AP Biology Summer Assignment 2018-19

Welcome to AP Biology Class!

The two main goals of AP Biology are to help you develop a conceptual framework for modern biology and to gain a deeper appreciation of science as a process (as opposed to an accumulation of facts). Because of the rapid pace of discovery in the life sciences our primary emphasis is on developing an understanding of unifying concepts that connect the major topics of biology.

The AP Biology Curriculum centers around the four Big Ideas and you will need to not only know these but also understand how they all relate:

Big Idea 1: The process of evolution drives the diversity and unity of life.

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.

Big Idea 3: Living systems store, retrieve, transmit and respond to information essential to life processes.

Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties.

The Summer Assignment is to prepare you for the Biology Concepts that we will be studying throughout the year. The Summer Assignment requires you to relate the concepts of Biology to the real world around you which means you will need to be outside to observe and analyze biology in action.

Field Work will be conducted throughout the summer as it relates to assigned readings and videos.

The *Assignment* will be due on the first day of AP Biology classes in September. Please begin your work in July so you won't be overwhelmed on your vacation!

No late assignments will be accepted for any reason. Make sure you follow the directions as given and don't leave out any required elements.

What kind of "field work" are we talking about here? Ecology Observation

A lot of people think you need to go deep into an unpopulated area to see nature, but I'm hoping you'll find a place close to home. A location that you can get to in under fifteen minutes by your usual methods of transportation. You HAVE to have access to this site all year, even when you are busy and stressed and the weather is not cooperative. It should be yours and yours alone. It should be a relatively safe place. No need to go hiking down a terrific but terrifying gorge, please. *The site needs to be a place with some plants and perhaps water, if possible.* The best sites are often empty lots, the ditch across the street, or a place in a park, or even your back yard, if it fulfills all of the necessary requirements!

This summer, you'll be visiting your field site, taking some photographs, and documenting your visit in your lab book and bringing it into class. Please visit your site for at least 30 minutes by yourself without interruption from devices or people you know. The visits should be during daylight hours so you can get clear photos/pictures.

Summer Field Experience Weekly Assignment - ECOLOGY UNIT – Field Work and Video Note - Taking

Ecology Project - One day a week - Record date, time and weather.

Put on some sunscreen (and insect spray, if you are so inclined)

1. Bring: ● a backpack or other bag with your charged device ● your lab notebook ● two black or dark blue pens ● some way to set an alarm for 25 minutes (watch, personal device) ● an old towel to sit on

Directions: 1. Look for poison ivy, spiders, ants, etc… and then sit on the ground (on your towel, if you prefer). You will be sitting in the same spot every visit, so pick a place that has a view of your field site.

2. Make a new entry in your lab notebook called Summer Field Experience. Date each entry every visit.

3. Put your lab notebook in your lap with an uncapped pen.

4. Set your timer for 25 minutes.

5. During the 25 minutes, alternate between observing your site and writing/drawing/sketching.
You are probably not going to know the names of most plants or animals/insects or who is making many of the sounds, no worries. That's quite acceptable. You are taking field notes about your surroundings as they are happening. Observations of relationships and your experience.

6. When the timer goes off, write down one word that describes how you are feeling at the moment.

7. Take the pictures required for that session (see below) on a device of your choosing.

8. Go inside and do a tick/bug check!

9. When home, write a reflection (200 words minimum) of your experience based on your field notes each time, type the reflections which will be turned in with your notebook in September. In your Reflection Paper, comment on what you saw or heard, what you experienced, what questions you have, or what interested you at the moment as it relates to Biology. Be sure to date each reflection paper.

10. A screenshot of your field site on Google maps (maps.google.com). Search for a nearby address and then "drop and drag" a pin so it is easy to see your site's exact location. Print and submit the map.

11. Take at least *three* photographs at your site: one of where you're sitting and two of what you can see when you are sitting there. Give the "big" picture view instead of focusing on details.

12. Relate your experiences in your Reflection Paper based on these questions:

    1. During your observation, what biological connections did you notice?

    2. What behaviors did you observe in organisms?

    3. How did environmental factors affect your location and its ecology?

    4. How does the human population affect the field study location?

    5. What changes/differences did you observe from last week's visit?

Assignment – Ecology Notes from Videos

You will be tested the first week of school on the content of these videos about Ecology.

ECOLOGY NOTES:

Take notes in your Lab Notebook on these videos Ecology Videos:

Ecosystems - http://www.bozemanscience.com/047-ecosystems

Communities- http://www.bozemanscience.com/046-communities

Populations - http://www.bozemanscience.com/050-populations

Ecosystem Change - http://www.bozemanscience.com/051-ecosystem-change

Biodiversity - http://www.bozemanscience.com/055-biodiversity