

# AP Biology Summer Assignment, 2018-2019

Welcome to AP Biology ☺ We have a great year ahead! The summer assignment is designed to help you get to know the course better expose you to the topics ahead. Have fun, and please don't stress about this! The idea is for you to enjoy your summers (you deserve it!) and have a little review before we return! ☺ - Mrs. McCune

## 3 Steps to picking up your summer assignment:

1. Check in to the roster
2. Sign up for your group/ pick up this packet
3. Sign out a book on the roster

## AP Biology challenges you to address your prior knowledge and study techniques to develop the most effective strategies for your success

- You will write a letter of introduction to Mrs. McCune via Schoology (or [athensapbiology@gmail.com](mailto:athensapbiology@gmail.com)) by **Wednesday, June 13<sup>th</sup>**. Please remember you're writing a letter that's making your first impression, so check for grammar/spelling and appropriate phrasing before sending. It will include the following:

**Subject Line:** AP Biology 2018-2019 and your name (example: AP Biology 2018-2019: Andrea McCune)

### Body:

Greeting (Hello, Dear Mrs. McCune, etc.)

1. Introduce yourself: what's your name? Do you have a nickname that you go by? What grade are you in?
2. Courses:
  - a. What science classes have you taken so far, and who was your teacher for them? What was your final grade for the course? (Be aware: AP Chem and GBBE are highly recommended before AP Bio)
  - b. What classes are you planning to take next year (both science and otherwise)?
  - c. How many AP classes have you taken before this year? How many have you passed with a 3 or higher?
  - d. What subject area(s) are you most interested in continuing in college?
  - e. Is there anything that you've liked or disliked about your earlier biology classes?
3. Yourself:
  - a. What do you like to do (Hobbies, sports, music, interests, etc.)?
  - b. Tell me about your family (siblings? Who do you live with? How would you describe them?)
  - c. Do you have a job or plan on getting a job next year? What kind?
4. Learning:
  - a. What are your personal strengths when it comes to learning new material?
  - b. What causes you to struggle in a course? How do you address that challenge?
  - c. What is the most effective way you've found to study for a test?
  - d. How would you describe yourself as a learner?
  - e. How would you describe yourself as a team or group member?
5. AP Bio:
  - a. What are you looking forward to most in AP Biology?
  - b. What are you most anxious about in AP Biology this upcoming year?
  - c. **Why are you taking AP Biology? What do you hope to accomplish/gain from this course?**

Please attach a picture of yourself where your face is clearly seen (hopefully doing something you love!)

Closing, your name

## AP Biology challenges you to work well independently AND to work collaboratively with peers

- You will choose a group of 3-4 to work on this assignment. You may divide up the work as you see fit; however, each member is responsible for not only completing their part, but also proofreading their team members' work as well. The **score for this assignment will be determined based upon group success.**
- If you will be traveling this summer (awesome!), be sure that your group members are aware, you can be in email contact with your group members, and you've submitted your work to the presentation prior to the due dates.
- If you have a group member who is not responding to your attempts to contact them by August, please let Mrs. McCune know as soon as possible ([athensapbiology@gmail.com](mailto:athensapbiology@gmail.com))

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## AP Biology challenges you to tie in learning with one or more of the Big Ideas

- There are 4 Big Ideas of learning in this course (listed on the back side) – throughout the year, you will continually connect your learning with one or more of the Big Ideas
- Your group must complete *each* of the following challenges *per Big Idea* in a **Google Sheets or OneDrive presentation**

## AP Biology challenges you to back up your learning with relevant examples

- Lecture, reading, and activities throughout the year will use examples of recent research in the fields of Biology
- Many AP Biology students express they are interested in research in one or more topics of Biology for career or opportunity in college – here's your chance to figure out which sources are reliable
- For each of the 4 Big Ideas, find and summarize one unique news article per group member (e.g., 3 total per Big Idea if 3 group members) that focuses on one of the themes of that Big Idea
- Summary must be in your own words, no longer than one slide per summary
- The source article must be linked and cited in MLA format, from no earlier than the year 2010
- Suggestions for places to use for research: nytimes.com, apnews.com, wsj.com, npr.org – be sure to avoid editorials!

