AP Biology Summer Assignment
2018-2019
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I will set up textbook information and send it to you over the summer. For the purposes of the summer assignment you will be using the same book as Biology II Honors and then switching to a new book for the rest of the school year (starting in August). If you need access to the book or want to borrow a physical copy of the book, see me to obtain one.

Email me with any questions and check your email regularly to keep up to date on any important class information, some of which may refer to you Google classroom.

Over the summer you should be preparing and reviewing for a quiz on the material from Biology II Honors. You should use your study guides and notes from that course. A quiz on the Molecules Units (Chapters 2, 3, 4, 5) and the Cells Unit (Chapters 6, 7, and 12) will occur within the first weeks of school.

Evolution is a standalone topic and you will have a test on just that later in the year.

After discussing the ecology topics you will begin reviewing over the summer, we will have a test on that material (first test of the year).

Assessments (Total 4)

All assignments will be posted in Google classroom with their due dates. All work should be submitted through Google classroom.

Vocabulary Quiz (25 quiz points) On August 30th (first day of class)

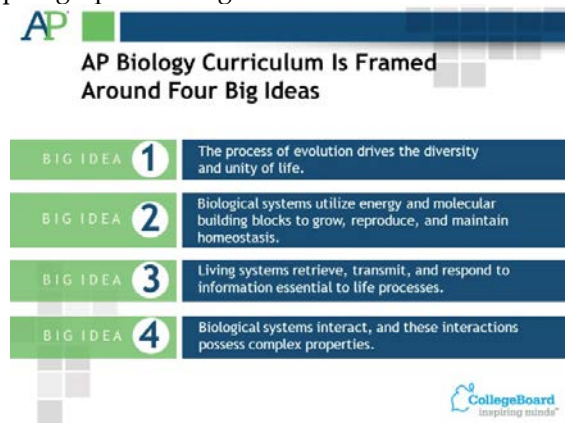
On our first day of class, you will take a short vocabulary quiz to review some of the terminology from both the ecology chapters and Biology II Honors. This will be important terms, for instance, you cannot leave Biology without knowing the difference between a eukaryotic and prokaryotic cell.

The quiz will be 25 points which means it will have 25 words on it.

Video (10 HW points) Due August 30th, 8am (first day of class)

Sean B. Carroll is a well-known evolutionary biologist. (http://seanbcarroll.com/). Many of the examples we have and will discuss in class can be found in his recent book *The Serengeti Rules.*

Your assignment is to view the lecture Sean B. Carroll gives at the Royal Institution which refers to many of the concepts we have or will talk about in class in the upcoming year. https://youtu.be/yzDISuJdfZk On Google classroom, post one of the examples he uses and describe the way in which that example demonstrates a biological principle. There are many examples and you can look at the four themes of AP biology for some ideas. Your response should be a short paragraph-do not go overboard with this.



Lab Design (15 Lab points) Due August 30th, 8am (first day of class)

To investigate animal behavior, you will design and carry out a lab that tests some aspect of behavior of the species *Armadillidium vulgare* as the first lab of the year.

Each of you will design a lab procedure that will test some aspect of behavior in these organisms. Some research on these creatures is involved if you are going to design a quality lab. I will be expecting resources cited within the lab design and at the end in a Works Cited page.

Your lab design should include the following:

Background
Hypothesis
Materials
Procedure

Include resources in a Works Cited Page; MLA format should be followed.

When we meet as a class, your group will decide which lab procedure to use (if possible combine efforts to design the best lab).

Read the Animal Behavior and Ecology chapters in your textbook (Chapters 51-56) Due September 4th, 8am

Below are required and optional questions to complete. The required questions should be turned in via Google classroom by September 4th at 8am.

Required Questions:

Questions are posted on Google classroom (5-10 questions). They involve the use of the various formulas that apply to ecology.

See the formula sheet posted on Google classroom for necessary formulae that will be used throughout the year.

Optional Questions:

Test your understanding of the concepts by at least reading through these questions. I will not collect them, but we will discuss these topics in class prior to the test.

Chapter 51

1. *How is behavior defined?*
2. *Give specific species examples of the following behaviors/terms:*
    a. *Sign stimuli*
    b. *Kinesis*
    c. *Taxis*
    d. *Circadian rhythm*
    e. *Pheromones*
    f. *Altruistic behavior*
3. *How do the above behaviors relate to the idea of natural selection?*

Chapter 52:

1. *Explain how it is both abiotic and biotic factors that influence an ecosystem. In your explanation mention some specific examples of abiotic and biotic factors.*

Chapter 53:

1. *What does it mean for a population to be in exponential growth? What will the per capita birth and death rates be if a population demonstrates zero population growth?*
2. *What are three examples of limiting resources that can influence carrying capacity?*
3. *Distinguish between K and r-selected populations and give examples of each type of organism who will exhibit these models.*

Chapter 54:

1. *How can the predator prey relationship lead to coevolution? Explain your answer by giving an example.*
2. *Distinguish between the different types of symbiotic relationships, parasitism, commensalism, and mutualism.*
3. *Name one example of a keystone species and explain the effect its removal will have on the ecosystem.*
4. *Give a scenario that would cause primary ecological succession to begin and then trace the steps that would occur in order to have a flourishing, thriving ecosystem (with plants and animals).*

Chapter 55:

1. *What types of organisms are always at the first trophic level?*
2. *What is eutrophication and what contributes to this?*
3. *Generally the amount of energy that is available at one trophic level is what amount?*
4. *What roles do humans have in the carbon cycle (name all ways they contribute)? The water cycle? the nitrogen cycle?*
5. *Explain the process of biomagnification. Why is this a concern?*
6. *What is the greenhouse effect? How do humans play a role in increasing atmospheric carbon dioxide?*