

AP Biology Summer Assignment

WELCOME

Welcome to Mrs. Strait's AP Biology class! Congratulations! You have challenged yourself and are ready to engage in an extraordinary scientific journey! I am honored to partner with you as we explore Biology in a whole new way!

Interesting fact: This course might offer up to 8 hours of college credit--- depending upon where you decide to attend college upon graduation. Plus, you might just LOVE biology.

THE FOUNDATION FOR THE SUMMER ASSIGNMENT

AP Biology is structured around four Big Ideas as described in the "AP Biology Curriculum Framework." These four ideas include the foundational principles, theories, and processes that govern all living organisms and biological systems.

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

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

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

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

For your summer assignment, you will **complete three tasks**. Each task will focus on one of the Big Ideas. At the completion of your summer work, you will have examined something within each Big Idea. In order to do this successfully, you must first **read the introductory paragraphs** from the curriculum framework that explain each Big Idea. These descriptions can be found within the curriculum document at this link: <https://secure-media.collegeboard.org/digitalServices/pdf/ap/ap-biology-course-and-exam-description.pdf>. Jump to the following page numbers to read about each Big Idea: *Big Idea 1 – p.8, Big Idea 2 – p.21, Big Idea 3 – p46, Big Idea 4 – p78*. You do not need to print this document.

TEXTBOOK

Your text is Campbell Biology, 9th edition. Check one out from the book room prior to leaving school. I will give you access to the online site when school begins.

THE ASSIGNMENT

Your three tasks for the summer work will be to: read a book, go somewhere, and prepare two “review” chapters from your textbook. You have options for (task 1) which book to read, and (task 2) for where you want to go. Details of each task are described in the following pages. The summer assignment is something for which you take ownership based upon your interests. As such, I expect you will find *enjoyment* in what you choose, engage in some scientific *challenges*, be *surprised* by your achievements, and maybe step outside of your comfort zone! These are all great things!

Task 1: Read a book!

Again, this is one part of the summer work that you should start early. There are dozens and dozens of good books highlighting biology, both fiction and non-fiction. Read synopses of each of the following books. According to *your interests*, select one of these books to read throughout the summer.

- *Survival of the Sickest* – by Sharon Moalem
- *The Immortal Life of Henrietta Lacks* – by Rebecca Skloot
- *Your Inner Fish* – by Neil Shubin
- *The Sports Gene* – by David Epstein

The product of your work to submit: Original one paragraph summary of each chapter. Highlight both the story and the biology when possible. Also, include a ½ page description of how the book fits within one of the Big Ideas.

Task 2: Go Somewhere!

Select **ONE** of the following options to complete over the summer. Some are *FREE* and some cost a little *money*. The main product of this task will either be a poster or an interview transcript, plus a connection to one of the Big Ideas.

1. **Go hiking** in a state park. Save the trail map. Take a picture of yourself near five cool things on the trail. Find something creepy under a rock or log, get its picture, and identify it using identification resources. Combine your experience onto a poster project (described at the end of this section). Also write ½ page relating your experience to one of our Big Ideas.
2. **Go fishing.** Provide a map with the location of your fishing trip. Get a picture of yourself baiting your line, fishing, and one with your first fish caught!) Identify the type of fish, and along with your location map and photo journal, combine your experience onto a poster project (also described below). Additionally, write ½ page relating your experience to one of our Big Ideas.
3. **Go to the Houston Museum of Natural Science.** Save your receipt/stub as part of your required product. Take five funny pictures of yourself in three different rooms of the building. Interview one of the experts who work at the museum and ask questions that help you learn

about the specialty of the individual. Get a picture with the expert! Record and transcribe the interview (10 meaningful questions minimum). Include ½ page relating your experience to one of the Big Ideas. Additionally, include your photos and stub/receipt as part of your interview project.

