

# **SUMMER 2022+ READING & PREPARATORY EXERCISES FOR AP BIOLOGY**

From the College Board website:

AP Biology should include the topics regularly covered in a college biology course for majors. The textbooks used for AP Biology should be those used by college biology majors and the labs done by AP students must be the equivalent of those done by college students.

The AP Biology course is designed to be taken by students after the successful completion of a first course in high school biology and one in high school chemistry\*. It aims to provide students with the conceptual framework, factual knowledge, and analytical skills necessary to deal critically with the rapidly changing science of biology.

\*If you have not taken a biology class already, please understand that more of your daily time will be required to keep up with the level of the material in this class than in other AP science classes. This is because you have taken introductory classes for most of those subjects before taking the AP version of the class. This summer it is in your best interest to learn the background, basic biology material. Your level of preparation will be determined by taking online quizzes after reviewing basic biology material on your own. You will be expected to pass many of the online quizzes in one or two attempts, but will be sent more details about which quizzes you will not be expected to pass during this summer preparation.

**BOOKS:** Principle of Life, 2nd edition

**ISBN: 9781464109478** Freeman/Worth

## **SOME BASIC INFORMATION TO GET YOU STARTED**

These are the **BIG IDEAS** of the new AP biology curriculum:

- 1:** The process of evolution drives the diversity and unity of life.
- 2:** Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.
- 3:** Living systems store, retrieve, transmit and respond to information essential to life processes.
- 4:** Biological systems interact, and these systems and their interactions possess complex properties.

Found on WIKIPEDIA: Among the most important topics are five unifying principles that can be said to be the fundamental axioms of modern biology:<sup>[2]</sup>

1. [Cells](#) are the basic unit of life
2. New species and inherited traits are the product of [evolution](#)
3. [Genes](#) are the basic unit of [heredity](#)
4. An organism [regulates](#) its internal environment to maintain a stable and constant condition
5. Living organisms consume and transform [energy](#).

## SUMMER REQUIREMENTS:

1. Read these chapters (listed below) from the Principles of Life textbook as preparation for the school year. Some of these should be review from previous biology classes. While these will be addressed during the school year, we will only quickly review them before testing.
  1. Chapter 2- chemistry and energy of life
  2. Chapter 3-nucleic acids, proteins, and enzymes
  3. Chapter 4- cells
  4. Chapter 7-cell cycle, cell division
  5. Chapter 15 processes of evolution
2. Think of 8 questions you have about biology related topics. Make a list to submit. We will use these as a way to relate the content to things that interest you. (This is due before the first day of class)
3. Think of 8 problems the world is experiencing (biology related or not). Make a list to submit. I am going to try to show you that understanding biology can actually open up the possibilities for solutions to these problems. (This is due before the first day of class)
4. What do you hope to accomplish and to gain from taking this class. A few sentences, less than a paragraph, is required to provide context for me.
5. **The objective packets for the first 2 chapters (15 and 17) of the school year will be made available August 1st before school begins. Please complete these packets of questions about evolution before class begins. This will be the first unit we cover together as a class. (One of the chapters is from the summer reading (15) and the other is related to evolution) You will be quizzed on this material within the first cycle. During the school year you will be expected to complete objectives for each chapter in the first 2 days of beginning the chapter in class. This allows for the best learning and practice of the concepts. Objectives have deadlines and although each is not worth many points, those points add up to several tests during the semester and late points are deducted if they are not turned in.**

Writing plays a big part of AP Biology so take detailed notes or answer the questions in the chapters to practice using the relevant biology terms. Using the correct language is an important skill for this class but also for the AP exam.

EMAIL IF YOU HAVE QUESTIONS OR CONCERNS.