

AP Biology 2015-16 Summer Assignment

Due August 2, 2016!

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Welcome to AP Biology 2016-2017!

As you are all well aware, AP classes are demanding of time and energy. Our curriculum involves eight units. The eight units include the following: introduction and review, cells, metabolism, genetics, evolution, plant & animal diversity, body systems, and ecology. Our curriculum is divided into four major themes or “big ideas” which are outlined in the following chart:

<p>Big Idea #1 Evolution The process of evolution drives the diversity & unity of life.</p>	<p>Big Idea #2 Energy Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis</p>
<p>Big Idea #3 Living Systems Living systems store, retrieve, transmit and respond to information essential to life processes.</p>	<p>Big Idea #4 Interactions Biological systems interact and these systems and their interactions possess complex properties.</p>

It is imperative that you are organized in this class because there is SO MUCH information. Your summer assignment involves reading selected chapters, completing vocabulary cards, setting up a notebook, and watching video podcasts on particular topics. Your notebook will serve as the single most important study guide aside from the textbook in preparation for the AP Exam.

This course will involve more time and effort than some of your other courses and the textbook is an advanced one which will require excellent reading and note taking skills. This course may require some additional after school commitments for those days when the class does not meet or a lab activity cannot be completed during class time. Additionally, over the course of the year, you will be required to attend 2 out of 3 AP Biology Saturday study sessions.

In an effort to provide an opportunity for students to access all of the content and to lessen the workload during the school year, I have assigned several summer/pre-school year assignments to be completed by each student. These assignments are listed below.

I am very excited about this class. It may seem overwhelming in the beginning, but once we find our niche and settle into a routine, it will be very enjoyable and you will learn tons of information. Do not wait until the last minute to do this assignment. Start now and do a little each week. Have a great summer and let me know if I can help you!!

Sincerely,

Beth Loveless

The Assignment:

Assignment Checklist: Please initial next to each task as it is completed. This will be submitted along with the chapter reading notes, chapter questions, and notebook.

- ___ 1. Join the Summer AP Biology Edmodo page. Use this address: <https://edmo.do/g/yc3nzb>
(The group code is **yc3nzb**)

 - ___ 2. Join the class Remind list: To receive messages via text, text **@apbio16sum to 81010**
 - There is a new function with Remind that will allow you to send me a text if you need to ask me a question, etc. (you can always send me an email at kloveless@jasper.k12.al.us as well).
 - I plan to check my email at least 3x per week during the summer so please do not hesitate to contact me with questions.

 - ___ 3. Join the class EdPuzzle page:
 - Go to edpuzzle.com & log in or create a new student account (you may log in using your Edmodo). Please enter your name as: Last Name, First Name (example: Loveless, Beth).
 - Your class join code is: **culusem** (*it is case-sensitive*)
 - I will be posting the Bozeman videos that are part of your assignment in EdPuzzle with questions for you to answer embedded in the videos. This website/app will allow me to see what percentage of the videos you have watched and that you have been paying attention to the information presented. You are expected to watch the videos completely through & answer all questions embedded. (I should have the first videos uploaded in the next couple of weeks.)
 - Note: Please do not go to EdPuzzle from Edmodo, as for some reason it will not record your completed activities

 - ___ 4. Finally, you will be reading sections of the textbook & watching a series of Bozeman video podcasts related to each topic. I will be posting these videos to EdPuzzle for you to complete (see information above).
 - Read each chapter in Unit 1 of the Biology in Focus Textbook (Chapters 1-4) and answer the questions/prompts listed below as you read (***neatly handwritten, not typed***). Take additional notes as you read that you feel may benefit you for the first test. You may use your own style of note-taking, but must be your own original work. Include definitions of terms, section headings, and copy down any scientific processes. My suggestion is that you include 10-20 bulleted summary points from each chapter. Labeled diagrams should be included when appropriate. These will be turned in before school begins and must be in my teacher mailbox no later than 3:00 on **August 2, 2016**.
 - There will be an open-note test on these chapters during **the first week of class** (After checking your notes/answers for completeness, I will give them back to you). Remember, the effort you put into your reading & note-taking will be reflected on your test, so take good notes!
 - The information needed to complete this reading/note-taking assignment is found in Campbell, Biology in Focus AP Biology. I will place a PDF version of the textbook in the Edmodo share folder for you to read electronically. (Alternatively, you can come by with a thumb drive & I can share it with you that way as well). The chapters are as follows:
 - Chapter 1: Introduction: Evolution & the Foundations of Biology
 - Chapter 2: The Chemical Context of Life
 - Chapter 3: Carbon & the Molecular Diversity of Life
 - Chapter 4: A Tour of the Cell
- **Reminder: you will have a test on these 4 chapters during the first week of the new school year. The test will consist of multiple choice and free response questions.**
 - **To help you, you may want to visit the Campbell Biology website for practice MC questions at:**
http://media.pearsoncmg.com/bc/bc_campbell_biology_8/cumulative/index.html
 - All assignments will be graded and recorded as a major part of your nine-weeks grade in AP Biology. Unless previously discussed with the instructor, LATE ASSIGNMENTS ARE ONLY ACCEPTED ONE CLASS PERIOD LATE AND WILL ONLY RECEIVE HALF-CREDIT.

