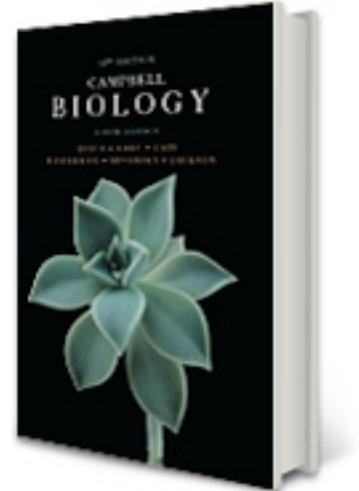


# YULA BOYS HIGH SCHOOL

## **Advanced Placement Biology Summer Assignment 2018-19 Mrs. Vickie Bellomo, [VBellomo@YULA.org](mailto:VBellomo@YULA.org)**

Dear Future Biologist,

**Welcome to AP Biology!** I am looking forward to working with you next school year in AP Biology. Our pace will be quick; we have a great deal of material to consider. I hope that we will have time to be reflective and to appreciate the broad concepts of biology, the interconnections, and the relevance of biology in our everyday lives. This course will be demanding and requires a lot of time. Please consider carefully before committing to this course.



Please purchase the textbook ASAP!

Campbell Biology

ISBN: 9780321739759 EDITION: 9th AUTHORS: Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman

You should also look into purchasing a AP Biology prep book. I recommend Cliffs AP Biology Fourth Edition or Princeton Review.

You may email me throughout the summer with questions.

### **First day of boot camp. Friday, August 24 (9:00-11:30 AM)**

1-Summer Assignment due

2-Exam Chapters 2-8 AND Surface Area/Volume Calculations

You must score an 85% or better on the summer assignment AND 70% or better on the exam to remain in this course. **No exceptions. No excuses. BE PREPARED.**

**-Homework-Safety/Equipment AND QUIZ on Haiku opens at 1:00pm-will close at 11:59 pm on the day of Boot Camp**

**-PreLab Enzyme Catalysis**

### **Second day of boot camp. Monday, August 27 (12:00-2:30 PM)**

Lab Enzyme Catalysis. Lab due first day of school.

### **Summer Assignment**

Begin by reading Chapters 1-6, 8 Campbell Biology 9th edition. Any older edition does not correlate.

Follow the directions carefully for each assignment below.

**1- LEARN and STUDY. This material will be on your first test during Boot Camp.**

Ch-1 Introduction: Themes in the Study of Life (not on test, but please read)

Ch-2 The Chemical Context of Life

Ch-3 Water and the Fitness of the Environment  
Ch-4 Carbon and the Molecular Diversity of Life  
Ch-5 The Structure and Function of Biological Molecules  
Ch-6 A Tour of the Cell  
Ch-7 Membrane Structure and Function  
Ch-8 An Introduction to Metabolism  
Surface area to volume calculations.

## **2- Math/Calculations for AP Bio**

A. Complete Surface area to volume lab AND Cell size is limited by surface area worksheet.

For extra review:

Surface area to volume ratio, use the animation to check your answers.

<http://www.shodor.org/interactivate/activities/SurfaceAreaAndVolume/>

B. Complete Math and Statistics in AP Bio Worksheet

## **3- Chapter 6- Tour of the Cell.**

Review the parts of the animal and plant cells:

<http://www.wisc-online.com/Objects/ViewObject.aspx?ID=AP11403>

<http://learn.genetics.utah.edu/content/begin/cells/insideacell/>

Create a visual representation: diagram with annotation explaining how four organelles work together to perform a specific function in a cell of your choice. Predict how a defect in the function of one of the organelles can affect the overall function of the cell. Make sure to also distinguish between prokaryotic and eukaryotic cells. You can create your own artistic drawing or use digital photos. Use 8.5" x 11" paper.

## **4- Chapter 7 - Membrane Structure and Function**

A. Print Membrane worksheet and complete as directed.

## **5- Chapter 8-An Introduction to Metabolism**

A- Complete Intro to Metabolism worksheet and complete as directed.

B- Complete Enzymes worksheet and complete questions 1-23 as directed.

