AP Biology Summer Work FLHS 2026-27

Hello AP Bio student,

Please note that the summer assignment is important as it is the first summative assignment of the school year (50 points). It is designed to help inspire, build foundational knowledge, sharpen critical thinking, and ease into the rigor of college-level coursework before the school year begins.

Completion of the summer assignment sets the tone for a successful year. All parts of the assignment are **due by Thursday, 9/3/26**. There will be a quiz on **Friday, 9/4/26** that includes content from the summer assignment.

We are looking forward to working with you this fall!
Mrs. Coelho, Ms. Mahar, Ms. Smigala

Today or before the school year ends:

1. Pick up Campbell's *Biology in Focus* textbook from the floor book room.

2. Pick up or purchase Survival of the Sickest book:
   - A digital copy is available using the Sora link. If you are not signed into ClassLink you will be prompted to do so.
   - Paper copies are available in the LMC, the local public library, or by purchasing from Amazon (approx $10.00).

Over the summer…

1. Review & Sign Academic Integrity policy:
   - We strictly adhere to the academic integrity policy. With a parent or guardian, review the Academic Integrity policy. Both you and your parent or guardian will need to sign the policy and be prepared to turn in with summer work. **The Academic Integrity Policy applies to your summer assignment.**

2. Read Survival of the Sickest & Complete Book Reflections & Survival Poster
   a. Read book, take notes/book reflections
   b. Create a mini-poster to display important themes and biological concepts. Self score using rubric attached.

3. Complete Designing Experiments & Statistics Warm Up
   - Use the slideshow to help you complete the worksheets.

Acclimating yourself with the AP Biology Curriculum:

The AP Biology Curriculum centers around the **4 Big ideas** and you will need to not only know these but also understand how they are interconnected.

Big Idea 1: The process of evolution drives the diversity and unity of life.
Evolution is a change in the genetic makeup of a population over time, with natural selection as its major driving mechanism. Darwin's theory, which is supported by evidence from many scientific disciplines, states that inheritable variations occur in individuals in a population. Due to competition for limited resources, individuals with more favorable genetic variations are more likely to survive and produce more offspring, thus passing traits to future generations. A diverse gene pool is vital for the survival of species because environmental conditions change. The process of evolution explains the diversity and unity of life, but an explanation about the origin of life is less clear. In addition to the process of natural selection, naturally occurring catastrophic and human-induced events as well as random environmental changes can result in alteration in the gene pools of populations. Scientific evidence supports that speciation and extinction have occurred throughout Earth's history and that life continues to evolve within a changing environment, thus explaining the diversity of life.

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.
Cells and organisms must exchange matter with the environment. Organisms respond to changes in their environment at the molecular, cellular, physiological, and behavioral levels. Living systems require energy and matter to maintain order, grow, and reproduce. Organisms employ various strategies to capture, use, and store energy and other vital resources. Energy deficiencies are not only detrimental to individual organisms but they can cause disruptions at the population and ecosystem levels. Homeostatic mechanisms that are conserved or divergent across related organisms reflect either continuity due to common ancestry or evolutionary change in response to distinct selective pressures.

Big Idea 3: Living systems store, retrieve, transmit, and respond to information essential to live processes.
Genetic information provides for continuity of life, and, in most cases, this information is passed from parent to offspring via DNA. Non heritable information transmission influences behavior within and between cells, organisms, and populations. These behaviors are directed by underlying genetic information, and responses to information are vital to natural selection and evolution. Genetic information is a repository of instructions necessary for the survival, growth, and reproduction of the organism. Genetic variation can be advantageous for the long-term survival and evolution of a species.

Big Idea 4: Biological systems interact, and these systems and their interactions possess complex properties.
All biological systems comprise parts that interact with one another. These interactions result in characteristics and emergent properties not found in the individual parts alone. All biological systems from the molecular level to the ecosystem level exhibit properties of biocomplexity and diversity. These two properties provide robustness to biological systems, enabling greater resiliency and flexibility to tolerate and respond to changes in the environment. Nothing in our world exists in isolation and even things such as disease and the evolution of disease are more complex than most realize.