READING ASSIGNMENT INFORMATION:

Read chapters 1- 4 in AP Biology Text Book, "Biology in Focus" and complete assignment below. These are introductory chapters, which deal with basic chemistry and cell structure. It is important that you read the text and study all the associated visuals and diagrams – this will help you get a deeper understanding of the concepts. Questions and other resources to help you understand the topics are given in the attachment

CHAPTER 1 NOTES ON:

1. Summarize the 5 unifying themes of biology (pgs. 2 – 10). Also include a discussion on why evolution is the core theme.
2. Compare inductive and deductive reasoning.
3. In the case study "Investigating Coat coloration in Mouse Populations", identify the key features of scientific inquiry (question, hypothesis, observations, experimental setup – variables and controls, etc.)
4. Complete Scientific Skills Exercise, - write answers only. (pg. 15)
5. COMPLETE "TEST YOUR UNDERSTANDING " questions – (Questions 1 – 6) check answers for multiple-choice questions in the answer section – no need to write. Write the open ended answers (Questions 7 – 10) along with the notes.

CHAPTER 2 NOTES ON:

1. Explain the energy levels of an atom's electron (page 22 and figure 2.5).
2. Briefly explain the different types of chemical bonds.
3. Explain how the unique chemical and physical properties of water make life on earth possible? (Should include explanation of hydrogen bonding and each property)
4. Complete Scientific Skills Exercise - write answers only. (pg. 15)
5. COMPLETE "TEST YOUR UNDERSTANDING " questions – (Questions 1 – 8) check answers for multiple-choice questions in the answer section – no need to write. Write the open ended answers (Questions 9 – 12) along with the notes.
6. Create Vocab cards: Define/explain ALL TERMS IN **BOLD**

CHAPTER 3 NOTES ON:

1. Explain why carbon atoms form diverse molecules.
2. How do cells synthesize and breakdown macromolecules?
3. Write notes on each of the macromolecules.
4. Complete Scientific Skills Exercise –write answers only. (pg. 15)
5. COMPLETE "TEST YOUR UNDERSTANDING " questions – (Questions 1 – 8) check answers for multiple-choice questions in the answer section – no need to write. Write the open-ended answers (Questions 9 – 12) along with the notes.
6. Create Vocab cards: Define/explain ALL TERMS IN **BOLD**

CHAPTER 4 NOTES ON:

1. Describe the different types of microscopes. How do microscopy and biochemistry complement each other to reveal cell structure and function?
2. Compare prokaryotic and eukaryotic cells.
3. Relationship between surface area and volume in cells
4. Explain how compartmental organization of a eukaryotic cell contributes to its biochemical functioning.
5. Describe the structure & function of the nucleus and ribosome. Describe the relationship between the nucleus & ribosome.
6. What is the endomembrane system? Describe each of its components and explain their functions.
7. Explain the structure and functions of mitochondria, chloroplasts and peroxisomes.
8. Explain the endosymbiont theory.
9. Explain the structure/components that make up the cytoskeleton and their functions.
10. Explain how the extra cellular components and connections help coordinate cellular activity.
11. Describe the differences between plant and animal cells.
12. Explain how the cell is a "living unit greater than the sum of its parts".
13. Complete Scientific Skills Exercise - write answers only. (pg. 74)
14. COMPLETE "TEST YOUR UNDERSTANDING " questions – (Questions 1 – 7) check answers for multiple-choice questions in the answer section – no need to write. Write the openended answers (Questions 8 – 11) along with the notes.
15. Create Vocab cards: Define/explain ALL TERMS IN **BOLD**

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- The assignments will require internet access to complete them. If you do not have access, you may come to Walker High School during the hours of summer school and use the computers in Room 30 (per Mrs. Crump). Summer school hours are posted in the front office.
- You will need to sign up for these groups:
 - Edmodo - Group Code: **yc3nzb**
 - Edpuzzle.com - Group Code: **culusem**
 - Remind - Text **@apbio16sum** to **81010**