

**AP Summer Assignment #3**  
**AP Inquisition**  
**Kemp**  
**AP Biology 2021-2021**

**DUE:** First day of class. Put in your AP Biology Portfolio

**ASSIGNMENT:** The word INQUISITION means a period of prolonged questioning or investigation. Description is very appropriate for this assignment.

You will need your AP Biology Textbook for this assignment. You will need to pick up your textbook from me before the end of this school year (June 14th) or pick it up in the main office by June 24th. The school building is open Monday through Thursday from 8:30am - 2pm for textbook pick up. This is a lengthy assignment ( as stated in description) so I suggest getting your textbook as soon as possible.

**You will need a hard copy of this assignment. You can print it out from Google Classroom BUT ALSO this assignment will be in your textbook when you pick that up from the main office. So you will receive a hard copy if you cannot print it out.**

The first three chapters of this book are a review from freshman year biology and will be covered during quarter 1 and part of quarter 2. In order to be best prepared and start strong for the beginning of the school year, put forth your best efforts on this assignment. This is a reading and writing assignment and must be placed in your AP Biology Portfolio under the tab: HOMEWORK ASSIGNMENTS. I will check or collect the first day of class.

**DIRECTIONS:**

- READ Chapters 1, 2 and 3 from your textbook: Campbell Biology in Focus/AP Edition and answer the questions attached for each chapter.
- All your answers must be in complete sentences or full paragraphs
- All your answers must include the appropriate science terminology and vocabulary when required. For example: instead of saying "living thing" I would expect you to say "organism".
- All questions must be completed to receive full credit. Any questions left unanswered will result in point deduction for this assignment
- You may handwrite or type your answers. Either way you must have a hard copy of this assignment placed in your AP Biology Portfolio by the first day of class. Please put under the tab HOMEWORK ASSIGNMENTS. I may collect the first day of class for grading.
- ***THIS PARTICULAR SUMMER ASSIGNMENT WILL BE VERY VALUABLE TO YOU as we progress through quarter 1. You will often reference this assignment and you may be able to use it as a reference for some assessments throughout the year.....so put forth your best efforts on this assignment.***

## **CHAPTER 1 REVIEW QUESTIONS**

1. What are emergent properties? Define and give two examples.
  
  
  
  
  
  
  
  
  
  
2. Review Figure 1.3. As you study the Levels of Biological Organization, write a brief description of each.

Biosphere

Ecosystem

Communities

Populations

Organisms

Organs and Organ Systems

Tissues

Cells

Organelles

Molecules

3. As we study AP biology will be organized around recurring themes. These themes are important and will be helpful throughout your study this entire year. They will help you see the big picture and organize your thinking. Make a **numbered** list below of these recurring themes **that** are presented throughout section 1.1 in the textbook. Give a brief description of each theme and provide one example that illustrates each theme.

4. Make a Venn diagram of Eukaryotic vs. Prokaryotic cells

5. Review and define the following terms:

DNA

Gene

Gene expression

Genome

6. Read carefully pages 7 - 16 and take notes below you feel are necessary (take notes in any style you wish). We will be studying these topics found on these pages more closely in class and I just want you to have some references for yourself.

## **CHAPTER 2 REVIEW QUESTIONS**

1. Define and give an example of the following terms:

matter:

element:

compound:

2. What four elements make up 96% of all living matter?

3. What is the difference between an *essential element* and a *trace element*?

4. Draw a model of an atom of Helium, showing the electron distribution, protons, neutrons, and atomic nucleus.

5. Draw a model of how Helium is presented on the Periodic Table. Be sure to include Atomic number, Element symbol, Atomic mass.

6. Define the following terms

neutron:

proton:

electron:

atomic mass:

atomic number:

isotope:

electron shells:

energy:

7. Look at the entry in the periodic table for Carbon.

What is the atomic mass?

What is the atomic number?

How many electrons does carbon have?

How many neutrons?

8. Define radioactive isotopes and provide one medical application that uses them.

9. What is Potential Energy?

10. Provide an explanation as to which has more potential energy in these pairs of examples.

Example 1: A child at the top of the slide vs. a child at the bottom of the slide

Example 2: An electron located in first energy shell vs. an electron located in third energy shell

Example 3: Water vs. Glucose

11. Read carefully pages 24 - 37 and take notes below you feel are necessary (take notes in any style you wish). We will be studying these topics found on these pages more closely in class and I just want you to have some references for yourself.

### **CHAPTER 3 REVIEW QUESTIONS**

1. How many valence electrons does carbon have
2. How many bonds can carbon form?
3. What type of bonds does carbon form with other elements?
4. Carbon chains can form carbon skeletons. See figure 3.4 and list, explain and provide a simple drawing of how these carbon skeletons vary:

5. What is a hydrocarbon? And also provide two examples of hydrocarbons.

6. Are hydrocarbons hydrophobic or hydrophilic? Explain your answer

7. Define Functional group:

8. There are seven chemical groups that are important in biological processes. For this course you will need to know and master understanding and recognizing these chemical groups. Fill in the chart below by referencing figure 3.5 in the textbook. WE WILL REFERENCE THIS CHART OFTEN THROUGHOUT THIS COURSE

CHEMICAL GROUP	COMPOUND NAME	EXAMPLE

10. Define Macromolecule

11. Define Polymer

12. Define Monomer

13. Monomers are connected in what type of reaction? Name the reaction and also describe what occurs during this reaction.

14. Polymers are converted to monomers in what type of reaction? Name the reaction and also describe what occurs during this reaction.

15. Beginning on page 45 is the end of section 3.2 "DIVERSITY OF POLYMERS" and the beginning of sections 3.3, 3.4, 3.5 and 3.6. There is a great deal of content throughout these sections. We will cover these sections in class in greater detail and depth. But for now read these sections carefully and construct your own notes with whatever information you feel is

valuable and in whatever style of note-taking you wish.