These 4 big ideas are the framework for the 8 main units of the course:

AP Biology Overview Video: A great resource to use to review but also give you a good idea of what to expect from this course: https://youtu.be/Kuxic6y6pwkn

1. Chemistry of Life
2. Cell Structure and Function
3. Cellular Energetics
4. Cell Communication and Cell Cycle
5. Heredity
6. Gene Expression and Regulation
7. Natural Selection/Evolution
8. Ecology

Survival of the Sickest Chapter Reflections (20pts)

As you read *Survival of the Sickest*, take thoughtful notes and complete a short reflection for each chapter. Your reflections should demonstrate both understanding of the chapter & connections to AP Biology concepts.

For each chapter, consider the following:

- What was the most interesting, surprising, or important idea presented in this chapter?
- Identify a quote from the chapter that stood out to you and explain why.
- How does the chapter demonstrate a connection between environment, disease, and survival?
- What AP Biology concepts or themes connect to this chapter? (Examples: evolution, cells, genetics, energetics, ecology, immunity, cell communication, etc.)
- What questions do you have after reading the chapter? Something difficult to understand? Explain.
- Do you agree or disagree with any of the claims or perspectives presented by the author? Why?

Suggested Note-Taking Strategy

- Main Idea/Key Vocabulary/Concepts
- Disease or Condition Discussed
- Evolutionary Advantage
- Evidence/Examples
- Questions & Reactions
- Connections to AP Biology

Reflection Expectations

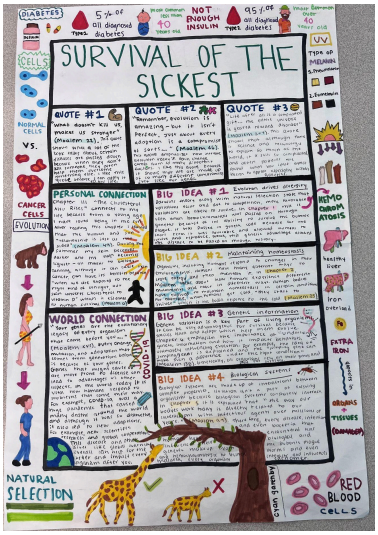
- Each chapter reflection should be **6–8 well-developed sentences**. They should be compiled into 1 handwritten or typed document that is separated by chapter.
- Reflections must include **specific references or examples from the chapter**.
- Responses must go beyond summary and include your own analysis, questions, and connections.
- Be prepared to discuss your reflections and ideas in class discussions.

Survival of the Sickest Mini Poster (20 points)

A well-designed mini poster is a creative way to communicate important ideas, themes, and biological concepts from *Survival of the Sickest*. Your poster should combine scientific understanding, thoughtful analysis, and strong visual design. Posters will be displayed in the hallway, so they should be neat, engaging, and easy to read from a short distance.

- **Size & Format:** Use the provided 11” x 17” paper OR tape together two standard sheets of paper. Posters can be hand drawn, digital, or a combination of both. Include drawings, diagrams, charts, symbols and typed text. Final product should be visually organized, colorful, reactive and easy to read. Your poster will be evaluated based on neatness and effort, creativity, readability and overall presentation quality.

Required Components of Poster



1. Themed Border (4 points)

Your border must:

- Border the entire poster and include a combination of words, symbols, sketches, diagrams, or images,
- Represent at least **4 important topics/themes** from the book
- The border should help communicate the overall themes of the book not simply decorate the page.

2. Quotes Section (6 points)

Include at least **3 meaningful quotes** from the book.. For EACH quote:

- write the quote clearly and reference page number.
- explain why the quote is important and what idea and concepts it represents.
- include a related visual (image, symbol, diagram, or sketch).

3. Connection to the Modern World (4 points)

Create a section that explains how ideas from the book connect to issues in today's world. For example, vaccines, antibiotic resistance, evolution of pathogens, healthcare, medical research. This section must include:

- at least one written explanation (3–5 sentences),
- and at least one visual element (diagram, image, graph, symbol, etc.).

4. AP Biology Big Ideas Connections (4 points)

The AP Biology course is organized around four major "Big Ideas." For EACH Big Idea:

- identify one example from *Survival of the Sickest* and explain how it connects to that Big Idea,
- include a supporting image, sketch, or diagram.

