AP Biology ~ 2024-2025 **Mrs. Susan Mitchell**

Dear student,

Welcome to Advanced Placement Biology- a very challenging and rewarding, course. AP Biology is an extremely self-directed class that will require time management and organizational skills. We will be covering most of the material in a college-level textbook and we will be doing 12 in-depth labs over the course of the year.

We are participating in a demanding task together. The course description, as set forth in the AP course handbook states: The AP Biology course is designed to be the equivalent of a **full-year college introductory biology course** taken by biology majors during their first year (**8 college credits**). Consequently, we will be covering a chapter a week (sometimes more) out of a college-level textbook for the entire year. The result will be a much deeper knowledge of biology and a score on the AP Biology exam which might lead to receiving college credit for all your hard work.

Understand that YOU will determine your success in this course. The course goes at a rapid pace for the whole year and your full attention will be needed for success.

I expect that all of you will have all the required materials on the first day of class and that these materials will be brought to class daily. **You should be reading the AP Biology textbook nightly; expect to work almost an hour each night.**

If you have any questions about the AP Biology course, please see me in STEM B or email me at smitchell@gmahs.org. I am grateful for the opportunity to be your instructor and am looking forward to working with each of you next year as we explore the dynamic world in which we live.

Materials:
Textbook: *Campbell Biology in Focus,* AP Edition, 2nd Edition, 2017. San Francisco: Pearson.
Companion Website: http://www.masteringbiology.com
Required: Study Guide (state funds)
AP Biology Investigative Labs: An Inquiry-Based Approach (instructor provides)
College Board AP Exam Info Site: http://apstudent.collegeboard.org/apcourse/ap-biology

AP SUMMER ASSIGNMENT:

Read the assigned chapters in the review guide and watch the assigned videos.
Create a one-pager (summary) for each chapter that is due when we return to school.
These serve as your notes for the chapter.
Utilize the AP Scoring Rubric to write the required essay **(100-150 words)** for each unit.
Responses should be in a well-constructed paragraph that incorporates the question you are answering.
Proofread your work. Post essays to **Turnitin** by the dates indicated.

Chapter 1: Evolution and the Foundations of Biology **Essay due: 07/12/24**
Reading only; no video. One=pager.
Big Idea Evolution: In a short essay, **discuss** Darwin's view of how natural selection resulted in both unity and diversity of life on Earth. Include in your discussion some of his evidence.

Chapter 2: The Chemical Context of Life **Essay due: 07/26/24**

Read chapter and view video: Properties of Water; Dehydration Synthesis and Hydrolysis; Carbohydrates and Lipids

https://www.youtube.com/watch?v=2HeIIT_fGdA&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=11&t=0s

Big Idea Organization: Several emergent properties of water contribute to the suitability of the environment for life. In a short essay, **describe** how the ability of water to function as a versatile solvent arises from the structure of water molecules.

Chapter 3: Carbon and the Molecular Diversity of Life **Essay due: 08/09/24**

Read chapter and view video: Proteins and Nucleic Acids
https://www.youtube.com/watch?v=tdwoHBZkHuM&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=12&t=735s

Big Idea Organization: Proteins, which have diverse functions in a cell, are all polymers of the same kinds of monomers – amino acids. Write a short essay that **discusses** how the structure of amino acids allows this one type of polymer to perform so many functions.

Chapter 4: A Tour of the Cell **Essay due: 08/23/24**

Read chapter and view video: Organelles and Cell Size
https://www.youtube.com/watch?v=rx9KEMcT16Q&list=PLoGgviqq4847VchRdUdvbDPzsp9ResrjD&index=12

Big Idea Organization: Considering some of the characteristics that define life and drawing on your new knowledge of cellular structures and functions, write a short essay (100-150 words) that **discusses** this statement: Life is an emergent property that appears at the level of the cell. (Review the section on emergent properties in Concept 1.1)

Textbook Reading:

There are a myriad of approaches to learning and you will need to develop your own strategies to master the concepts and content of this course. One requirement for success is to be an ***active learner***. Reading your text in a rush, or in a semiconscious daze, does not constitute time studying.

The textbook does an excellent job of presenting the material needed to be successful in AP Biology. When you are reading the assigned chapters, please take advantage of all that the textbook has to offer.

Before reading a chapter, familiarize yourself with the ***Key Concepts*** of that chapter.
As you read the chapter material, take time to look at the figures and tables presented in the text.
Read the captions that accompany the figures and tables and allow yourself the time you need to digest the information presented.
At the end of each section, check your current understanding of the material you just read by answering the ***Concept Check*** questions.
At the end of each chapter, there is a ***Summary of Key Concepts***.
Read this summary BEFORE you read the chapter to prepare yourself mentally for the concepts that will be presented in the chapter.
Then, read the ***Summary of Key Concepts*** AFTER completing the chapter to review what you just read.

Grading Rubric for "Focus on a Big Idea" AP Biology Essays				
	Understanding of Theme and Relationship to Topic	**Use of Supporting Examples or Details**	**Appropriate Use of Terminology**	**Quality of Writing**
4	Evidence of full and complete understanding	Examples well chosen, details accurate and applied to theme	Accurate scientific terminology enhances the essay	Excellent organization, sentence structure, and grammar
3	Evidence of good understanding	Examples or details are generally well applied to theme	Terminology is correctly used	Good sentence flow, sentence structure, and grammar
2	Evidence of a basic understanding	Supporting examples and details are adequate	Terminology used is not totally accurate or appropriate	Some organizational and grammatical problems
1	Evidence of limited understanding	Examples and details are minimal	Appropriate terminology is not present	Poorly organized; grammatical and spelling errors detract from essay
0	Essay shows no understanding of theme	Examples lacking or incorrect	Terminology lacking or incorrect	Essay is very poorly written