

# AP Biology Summer Assignment

Mrs. Degenaaars - 2022-2023

AP Biology is a rigorous course that is fast paced. We will be working together to learn to navigate the pace and content of the course to help you excel. This summer – it is vital that you spend a little time reviewing some of the basics so that we can get off to a running start in September. Please take this assignment seriously and do your best. This will be graded subjectively on your effort. I want you to stretch and do your best on this content.

**Reading** (pdf of book emailed to each student)

**Chapter 1** -(pages 2-23) Evolution, The Themes of Biology and Scientific Inquiry

**Chapter 2** – (pages 28-40) The Chemical Context of Life

## Assignment

- Prepare a printed document with this assignment for the first day of school. Answer the questions to the best of your ability. Try to make your answers individualized. You should work on this assignment independently.

### Questions for Chapter 1

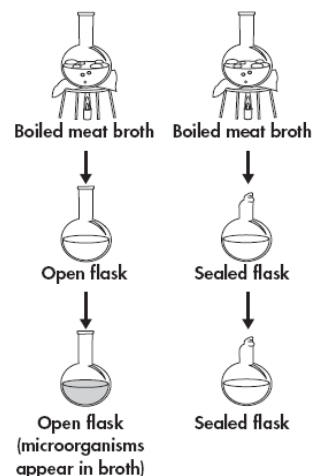
1. What are the levels of biological organization?
2. What is the difference between a eukaryote and a prokaryote?
3. How is DNA related to gene expression?
4. What is the difference between a consumer and a producer?
5. How is life classified and organized (OK to list)?
6. What does Darwin's Theory of Natural Selection mean?
7. What are the steps in the scientific process?
8. What is the difference between qualitative and quantitative data?
9. What is a hypothesis?
10. What is the difference between a dependent and an independent variable and a control?
11. What happens if the data from an experiment does not support a hypothesis?

### Problem Solving

In the late 1700s, Lazzaro Spallanzani designed a different experiment to show that life did not arise spontaneously from food. He inferred that some foods spoil because of growing populations of microorganisms. (see picture →)

What is the :

- a) Independent variable
- b) Dependent variable
- c) Control group



## Chapter 2 Questions

1. Draw a model of the element B (Boron).
  - a. Use the atomic number to determine the appropriate number of subatomic particles
  - b. Label the nucleus, protons, neutrons and electrons
2. What is the difference between an ionic and a covalent bond?
3. What does the word "polar" mean and how is it connected to electronegativity?
4. What are valance electrons?
5. Why are valance electrons so important to chemical bonding?
6. Write the electron configuration for S (sulfur)
7. Explain the difference between hydrogen bonds and van der Waals forces?