AP Biology Summer Assignment 2018

Welcome to AP Biology! This is a college level course; it will be rigorous and demands your time both in and out of the classroom. Your work for this course will begin during the summer to ensure that everyone starts the class with the same prerequisite knowledge, and will include three separate assignments. All three assignments are required and must be turned in on Day 1 in the Fall for continued enrollment in AP Biology. Don't wait until the end of the summer to start this assignment. Start early, enjoy your summer, and look forward to an exciting year in AP Biology.

Assignment 1 –21 Questions & Notes

The first assignment is based entirely on your textbook. It requires reading certain sections of the textbook and taking notes as well as answering specific questions, and will help familiarize you with your text.

Assignment 2 – Mastering Biology

Use the attached instructions to register for Mastering Biology and complete the summer assignment. The estimated time to complete this assignment is 5 hours. Use your school email for your login, and your school ID number for your password. DO NOT lose your login information! If the first access code doesn't work, use the second provided instead.

Assignment 3 – Plagiarism Certificate

Complete the plagiarism tutorial and take the certification test from Indiana University. Save and record your unique test ID number for verification. This should take 1 hour. https://www.indiana.edu/~academy/firstPrinciples/index.html

Assignment 1 Details

Required text:

Campbell's Biology in Focus. Check it out from the front office to work on this assignment over the summer.

General procedures for taking notes on the text:

1. Read the Key Concepts at the beginning of each chapter. The list of Key Concepts introduces the big ideas covered in the chapter.
2. Leaf through the chapter slowly looking at headings and sub-headings, as well as bolded terms. Look up and define unknown vocabulary terms in your notebook by using the glossary.
3. Look carefully at illustrations and read their captions. The old adage of a picture being worth a thousand words holds true for the Campbell text.
4. Read the chapter. Take notes as you read. Be sure to organize your notes by subtopic and include diagrams.
5. Optional: After each concept, answer Concept Check questions. They are good examples of the kinds of questions that will be on the AP Exam. Check your answers in Appendix A.
6. Optional: Test your understanding of the chapter by completing the Test Your Understanding questions at the end of the chapter. Check your answers in Appendix A.

Key terms for answering free response questions:

Analyze - show relationships between events; explain

Compare - discuss similarities and differences

Contrast - discuss points of difference or divergence between two or more things

Describe - give a detailed account

Design - create an experiment and convey its ideas

Explain - clarify; tell the meaning; use evidence/reasoning

Predict - tell what you expect to happen when conditions change

Justify - explain why a response is reasonable

Day 1 Test for AP Biology:

It is not a placement test. It will cover the concepts in the table on the back of this sheet. You will not be kicked out of class if you do poorly, but this will be your first test grade. Be prepared to take the test on the first day of class.

- Read each of the stated sections thoroughly for understanding.
- Take notes per the general procedures listed on the front page
- Answer the questions below.
- *This assignment is due the first day of class and it needs to be done well.*
- Notes must be done by hand and in your own handwriting. *

Read and take notes on these sections	**Topic**	**Answer These Specific Questions in Complete Sentences (in addition to taking notes on the listed sections)**
1.1	Themes	1. For each theme, describe an example not provided in the text.
1.2	Evolution	2. Evolution is considered the "unifying theory of biology". Explain this statement.
1.3	Inquiry	3. Compare and contrast inductive and deductive reasoning. 4. Provide one question that can be addressed by science and one that cannot. 5. Compare and contrast "scientific theory", "theory" in everyday use, and "hypothesis".
2.1-2.4	Chemical Bonding	6. Explain how the structure of an atom relates to the properties of the element. 7. Define electronegativity.
2.5	Properties of Water	8. How does electronegativity affect interactions between water molecules? 9. What are the four emergent properties of water that contribute to Earth's suitability for life? 10. Describe how different types of solutes dissolve in water.
3.2-3.6	Structure and function of biomolecules	11. What is the fundamental basis for the differences among carbohydrates, proteins, and nucleic acid? 12. Compare the composition, structure, and function of starch and cellulose. What role do starch and cellulose play in the human body? 13. Why are lipids not considered to be polymers? 14. Proteins are the most structurally and functionally diverse class of biological molecules. Explain the basis for this diversity. 15. What role does complementary base pairing play in the functions of nucleic acids?
4.2-4.7	Parts of the cell and their functions	16. Draw two eukaryotic cells (one plant and one animal) and one prokaryotic cell, labeling and describing the function of each structure.
6.1-6.5	Biochemical reactions	17. Compare and contrast endergonic and exergonic reactions. 18. Explain the meaning of each component in the equation for the change in free energy of a spontaneous chemical reaction. Why are spontaneous reactions important in the metabolism of a cell? 19. How does ATP transfer energy from exergonic to endergonic reactions in the cell? 20. Compare and contrast an exergonic reaction with and without an enzyme.
7.1 & 8.1	Catabolic pathways and redox reactions	21. Explain how photosynthesis and respiration are redox reactions.

