 52 college majors from the college board site. Your assignment is to interview a scientist or someone who works in the different fields of science. Your interview needs to be in person or through Skype/Facetime. You can email the person initially to set up the interview, but I would like you to speak with them in person for the interview. In your interview you will need to gather information about the following:

1. What is the person's job title and what the person does.
2. What training/school they needed to receive to get their job.
3. How they got interested in their field.
4. What their typical day is like.
5. What they enjoy about their job.
6. What they find challenging about their job.
7. How the person uses the 5 science skills (observing, inferring, predicting, classifying and making models) in their work.

You are free to add more questions to your interview. You will need to turn in a final draft of your questions with their responses through Google Docs. Please name this document with your last name and period (If you don't know what period you are in, share after you have received your schedule). Share with: jpolivka@auhsdschools.org