

AP BIOLOGY SUMMER ASSIGNMENT



Welcome to AP Biology! We are excited that you have decided to join us on the adventure to increase your biological knowledge. We are of the opinion that learning is something you do to yourself-it is not given to you. Since this is a college level biology course, we encourage you to consider the following:

1. You need to use what you learn. That means **practice**. There are no tricks for high grades.
2. You need to “make” notes-as in, you need to jot down, draw and **interact** with the handouts that are provided to you.
3. You need to make **time**. College level=more time needed. It’s your priorities that will determine the outcome of your experience in this course.
4. You need to **study**. This doesn’t mean the night before a test. It means during Titan Time, before a game, before you go to Grandma’s house on Saturday. Again, see #1.
5. If you need help, you need to **ask**. You need to come in the morning or after school for help. You need to take **responsibility** for your education.
6. There’s **NO** such thing as late in AP biology.

Bottom line: No one learns unless they decide they want to and people put in about as much effort as they decide they are going to. Learning is a biological process. The best ways to learn have already been discovered; you don’t need to reinvent the wheel. **Practice, interact, time, study, ask, responsibility.** Learning is the only way, but it is sometimes difficult and it requires effort. But when it’s done right, awesomeness occurs 😊

PART 1: HENRIETTA LACKS WEBQUEST

Follow the directions and complete the webquest included in this document. Be prepared to answer questions regarding this assignment in a quiz during the first week of class.

PART 2: TOPIC REVIEW

On the **second** day of class, you will have a review test so that we can assess where you are in your biological knowledge. This will not be on new material-rather it will cover information that you are expected to know from your first biology course your freshman or sophomore year. This will include information on the following topics:

BIOCHEMISTRY	EVOLUTION
CELLS	CLASSIFICATION
MITOSIS/MEIOSIS	PHOTOSYNTHESIS
GENETICS	
DNA/RNA RESPIRATION	

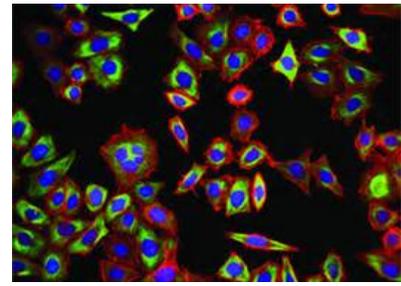
If you feel like you need to review, we would encourage you to purchase a study guide review book **THIS SUMMER**. Look for one with the most current publishing date (Barron’s, Cliff’s Notes, Princeton Review, etc). In addition, you may wish to watch videos from the following websites:

BOZEMAN BIOLOGY
www.youtube.com/user/bozemanbiology

KHAN ACADEMY
<http://www.khanacademy.org/>



THE IMMORTAL LIFE OF HENRIETTA LACKS WEBQUEST



A descendent of freed slaves, Henrietta Lacks was an African American tobacco farmer who got cervical cancer when she was 30. A doctor at Johns Hopkins took a piece of her tumor and put it in a test tube without her consent or knowledge and, although she died 8 months later, her cells-known worldwide as HeLa cells-are still alive today. This is her story...

YOUR ASSIGNMENT: Complete the following webquest. A blank answer sheet for you to write answers on is attached as the last page. Complete the webquest and answer the questions on the answer sheet. Be prepared to turn it in when you get back to school in the Fall.

A. ACTIVITY 1

Watch the first 10 minutes of the documentary "Way of All Flesh" about Henrietta Lacks:

<http://topdocumentaryfilms.com/the-way-of-all-flesh/>

1. How old are Henrietta Lacks' cells now, as of 2013?
2. What race(s) were Henrietta's great grandmother and great grandfather?
3. What did Dr. Grey feed cancer cells to try to keep them alive?
4. What happened when Mary Kubicek plated out Henrietta's tumor cells that was unusual?
5. Why did Dr. Grey give HeLa cells a code name?

B. ACTIVITY 2

Go to the Wikipedia page about Henrietta Lacks:

http://en.wikipedia.org/wiki/Henrietta_Lacks

7. Why did Henrietta Lacks have no choice but to go to Johns Hopkins hospital?
8. Henrietta Lack's grave was unmarked for years, but in 2010, who provided a headstone for her and what inspired him to do so?
9. Finish this line from her headstone: "Her immortal cells..."

C. ACTIVITY 3

Read this interview with Rebecca Skloot, the author of The Immortal Life of Henrietta Lacks (an EXCELLENT book in paperback I strongly recommend you read)

<http://www.smithsonianmag.com/science-nature/Henrietta-Lacks-Immortal-Cells.html>

10. Henrietta's husband got a call that he interpreted as "We've got your wife. She's alive in a laboratory. We've been doing research on her for the last 25 years. And now we have to test your kids to see if they have cancer." What was the real purpose of the call?
11. Henrietta's family lived in poverty and many couldn't afford health insurance. What did her brothers do when they found out that HeLa cells were being bought and sold?

D. ACTIVITY 4

Read the front page of this website:

<http://henrietalacksfoundation.org/>

12. What is the purpose of the foundation and what have they accomplished so far?

E. ACTIVITY 5

Watch the first minute of this bioethicist interview about Henrietta Lacks:

<https://www.youtube.com/watch?v=x21YtrY9f0Y>

13. Was it illegal for doctors to take cells from Henrietta without her consent? Was it right to take them?

F. ACTIVITY 6

Read this blog post:

<http://scienceblogs.com/whitecoatunderground/2010/01/18/consent/>

14. What is the main difference between the consent form signed by Henrietta Lacks in 1951 and the one she would sign today?

G. ACTIVITY 7

Listen to the song "Helen Lane" by Mal Webb

<http://www.youtube.com/watch?v=s-Bb4dmpKeE>

15. At what minute in the song does the singer use "Helen Lane's" real name?

16. Why is the song called "Helen Lane"?

H. ACTIVITY 8

Check out this infographic at:

http://www.wired.com/magazine/2010/01/st_henrietta

17. Approximately how many scientific papers do HeLa cells appear in?

18. In what year did a Yale researcher publish a discovery that cancerous HeLa cells contain an enzyme that prevents cells from dying, i.e., makes them immortal?

19. Do cancer cells grow faster or slower in space?

20. How did HeLa cells make it possible to diagnose trisomies like Down syndrome?

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