## AP Biology challenges you to connect current learning with past knowledge

- You may have taken your last Bio class over a year ago – but, everyone needs to review information before “diving in” in September (can you tell Mrs. McCune is excited to spend some time by the water this summer? 😊)
- Each group member is responsible for creating one unique multiple-choice question per Big idea that demonstrates their understanding of one topic of that Big Idea
- *Each question should have 4 choices, and an explanation for the correct (and incorrect) answer choices following the question*
- This question should be challenging, and require the test-taker to apply their knowledge of the material to answer the question instead of just knowing the definition of a term or process – use the end-of-chapter assessments to guide you in the level of challenge that is expected for these questions, but come up with your own material!
- It is ok to use a diagram or portion of a diagram for your question, but all diagrams must be self-made

## AP Biology challenges you to create models based on your learning

- Throughout the year, you will be creating models to explain processes that are being learned in class
- Instead of creating a model this time, you will be brainstorming and taking selfies with natural items that represent topics within the Big Ideas, and explaining how those items connect to those topics
- For each topic, you must take a picture (at least one group member must be in each picture) of you with that natural item, then explain how it connects to that portion of the Big Ideas (see topics under Big Ideas) on the same slide
- Your examples may be creative! The explanation of the connection is the important part here.
- For example, you might choose to take a picture of yourselves observing squirrels fighting over acorns, and explain how that showcases competition among individuals in a population

## AP Biology challenges you to do your very best work

- All challenges are... well... challenging! So, when you have questions, please ask! You may choose to submit ONE of the Big Ideas (Research, MC Questions, and Pictures) to Mrs. McCune for comments (by 12 noon on Monday, 8/13) before submitting all of them for a grade (by 12 noon on Monday, 8/20).
- Be aware: Mrs. McCune actively peruses online and print review materials, and has kept all work from prior students. It will be obvious to her if you copy materials from another source and claim it as your own – that is plagiarism, will result in complete loss of points for this assignment, and is not a great way to start the year – complete your own work and you'll do fine!
- You have a book to use to help you review topics within your Big Ideas!
- All students in the class are challenged with the same assignment – you are responsible for working with your teammates, and should not collaborate outside of your group for this work. Remember: you're setting an impression for what can be expected from your work ethic throughout the year – you don't need to go to an extreme with this, but it should be something you feel good about submitting. 😊

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## **Due Dates:**

- Letter of Introduction – By Wednesday, June 13<sup>th</sup> at 12 noon to [athensapbiology@gmail.com](mailto:athensapbiology@gmail.com)
- Optional - By Monday, August 13<sup>th</sup> at 12 noon: Submit a completed Big Idea to Mrs. McCune for feedback to [athensapbiology@gmail.com](mailto:athensapbiology@gmail.com)
- Required – By Monday, August 20<sup>th</sup> at 12 noon: Submit all 4 Big Ideas for your group
  - Should include:
    - All group member names on a title slide
    - All 4 Big Ideas completed, for each:
      - 1 summary of recent research per member (be sure to cite/link sources!)
      - 1 challenging MC Question per member, with explanations
      - Selfies + explanations of items that connect to topics under Big Ideas
  - Late work will be penalized – be sure to have everything completed online for your group!
  - Email to [athensapbiology@gmail.com](mailto:athensapbiology@gmail.com) – be sure all permissions are given to view and/or edit!
- Required – By the first day of school, read Chapters 1+2 in your book! We'll start with Chapter 2 and Biochemistry right away!

**Big Idea 1** - The process of evolution drives the diversity and unity of life.

- Change in genetic makeup over time is evolution
- Organisms are linked by lines of descent through common ancestry
- Life continues to evolve within a changing environment

**Big Idea 2** - Biological systems utilize energy and molecular building blocks to grow, to reproduce, and to maintain homeostasis.

- Cell growth and division are explained through the processes of mitosis and meiosis
- Growth, reproduction, and maintaining organization of living systems require energy and matter.
- Cells must use food to obtain energy and matter in Cellular Respiration and/or Photosynthesis
- Growth and homeostasis of a biological system are influenced by changes in the system's environment.

**Big Idea 3** - Living systems store, retrieve, transmit, and respond to information essential to life processes.

- DNA transcription (to mRNA) and mRNA translation (to proteins)
- Probability of gene inheritance
- Effects of mutations in genome
- Forms of Biotechnology and its uses in modern-day genetic research

**Big Idea 4** - Biological systems interact, and these interactions possess complex properties.

- Transport of materials across cell membrane
- Role of enzymes in the cell
- Signaling within and between cells
- Interaction of species within an ecosystem includes competition and cooperation

## **Note:**

- **Big Ideas are underlined**
  - Each Big Idea requires per individual:
    - 1 summary of recent research
    - 1 challenging MC question with explanations
    - Be sure each individual is identified for the work they do!
- **Topics are bulleted**
  - Each Big Idea topic requires per group:

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- Selfies + explanations