5. Overall Appearance (2 points)

- Organized, neat, easy to read and unique
- Includes a minimum of 8 colorful illustrations to convey ideas and concepts.
- Poster design/visuals are creative

Designing Experiments & Statistics Packet/Slideshow (10 points)

- Complete the Designing Experiments & Statistics Warm Up worksheet after viewing the Slides posted to our google classroom. Be prepared to submit work by the due date.
- You may choose to put your answers to the worksheet on a separate sheet.

Name: _____

Mini-Poster Grading Rubric/Self Rating

Section:		Points	Student Self Score	Teacher Score
Border	● Four borders are present and contain concepts and information related to the book. This may be accomplished by picking at least four favorite topics from the book. ● Borders include pictures, words, symbols, to clearly reflect chosen ideas/topics.	4		
3 Quotes	● State 3 favorite quotes from the book that resonated with you. (Reference page number.) ● Reflection for each quote to demonstrate your understanding of the quote and why it resonated with you. ● Include/create an illustration, model, diagram, to display the concepts behind the quote chosen.	6		
Connection to world	● How does this book connect to the world? Reflect on a topic, idea, or quote from the book that connects to the world today. Describe the connection and why you chose this topic. ● Include/Create an illustration, model, diagram, etc to represent your chosen topic.	4		
4 Big Ideas	● 4 Big Ideas are addressed and display concepts and ideas related to each Big Idea. ● Identify an example from the text that exemplifies each of the Big Ideas. ● Include an image, illustration or diagram for each big idea.	4		
Illustrations & Overall Appearance	● The poster was organized, neat, easy to read and unique. Can be handwritten or typed ● Includes a minimum of 8 colorful illustrations to convey ideas and concepts. ● Poster design/visuals are creative	2		
Total Score		__/20		

ACADEMIC INTEGRITY POLICY overview (2 points- submit a paper copy)

Academic Integrity Policy

Our school values academic integrity as reflected by the Fairfield Ludlowe High School Core Values. Cheating or plagiarism on academic work will result in no credit for the material. Parents will be notified. Disciplinary action may result from multiple offenses. The Fairfield Public Schools comply with all copyright laws, and plagiarism in the academic environment is strictly prohibited.

As a learning community of students, parents, and staff, we all must accept responsibility for establishing and maintaining a climate of academic integrity at Fairfield Ludlowe High School. The Academic Integrity Policy assures that consistent and appropriate measures are taken to address offenses to academic integrity.

Violations of academic integrity are defined as, but not limited to:

- Using or possessing unauthorized notes or electronic devices during a test or quiz.
- Copying or possessing another student's work during a test or quiz.
- Sharing answers during a test or quiz.
- Giving information to others who have not taken the test or receiving information from those who have.
- Copying another student's class work or homework or providing your work to be copied. Intent cannot be judged. Students cannot use "I didn't know he/she would copy my work and turn it in," as an excuse.
- Plagiarizing another person's work from any resource (periodical, book, internet, generative AI, etc.) and submitting it as one's own.
- Plagiarism by paraphrasing or using parts of another person's work (ideas, text, images, etc.) without citing it as a resource in context or in a footnote.
- Using an electronic, computer-based, internet site, and/or program translator for the purpose of completing any written or oral class assignment including homework in a world language class.

Students should not place themselves in the position of having their actions viewed as cheating. We cannot judge intent, whether innocent or not. Students should pay particular attention to sharing documents electronically when individual work is required in the classroom.

Consequences for violations of this policy will be determined by administration and may include (but not be limited to) academic consequences, disciplinary consequences, and loss of eligibility for some activities and/or leadership positions.

Source: FLHS Student-Parent Handbook 2025-26

AP BIOLOGY LAB REPORT EXPECTATIONS:

All science courses require laboratory work as a part of the curriculum. This often involves students working together to complete the laboratory activity. A written lab report is turned in to the teacher with information regarding the procedure, data, and an analysis/conclusion based on the data gathered during the lab exercise.It is the expectation of the Fairfield Public Schools that ALL of the information included in a student's lab report ***except*** for the procedure and the raw data will be done independently by the student. The purpose of the lab report is for each student to demonstrate his/her own understanding of the concept(s) used in the lab activity and the report should be treated just as any test or quiz would be. Students are not permitted to "work together" on any parts of the lab report beyond the procedure and raw data.

I have read and agree to abide by this academic integrity policy. _____ (Date)

_____	_____
(Student printed name)	(Parent/guardian printed name)
_____	_____
(Student signature)	(Parent/guardian signature)