

AP Biology 2021 Summer Assignment

Welcome to AP Biology!!! This course is designed to be the equivalent of a two-semester introductory biology course usually taken in the first year of college. It will be a rewarding experience as well as a challenging one. Throughout the course, you will become familiar with major recurring ideas that persist throughout all topics and materials. This summer assignment should give you the background knowledge necessary to make connections to throughout the year.

What do I need to do this summer?

- Sign up for the class remind by texting @e2h3h3 to phone number 81010. You will receive messages from me over the summer to encourage work on the summer assignment
- Join the google classroom for the class. The code is 5mro57o. (0 = zero in the code.) The summer assignment can also be found there.
- Complete the summer assignment.
- Have fun!!!

We have a small problem in AP Biology. Each year new advances in science are discovered, but the length of the school year (and when the AP Biology Test occurs) stays the same. What does this mean? Well, fortunately, two years ago the curriculum changed and all of the organ systems have been removed. Sadly, that still does not provide us with enough time to learn all of the necessary information in preparation for the AP Exam. In order to cover ALL of the material, you are responsible for reviewing the Chemistry section ON YOUR OWN!

On the pages that follow, you'll find detailed information of the three assignments that comprise your summer work for AP Biology. The first assignment is a chemistry review. The second assignment is related to becoming acquainted with the Science Practices that you'll be learning about this year in AP Biology.

Your video notes and chemistry review are due the 1st Friday of Research and Methods. All assignments will be graded and count toward your first quarter grade.

No late summer assignments will be accepted!! (Email Mrs. Hall for more details)

Included in this summer assignment description are the following documents:

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Assignment #1 – Chemistry Review	
• Vocabulary and chemistry problems	2
Assignment #2 – Video Notes	
• Instructions and Content Video List	4
• Rubric	4

CHEMISTRY REVIEW

Important Terms to Know, Define, Describe, or Give Examples of:

- | | | |
|---------------------|------------------------|------------------------------------|
| 1. Potential energy | 7. Atomic weight | 13. Polar |
| 2. Kinetic energy | 8. Isotope | 14. Nonpolar |
| 3. Neutrons | 9. Valence | 15. Cations |
| 4. Protons | 10. Structural formula | 16. Anions |
| 5. Electrons | 11. Molecular formula | 17. Hydrogen bond |
| 6. Atomic number | 12. Covalent bond | 18. How to read the periodic table |
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Chemistry review questions.

1. Define both potential energy and kinetic energy and give an example of each.
2. How do elements differ from compounds?
3. Name and define the subatomic particles that are part of an atom. How do they differ from each other? How do these differences contribute to the properties of atoms and molecules?
4. What is an atom? Give an example.
5. What is the difference between atomic number and atomic weight?
6. Determine the atomic number and atomic weight of the following:
 - a. Carbon
 - b. Oxygen
 - c. Nitrogen
 - d. Phosphorus
 - e. Calcium
 - f. Hydrogen
 - g. Selenium
 - h. Manganese
7. Where is the mass number put with respect to an element's symbol?
8. What does the subscript number to the left of an element's symbol indicate?
9. What is the difference between ^{12}C and ^{14}C ?
10. In #9 above, what is ^{14}C called?
11. What is a valence electron? Why are they important?

12. Draw a structural formula for the following:

- a. CH_4
- b. NaCl
- c. O_2
- d. H_2O

13. Which of the structures in #12 above have or can form:

- a. Single covalent bonds
- b. Ionic bonds
- c. Double covalent bonds
- d. Hydrogen bonds

14. Which of the structures in #12 above are:

- a. Polar? Why are they polar? How do you know they are polar?
- b. Nonpolar? Why and how do you know?

Assignment #2 -- Video Notes Due 1st Friday of Research and Methods Course

Watch the videos listed below and take **hand-written** notes on each of them. The notes should be your **original work**. EACH note sheet will be scored 0 to 5 based on completeness and thoroughness as shown in the rubric below. Note pages **will not** be accepted late nor will they be accepted typed.

#	Video Content	Link
1	The Nature of Science	https://tinyurl.com/hallnatureofsci
2	The Scientific Method	https://tinyurl.com/hallscimethod
3	CER (Claim-Evidence-Reasoning)	https://tinyurl.com/hallCER
4	AP Biology Science Practice 1 Model and Representations	https://tinyurl.com/hallsci1
5	AP Biology Science Practice 2 Using Mathematics Appropriately	https://tinyurl.com/hallsci20
6	AP Biology Science Practice 3 Formulate Questions	https://tinyurl.com/hallsci3
7	AP Biology Science Practice 4 Data Collection Strategies	https://tinyurl.com/hallsci4
8	AP Biology Science Practice 5 Analyze Data and Evaluate Evidence	https://tinyurl.com/hallsci5
9	AP Biology Science Practice 6 Scientific Explanations and Theories	https://tinyurl.com/hallsci6
10	AP Biology Science Practice 7 Connecting Knowledge	https://tinyurl.com/hallsci7

0 No credit	1-2 Below expectations	3-4 Complete	5 Exceeds expectations
No notes or copied from a peer	Several criteria are missing from entry	All criteria are met, but there's room for improvement within criteria OR one criterion is missing from entry	All criteria listed below are met or have been exceeded for each entry

What does work that “exceeds expectations” have?

- Each video's notes are on a different page.
- The video's title is written as it appears in the video on the top line of the paper.
- The notes are legibly written.
- Highlighting or colors are used to emphasize key points, new vocabulary, and/or important concepts.
- Examples are documented in some way when given in the video.
- Pictures, charts, or graphs are used to display details provided in the video.
- A summary of the video content is provided at the end of the notes. Please emphasize the summary in some way (title it, star it, highlight it, etc.)

Notes are to be *original work* and are not to be copied from a peer – these serve as a log of what you have learned from the video. Copying them from a peer and not watching the video does you no good. You will receive zero credit if you are found submitting work that is too closely aligned with a classmate's work.