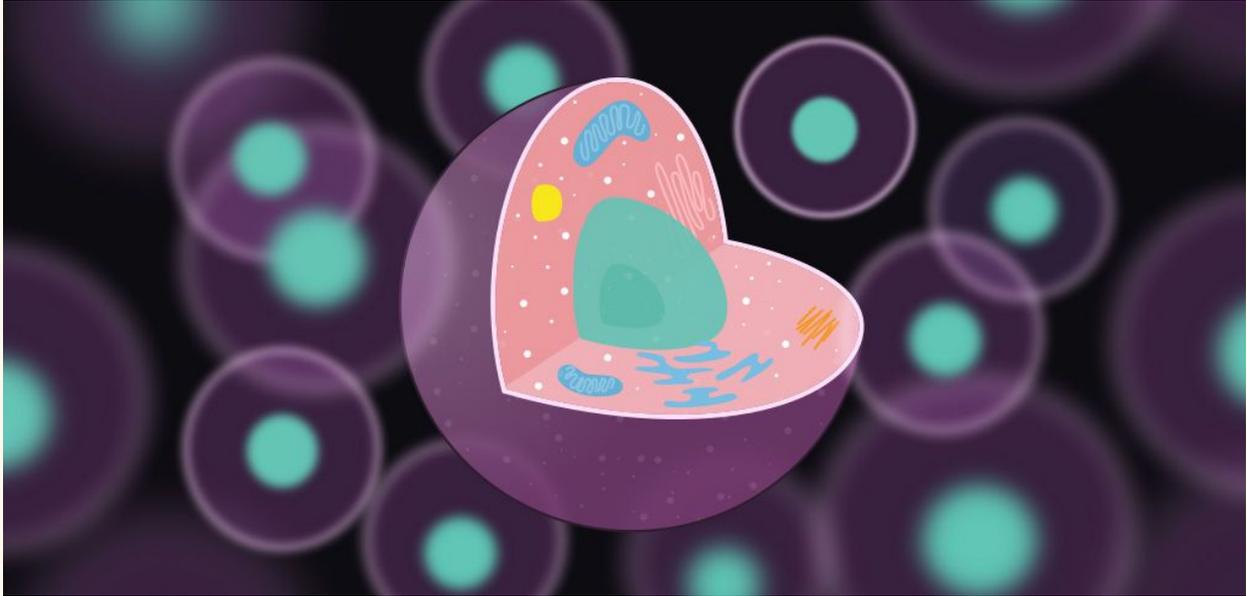


Summer Work



INTRODUCTION

Welcome to AP Biology! We are so glad you've decided to take this class and we really look forward to a year during which you get to challenge yourself in a college level class and push your science skills and understanding further than ever before! Biology is an exciting science because it is changing right before our eyes - each year brings exciting advances in the understanding of how our cells work at the molecular level. So what we have taught students in the past will have to be tweaked for you, and that makes us happy as teachers. We hope you dive right in and appreciate what the class has to offer.

That said, it is a tough class with a heavy workload. You will be asked to read every night, and come prepared to understand lectures, labs, and class work. You will be asked to do a lot of critical thinking and data analysis, not just memorization of facts. You will be invited to stretch your imagination and think creatively as we make connections between a tiny molecule's structure/function and the Big Ideas that drive AP Biology and explain....LIFE!

Summer Work:

Please do any work you are asked typed and save to your Google Drive.

To give you a sense of the foundations of AP Biology, this summer we would like you to do a few things.

1. **Biology in the news:** Please find 2 articles about science that is in the news. It must be about biology, but biology is BIG! Medicine, Psychology, Human Behavior, Inter-Species interactions and anything that is about something alive in any way, shape or form is probably considered biology. There is (almost) something new reported everyday! Visit the [New York Times Science](#), [Washington Post Science](#), [Scientific American](#), [Pacific Standard](#) (my favorite) or [many other sources](#) if you need ideas. Any article you read must be over 500 words. Something you heard listening to the radio or a podcast counts as well. (Check out [RadioLab](#)!) After you find your two articles, write a summary of them and be ready to share with your classmates why those articles are interesting, something new you learned and at least one question it leaves you with. **Please turn this typed synopsis in on the first day of class and have it saved to your drive.**

2. **AP Biology Practices:** During the course of the summer, please visit this website:

<http://www.bozemanscience.com/ap-biology>

Scroll down to “AP Biology Practices”. There are seven videos in this section. Watch each of them and write a written reflection **on each one**. Each reflection should not be more than 100 words and can include anything from one new or surprising thing you learned, any anxiety about the topic, or something about the topic that excites you. **Please plan to turn in these written reflections in on the first day of class.**

3. **The Big Ideas and learning objectives:** Please visit this website:

https://www.biologycorner.com/APbiology/big_ideas.html

Go through each of the four Big Ideas in AP Biology. Take some time to consider the “Sample Learning Objectives” for each Big Idea (on the right side of the screen). This will give you a sense of the types of questions we will be asking each unit. We hope you come to class

understanding that simply memorizing facts and repeating them does not allow you to develop a full understanding of the concepts in each chapter. This activity will hopefully introduce you to our expectations of your level of understanding. **There is nothing to turn in for this activity.**

4. **Chemistry:** Please visit this website:

<https://www.khanacademy.org/science/biology/chemistry--of-life/elements-and-atoms/v/elements-and-atoms?modal=1>

You will be expected to recall the basics of chemistry you've already learned. Our aim is never to bore you with a subject you feel you've already learned, but rather to convince you that chemistry is a building block of biology, and a solid appreciation of atomic structure leads to a deeper understanding of some complicated concepts. For example, if you don't understand the polarity of the water molecule, you will find it tough to appreciate why proteins fold the way they do, or why certain compartments of the cells are acidic or basic. Chemistry explains biology, so it's a good idea to walk into class on day one understanding the basics as explained in the video above. Please also watch this video on water:

<https://www.youtube.com/watch?v=3jwAGWky98c>

Please answer these questions and **turn the answers in on the first day of class:**

- 1) Describe why water is considered a polar molecule.
- 2) Draw a water molecule. Label the hydrogens, oxygen, and which part of the molecule has a relative positive charge and which has a relative negative charge.
- 3) Draw two water molecules
- 4) List the properties of water discussed in the video, and why polarity explains each of these properties.

Finally, watch this video:

https://www.youtube.com/watch?v=8nESpZ_rY3A

This video has a lot of information about carbon. It may seem a little dry at times, but pay attention because it will be helpful to you as we study the molecules that make up life. **There is nothing to turn in for this activity.**

AP Biology Exam day is Monday, May 11, 2020.

You will receive a full syllabus when school starts. Good luck, and

enjoy your summer!