4. **Go to the Houston Zoo.** Keep your stub/receipt. Take pictures of yourself at the Zoo sign and with five of your favorite animals. Observe their behavior and record what you see. Along with your photos and stub/receipt, identify two positive attributes of the design of the Zoo property/habitats and two things you would suggest as improvement. It may require a little research to accurately support your opinions. Combine your experience as a poster project (described below). Cite sources (minimum of 3) MLA style on a separate piece of paper. Also write ½ page relating your experience to one of our Big Ideas.
5. **Go to the Space Center.** Keep your stub/receipt. Get a photo by the NASA entrance. Take photos with 5 different biology related exhibits. Interview any of the experts that you might encounter and ask questions that help you learn about the biology or living aspect of space research. Get a picture with the expert! Record and transcribe the interview (10 meaningful questions minimum). Include ½ page relating your experience to one of the Big Ideas. Additionally, include your photos and stub/receipt as part of your interview project.
6. **The Health Museum.** Keep your stub and receipt. Take photos in five different areas that you visit. In each one, record something new that you learn about that part of the human body. If possible, interview docents about one of the locations you find most interesting. If there are children's areas, request permission to participate in one of the activities. Photograph what you produce.

The product of your work to submit for your Road Trip experience (ONE of the following):

- **Poster project:** Large poster board including pictures, maps, captions and explanations [no paragraphs please]. Should be attractive and interesting, minimal empty space, demonstrates both your experience and the biology within it! (The Zoo trip also requires research sources). Include a separate ½ page description of how the experience illustrates one of the Big Ideas.
- **Interview project:** A transcribed interview with questions and answers. Minimum of 10 questions. (You may need to call ahead to set up an interview.) Photos embedded in the document. Stub/Receipt required. Also, include a separate ½ page description of how the experience fits within one of our Big Ideas.

Task 3: The Textbook Work

This is the part of the summer work that I would recommend doing last (maybe in the last few weeks leading up to the start of the school year). For this part of the assignment, Read Chapters 1 and 2 in your textbook. Take detailed notes. Notes must be your own work and **hand written**. Be prepared to take a quiz on Chapters 1 and 2 on the 2nd day of school.

The product of your work to submit from your textbook work: Hand-written notes for Chapters 1 and 2 of your textbook. Preparation for a quiz on the second day of school,.

Task 4: For Fun! (EXTRA CREDIT – only counts if Parts 1-4 are completed)

Select ONE of the items below. Photographic evidence requested – but no writing!

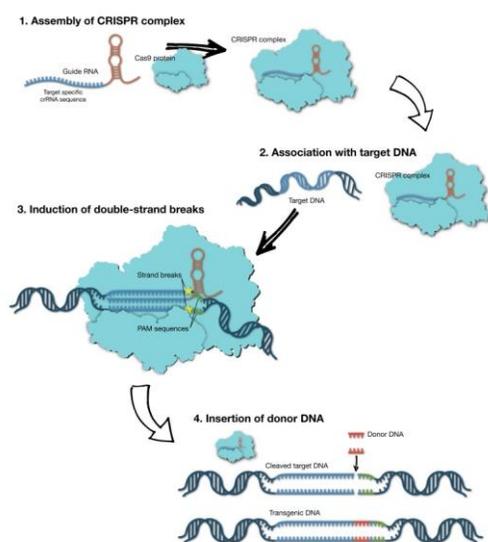
1. Conquer a fear, and try a ride at an amusement park or water park that you find intimidating, scary, and ominous. *video even better than pics!
2. Sleep overnight in a tent! With parental supervision, cook a meal or snack over a campfire (or fire pit) the night before or morning after.
3. Document one of your own quirky excursions of your choice!

DUE DATES and POINTS

- All Projects / Written work – Due August 16, 2019 – 2nd day of school
- Quiz on Chapters 1 and 2 – August 18, 2019

Fulfilling the requirements of each task as described above will constitute a *completed* assignment. Doing so in an *acceptable* manner requires that the quality of such work mirrors that of an entry-level college biology course. A fully completed and acceptable summer assignment will be worth **your first lab grade**. **More importantly, I hope you have fun.**

Deductions will be made for incomplete work or work of undesirable quality. Any late work will be penalized at 10% per day on the entirety of the summer assignment.



Biology is a broad field. It covers a large scale ranging from biomes to the molecular. I hope you get a taste of it this summer.