Welcome to AP Biology 2024-2025

This summer you will delve into the world of biology! We will explore the topic of ecology to feed your appetite for the upcoming year of hard work and success.

This summer assignment has been designed for several purposes:

1. Introduce students to ecological principles including common vocabulary, concepts, and relationships that will be further examined in AP Biology.

2. Review basic population ecology mathematical calculations.

AP Biology is an exciting and rigorous college-level course that requires college quality work. There are so many topics to explore! We will cover (almost) the entire textbook. Some of the information will build on Honors Biology and other chapters will be completely new. Emphasis is placed on conceptual understanding, not just memorization of facts. This course requires a special commitment from you. Part of this commitment is the timely submission of your summer assignment. Completion of this summer assignment will allow us to get a jump start into AP Biology at the beginning of September. The summer assignment gives you the chance to demonstrate that you have the best intentions of giving this course your dedication, intelligence, and humor.

Time management is KEY. Starting in September, you will need to put in at least 3-5 hours of independent work each week to be successful in this course.

***There will be an exam on ecology the second week of class (not the first day of class).* We will be covering chapters 52-56 on this exam and you are highly encouraged to get a head start on these chapters over the summer. The summer organism project must be submitted on Google Classroom by the first day of your scheduled class. Late work will be half credit. Plagiarism, copying, and/or cheating will make it very difficult to pass your first unit exam.**

Please join my google classroom with code: 35qkj45 by June 15th!

If you have any questions, email me at sbarro.lauren@rvilleschools.org

Have a great summer!!!

Mrs. Sbarro

How to Pick Your Organism:

1. **Login to Google Classroom**
2. **Pick Your Organism from the Spreadsheet (Your organism choice is aligned with your last name)**
3. **First come, first serve**
4. **Write your name next to the organism that you are working on. If it is taken, you may choose the organism right above or below.**

AP Biology 2024-2025

DUE: 1st Day Of School (FALL) **SUMMER ASSIGNMENT:** Organism Research Project **Google Slides Presentation**
● **Cover Slide: Organism Name, Organism Picture, Your Full Name and Block** ● Slides 2-8 **Ecology** - **Responses** ***Research (Underlined titles)*** ● Slide 9 **ABSTRACT** ***Complete This Section At The End Of The Project*** ● **Last Slide*:* APA Formatted Sources**

Cover Slide: **YOUR ORGANISM**

- Scientific Name (*Genus species*) & Common Name
- KPCOFGS: Kingdom, Phylum, Class, Order, Family, Genus, Species
- Include a picture
- Your full name and class block

Ecology

- Biome with description
- What purpose does the organism fulfill in its environment? What would happen if it wasn't present in its environment?
- Create a food chain for this organism. Model the chain within an ecological pyramid level (include trophic level labels)

Cells (Structure & Organelles specific to the organism)

- Eukaryote or Prokaryote cell
    - Include a picture of the correct cell type and explain how you know it has this type of cell
- Details on all cell structures and organelles for your cell type
    - Choose 6 of the above organelles/structures and explain the function for each.

Energy

- Does your organism do aerobic respiration, anaerobic respiration, photosynthesis? More than one? Explain all that apply.
- Describe the chemistry of how it uses energy

Cell Division (Mitosis / Meiosis / Binary Fission)

- Asexual or sexual reproduction
    - Evolutionary benefits and disadvantages for this type of reproduction
- Number of chromosomes
- Life cycle duration
- Survivorship Curve
    - Explain all three curves and how your organism fits into its curve
- Population Growth:
    - Semelparity vs. Iteroparity
        - Compare both & explain which one pertains to your organism

- K vs R Selection
  - Compare both & explain which one pertains to your organism (Note: Organism lie within a spectrum of K to R so it could make sense if your organism has some in-between characteristics)

Evolutionary Advantages

- Evolution acts upon the phenotype of an organism which can result in organism adaptations that increase their chances of survival. Identify 5 phenotypes and the advantage(s) for each phenotype.

Communication

- How does it communicate with other organisms?
  - Chemicals, pheromones, audible, physical, visual, coloration, etc…

Responses

- What are Taxic Responses (animal) or Tropisms (plant)?
- How does your organism respond to their environment?
  - Identify 3 taxic or tropism responses.

ABSTRACT (Separate Slide)- Summary of Report. 1 paragraph ONLY, and this will be the LAST slide of your report.

TITLE Must be approximately 10 words long and should easily convey what your report finding(s) are.

I **Introduction**- (1-2 sentences)- Introduce your organism and its niche.

M **Methods** (1-2 Sentences)- Method of survival.

R **Results-** (1-2 sentences)- What evidence supports its continued survival?

Example: Because of "M" then "R" occurs, which increases survival.

D **Discussion-** (1 sentence) Convince the reader of your finding(s).

Make sure your project has a relevant theme and is free of grammatical errors! This project should show AP level work. Please email me with any questions.