Turn in notes and answers to questions on first day of class for a grade. **Expect to take a test on this material on the first day of class.**

*Students with a handwriting accommodation may type notes and print them.

Additional Resources

You may feel the need to do some additional preparation for AP Biology. Taking an introductory biology course will better prepare you for the depth of content and laboratory research we will be reaching this school year. Here are three courses I recommend to students entering AP Biology:

1. Edx MIT Introduction to Biology https://www.edx.org/course/introduction-biology-secret-life-mitx-7-00x-5#!

This is a full-length introduction to Biology course provided for free by MIT. For a fee, you can also receive a certificate showing mastery of the content. This does not cover everything we will learn in AP Biology but addresses many of the more challenging concepts.

2. FlinnPREP AP Biology https://www.flinnsci.com/flinnprep-ap-biology-online-student-prep-course-individual-license/el2000/

This is a course specifically designed to prepare you for AP Biology. It is shorter and less thorough than option 1. It is not free, however.

3. Khan Academy https://www.khanacademy.org/science/biology

This is a free biology course through Khan Academy. There is no way to gain certification, and is probably best for students who are good at structuring their own study/time.

First, make sure you have these 3 things…

Email: You'll get some important emails from your instructor at this address.

Course ID: Ask your instructor for your Course ID!

Access code or credit card: An access code card may be packaged with your new book or may be sold by itself at your bookstore. Otherwise, you can buy instant access with a credit card or PayPal account during registration.

Next, get registered and join your course!

1. Go to **www.masteringbiology.com**.
2. Under Register Now, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now.**
4. Enter your instructor's Course ID (it looks something like MBprofessor12345), and choose **Continue**.
5. Enter your existing Pearson account **username** and **password** and select **Sign in**.
   You have an account if you have ever used a Pearson MyLab & Mastering product, such as MyMathLab, MyITLab, MySpanishLab, or MasteringChemistry.
   - If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
   - Enter the access code that came with your textbook or was purchased separately from the bookstore.
   - Buy access using a credit card or PayPal account.
7. From the "You're Done!" page, select **Go to My Courses**.
8. Select **Yes** and enter your Course ID to join your course. Click **Continue**.
9. If asked, enter your Student ID according to the instructions provided and click **Continue**.
   That's it! You should see the Course Home page for the course.

To sign in later:

1. Go to **www.masteringbiology.com** and select **Sign In.**
2. Enter your Pearson account **username** and **password** from registration, and select **Sign In.**
   If you forgot your username or password, select **Forgot your username or password?**

To join another course for the same textbook (no additional purchase needed):

1. **Sign in** with the **username** and **password** that you specified during registration.
2. Click **My Courses** in the upper left and then choose **Join Another Course**.
3. Enter the Course ID from your instructor and click **Continue.**
4. If asked, enter your Student ID according to the instructions provided and click **Continue**.
5. To switch courses, click **My Courses** and select a course from the **Switch to a Different Course** menu.

Couse ID: DANAEETESLA1819

Access codes: SSNAST-THUNK-SYNCH-ISSUE-NADIR-THRAW OR

SSNAST-THUNK-SYNCH-ISSUE-NADIR-NJORD