

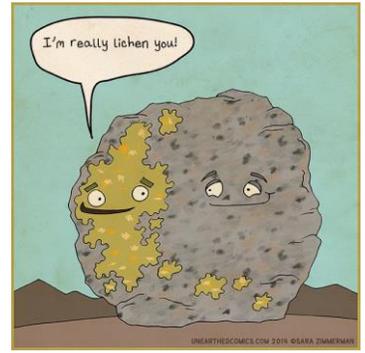


Advanced Placement Biology

Summer Assignment

2018-2019

Mrs. Hitchman



AP Biology is a challenging and rigorous course that is equivalent to a college or university's general biology course. It is a two-period class that consists of both lecture and lab. Various labs will be performed throughout the year, but they will not be performed on a daily basis. You can expect to spend approximately 5-10 hours a week on this class, if not more. In order to be successful in the class you must keep up with your assignments. The AP Biology curriculum covers a broad range of topics. It is expected that you come to class prepared having read any information that is pertinent to our current lecture topics. Please make sure you are willing to devote a lot of time and energy to this course! If you are pursuing a science degree in college this course will help acquaint you with the types of labs, assignments, and assessments that are used at the college level.

Textbook: Campbell, Neil A. and J.B. Reece; *AP Edition Biology* 7th Edition (2005)
Campbell, Neil A. and J.B. Reece; *AP Edition Biology* 9th Edition (2011)

Exam Date: May 13, 2019

It is your responsibility over the summer to read Chapters 50-54 (7th ed.) or Chapters 51-55(9th ed.) on ecology and complete the appropriate activities.

- **Ecology Chapters in the 7th ed.**
 - **Chapter 50:An Introduction to Ecology and the Biosphere (Ch. 52 9th ed.)**
 - **Chapter 51: Behavioral Ecology**
 - **Chapter 52:Population Ecology (Ch. 53 9th ed.)**
 - **Chapter 53:Community Ecology (Ch. 54 9th ed.)**
 - **Chapter 54: Ecosystems (Ch. 55 9th ed.)**

*You are responsible for learning the content highlighted in the activities you complete for this unit.

*The following assignments must be turned in on the first day of school. DO NOT wait until the week before you return to school to begin these assignments! All assignments are to be completed individually.

Chapter 50-An Introduction to Ecology

Chapter 51-Behavioral Ecology

On a trip to a dense forest, a biologist noticed that millipedes (small invertebrates) were plentiful under logs but were rarely seen in any other location. Propose an **abiotic** environmental variable that could explain why millipedes are found more frequently under logs. For the abiotic environmental variable you choose, **design** a controlled experiment to test a hypothesis that this factor affects the distribution of millipedes on the forest floor. **Describe** data that would support your hypothesis and conclusions that you could draw from the hypothetical data.

Your experimental design should be typed, in complete sentences and should follow the template below.

Your Name
<u>Experiment Title</u>
<u>Background Information</u>
<u>Purpose</u>
<u>Hypothesis</u>
<u>Independent Variable</u>
<u>Dependent Variable</u>
<u>Constants</u>
<u>Control group(s)</u>
<u>Experimental group(s)</u>
<u>Procedures</u>
<u>Expected Data</u> - <i>Summarize</i> the <i>expected</i> results from your experimental and control groups.
<u>Conclusions based on expected data</u> - <i>Explain</i> the rationale behind your expected data.

Chapter 52-Population Ecology

- Using your textbook and/or other sources, complete the attached graphic organizers on exponential and logistic growth.

Chapter 53-Community Ecology

- Create a children's story (ages 3-6), which addresses the following plot:
 - Two similar species avoid competitive exclusion by either resource partitioning or character displacementYour story can be typed or hand-drawn. It should include illustrations and must include the concept of ecological niche. Your book should have a minimum of 6 pages.
- Complete the activity "*Food Chains in the Chesapeake Bay.*"

Chapter 54-Ecosystem Ecology

- Answer the following questions on a separate sheet of paper.
 - Two processes that emerge at the ecosystem level of organization are energy flow and chemical cycling. Develop a concept map that explains, compares, and contrasts these two processes.
 - Describe four or five human intrusions in ecosystem dynamics that have detrimental effects.

***Don't forget to bring all of these completed assignments with you on Tuesday, September 4!**

If you have any questions or concerns over the summer you may contact me via email at hitchmane@calvertnet.k12.md.us.

Have a great summer!



Food for Thought...

