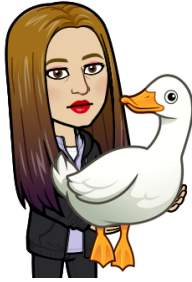


# Welcome to Honors Biology! 2023-2024

This year you are going to dive into learning about the world around you through 8 main anchors that are the core concepts of the Biology state Keystone Exam.



**Basic Biological Principles**  
**The Chemistry Basis of Life**  
**Bioenergetics**  
**Homeostasis and Transport**  
**Cell Growth and Reproduction**  
**Genetics**  
**Theory of Evolution**  
**Ecology**



The work you do this summer sets you up to be successful for the year ahead. This is an honors level course and you will have to work outside of class in order to be successful. This summer you are being asked to familiarize yourself with topics in chemistry, ecology, and body regulation in order to be prepared for the year. During your summer work, you should be taking notes. You can write your notes down on lined paper and can add pictures to the appropriate section of those notes. Make a copy of this document to edit. If you have questions, email [Mrs. Neal](#) or [Mrs. Felix](#)!

## Task 1:

One of the first topics you should be familiar with is the biological root word system of identification such as microscope or telescope. Many English words are created from Greek or Latin **root words**. Root words hold the most basic meaning of a word. Most root words need a prefix and/or suffix to create a stand-alone word — for example, the Latin root word *aud-* meaning “to hear or listen” is not a word on its own, but it is the root of words such as *audio*, *audible*, or *auditorium*. Some root words can be stand-alone words — for example, the Greek root word *scope* meaning “viewing instrument” in the words *microscope* and *telescope*. Micro means “small” and telo means “at the end of, far”.

Microscope - to view small objects

Telescope- to view objects far away

Each week (for about 6 weeks) you will be provided with a list of root words and have to review and learn those roots to help you understand the terms embedded into the biology curriculum. You need to review the [first list of terms](#) provided here for the quiz that will occur the first week of school. I would suggest making flash cards with the term on 1 side and the meaning on the back for the **BOLD TERMS ONLY**. The quiz is always going to take place on the last day of the week. Studying should occur all week long. Your flashcards can be electronic or just pieces of paper that you cut up. You just need to review them a few times until you know all 15-20 roots.


Example Flash Card:

Term: Bio	Meaning: Life
Term: ology	Meaning: To study

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## Task 2: Homeostasis

Watch the following video as an introduction to homeostasis

 Homeostasis

Read the following article on the topic of homeostasis :[Homeostasis Article](#)

**Take notes on the article and video. The notes can be used on a week 1 quiz on the topic.**

- What is homeostasis in general
- What is the difference between internal homeostasis and externally responding to the environment
- What are Feedback Loops ( negative and positive feedback loops )
- Examples of homeostasis
- Body responses to homeostatic changes


[Add a picture of your notes here](#)

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## Task 3: Chemistry Review

Watch the following videos to help you understand the basics of chemistry and **take notes** while watching each video. Feel free to pause the videos at any time

What are atoms  What Is An Atom?

What is so special about carbon  Carbon: The Element of Life

**Review and take notes** on the following terms using [this online resource](#) from Dummies.com.

This is a good resource to give you a quick overview of content you learned during middle school science.

- What is an ionic bond, covalent bonds, hydrogen bonds, Polarity

[Add a picture of your notes here](#)

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## Task 4: Macromolecules....

The course in which you are enrolled will teach you to break down food into 4 macronutrients that help you maintain homeostasis. Carbohydrates, lipids, proteins, and nucleic acids are the foundation of all of your meals and once digested will be chemically transformed in all sorts of ways to keep you alive and healthy.

Use the following websites to review the concept of macromolecules

- Reference websites:
  - o [Macromolecule Video Introduction](#)
  - o <https://www.khanacademy.org/science/biology/macromolecules/introduction-to-macromolecules/a/introduction-to-macromolecules>
- Fill out the table below for each macromolecule (carbohydrates, lipids, proteins, nucleic acids) with the following

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	Carbohydrates	Lipids	Proteins	Nucleic Acids
Elements				
Monomer				
Polymer				
Function				

## Task 4: Macromolecules Continued....

- Take a picture of 2 foods in your kitchen that are composed of **saccharides**.
- To which group of macromolecules do these foods belong?

[Add pictures to this document here](#)

- Take a picture of 2 foods in your kitchen that are composed of **amino acids**. One needs to be a plant and the other animal (unless you are a vegetarian household!).
- To which group of macromolecules do these foods belong?

[Add pictures to this document](#)

- Take a picture of 2 foods in your kitchen: one a **saturated fat** and one an **unsaturated fat**. Identify which sample is saturated and which is unsaturated.
- To which group of macromolecules do these foods belong?

[Add pictures to this document](#)

- Take a picture of a meal you consumed during the summer.
- For at least 3 parts of the meal identify what type of macromolecules you are consuming.

[Add pictures to this document](#)

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## Task 5: Ecosystem

This portion of the assignment will get you thinking about biology and learning and reviewing vocabulary as you go about your summer break. **Take a selfie of you in an ecosystem.** Paste that selfie here in this document.

[Add pictures to this document](#)

Come up with a Description for your ecosystem that should include: type of ecosystem; type of biome ecosystem is part of; location of ecosystem; 3 abiotic factors and 3 biotic factors.

AND

b) choose any 20 items from the list below. For each item define the term and take a selfie to go with that vocabulary term. You can add all definitions and selfies here in this document. Selfies should include you finding the item, your hand, etc. These have to be photos you personally took. Most items can be found outside, at the pet store, the zoo, or your backyard. Go on a nature walk and you could have this project finished. Don't repeat pictures.

### Vocabulary Options

1. commensalism
2. mutualism
3. parasitism
4. predator-prey relationship
5. a primary consumer
6. mimicry
7. secondary succession
8. a secondary consumer
9. a decomposer
10. a simple food chain
11. an abiotic factor
12. evidence of decomposition
13. evidence of human impact on an ecosystem
14. An organ
15. a community
16. Apex predator
17. Biotic
18. evidence for artificial selection
19. a plant adaptation
20. an animal adaptation
21. genetic variation within a population
22. genetically modified organism
23. an autotroph
24. Waterproofing, wax
25. A seed
26. a scavenger
27. a lichen
28. a producer
29. an amphibian
30. an animal track
31. algae
32. a reptile
33. transpiration
34. Kinetic energy
35. mutualism
36. Potential energy
37. bioluminescence
38. plant
39. a flower
40. a fungus
41. a keystone species
42. moss
43. An invasive species
44. a heterotroph
45. a population
46. Exoskeleton on a beetle
47. An animal
48. clone
49. protist
50. a reptile

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	Vocabulary term	Description	Selfie
1			
2			
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