

# AP Biology Summer Assignment

Want to start preparing for AP Biology??? Here are a couple of things you can be doing while still enjoying your summer.

This summer assignment is extra credit worth up to 20 points on a lab grade. You may choose up to 2 tasks to complete. Due Friday, September 10, 2022.

1. **15pts** - Read a book. Make at least 5 connections between topics discussed in your book and the AP Biology Units list on pages 29 and 30 in the [CED](#).
  - a. [The Serengeti Rules: The quest to discover how life works and why it matters](#) by Sean B. Carroll
    - i. This is a favorite of Mrs. Heist. Book is *WAAAY* better than the movie - only covers about  $\frac{1}{3}$  of the book.
      1. Yes - we will be able to tell if you only watch the movie, but try to write about the book.
    - ii. Book available through the San Antonio Public Library system
  - b. [Inheritance: How Our Genes Change Our Lives--and Our Lives Change Our Genes](#) by Sharon Moalem MD PhD
    - i. Ebook available through the San Antonio Public Library system
    - ii. Ebook available through Brandeis Library SORA app
  - c. [Survival of the Sickest](#) by Sharon Moalem
    - i. You must be logged in to your NISD google account to access the linked ebook
  - d. [Your Inner Fish](#) by Neil Shubin
    - i. You must be logged in to your NISD google account to access the linked ebook
    - ii. Video series is available. See documentary assignment below. The book is always better than the movie.
      1. Yes - we will be able to tell if you only watch the movie, but try to write about the book.
  - e. [Endless Forms Most Beautiful: The New Science of Evo Devo](#) by Sean B Carroll
    - i. Book available through the San Antonio Public Library system
  - f. [Some Assembly Required: Decoding Four Billion Years of Life, from Ancient Fossils to DNA](#) by Sharon Moalem
    - i. Book, ebook, and audiobook all available through the San Antonio Public Library system
  - g. [The Sixth Extinction: An Unnatural History](#) by Elizabeth Kolbert
    - i. Audiobook available through Brandeis Library SORA app
    - ii. Book, ebook, and audiobook all available through the San Antonio Public Library system

## 2. Spend time in nature.

### a. **15pts** - Biology Collection

- i. Directions: Familiarize yourself with science terms we will be using at different points throughout the year.

aerobic cellular respiration  
adaptation  
allopatric isolation  
amniotic egg  
analogous structure  
anaerobic cellular respiration  
aposematic coloration

asexual reproduction  
ATP  
autotroph  
auxin  
Batesian mimicry  
biological magnification  
coevolution

commensalism  
detritivore  
directional selection  
disruptive selection  
dominant phenotype  
ectotherm  
endotherm

enzyme	hydrophilic	phototropism
epistasis	hydrophobic	pleiotropy
epithelial tissue	keystone species	positive feedback
ethylene	kinesis	predation
eukaryote	lipid	primary succession
Fermentation	Mullerian mimicry	prokaryote
geotropism	mutualism	radial symmetry (animal)
gibberellins	mycelium	rhizome
glycogen	mycorrhizae	secondary succession
genetically modified organism	Negative feedback	stabilizing selection
heterotroph	niche	territorial behavior
homeostasis	osmosis	thigmotropism
homologous structures	parasitism	vestigial structures

- ii. "Collect" at least 15 items on the terms list. When I say "collect," I mean you should find the item and take a photograph of the item. You may also draw a detailed sketch of the item.
  - iii. You can either print out your photographs/sketches, or you may create a Slides presentation of your photographs/sketches.
  - iv. Next to your photographs/sketches, please include the name of the collected item and a brief definition of the Biology term.
  - v. YOU CAN BE CREATIVE. If you choose an item that is internal to a plant or animal, like the term "phloem," you cannot submit a photograph/sketch of the whole organism. You can, however, submit a close up of one part, and then explain under the photo what the item is and specifically where the item is in your specimen.
  - vi. NATURAL ITEMS ONLY. All items must be from something you have found or normally see in nature. Take a walk around your yard, neighborhood, and/or one of the many city or state parks in the area to find these items. Please do NOT spend any money!
- b. **5pts** - Use the iNaturalist app to identify at least 10 plants, animals and fungi anywhere you are.
- i. Join the "Nature of Brandeis HS" project  
[https://www.inaturalist.org/observations?project\\_id=84977](https://www.inaturalist.org/observations?project_id=84977)
  - ii. Add your observations to the project.
3. **10pts** - Watch a documentary. Make at least 5 connections between topics discussed in the documentary and the AP Biology Units list on pages 29 and 30 in the [CED](#).
- a. The Gene: An Intimate History by Ken Burns
    - i. [Amazon](#)
    - ii. [PBS](#)
    - iii. [iTunes](#)
  - b. [Your Inner Fish](#)
  - c. [Your Inner Reptile](#)
  - d. [Your Inner Monkey](#)
  - e. [The Serengeti Rules](#)