## **6- AP Biology curriculum is designed to focus on depth and conceptual understanding of biological processes and to see the “Big Picture”.**

The curriculum is focused on four “Big Ideas”.

### **The Big Ideas:**

**Big idea 1:** The process of evolution drives the diversity and unity of life.

**Big idea 2:** Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.

**Big idea 3:** Living systems sort, retrieve, transmit and respond to information essential to life processes.

**Big idea 4:** Biological systems interact, and these systems and their interactions processes complex properties.

### **Digital Scavenger Hunt**

Over the course of AP Biology we will learn and discuss many new terms. To get you familiar with these terms you will begin exploring our natural world and relate how these terms apply to your everyday life. Using your cell phone or digital camera take an original picture of something that represents one of the terms. **Specifically describe how your image fits the definition of the term and the function or use of that item in nature and relate to one of the BIG IDEAS.**

Pictures may not be taken by someone else, publication, or found on the internet. **Each picture should include a small post-it with your name, term used, and date written on it.** See below.

**Choose 16 terms from the list below and use each picture only once.  
Choose 4 terms/pictures for each of the Big Ideas.**

Present your terms as follows:

Create a booklet. Print (in color) all your pictures. Below each picture include the term, definition, and its function or use in nature.



**Terms:**

amniotic egg	keratin	fermentation
annelid	meristem	ethylene
autotrophs	monocot	endosperm
biological magnification	dicot	connective tissue
carbohydrate	mycorrhizae	gravitropism
nymph stage of larvae	Cnidarian	unicellular organism
phototropism	conifer	taxis
anther & filament	Porifera	radial symmetry
auxin producing area of a plant	rhizome	bone
bryophyte	coelomate	Phosphorous cycle
cambium	vascular tissue	algae
angiosperm	cuticle	pollinator
arthropod	leaf-gymnosperm	protist
basidiomycete	parasite	decay
C 4 plant	myosin	niche
cellulose	echinoderm	mycelium
bacteria	enzyme	protein
Batesian mimicry	water cycle	osmosis
chitin	animal with 2 chambered heart	
Chlorophyta	animal with 3 chambered heart	
commensalism	eukaryote	
epithelial tissue	frond	
exoskeleton	spore	
ovary	gastropod	
genetically modified	mollusk	
organism	insect	
haploid chromosome number	littoral zone organism	
K-strategist	mutualism	
lichen	pollen	
long-day plant	r-strategist	
modified stem of a plant	lipid	

Examples: If the vocabulary word is an internal part to an organism such as “tendon” you don’t have to dissect your little brother’s Achilles tendon and take a picture of it. A photo of his heel, and what the tendon does would suffice, but you must apply the term to the specimen you find and briefly explain in your document how this specimen represents the term. Then relate to one of the 4 Big Ideas.

If you choose the term “phloem,” you could submit a photograph you have taken of a plant leaf or a plant stem and then explain in your document what phloem is and specifically where phloem is in your specimen. Relate to one of the 4 Big Ideas.

Assignment modified from:

<http://rpsdhigh.sharpschool.net/common/pages/DisplayFile.aspx?itemId=1496317>

Make sure you have completed all of the above assignments. Please read the directions carefully.

If you have any questions during your learning or about the upcoming test, please email me: [vbello@yula.org](mailto:vbello@yula.org) or communicate via Whats

Please read and sign below:

*As a student enrolled in this class, I affirm the principle of academic integrity and commit to upholding integrity by completing all academic assignments myself. I will not participate, either directly or indirectly, in cheating or plagiarism; and I will actively discourage cheating or plagiarism by others throughout this course.*

*I have read through the summer assignment and understand the depth and time commitment to complete this assignment over the summer. I understand I must complete the summer assignment due on the first day of AP Biology class. I will rigorously prepare for the first exam given on the first day of class and know that if I do not score 70% or better, I will be removed from AP Biology.*

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*Student Signature*

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*Date*

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*Printed name*

Compile all worksheets and place in order in an appropriate binder or folder. Assignments should be ready before you come to class. **You will not have time to assemble and organize your assignment in class. 15 point penalty will be given to assignments that are not ready.** Those who have failed to complete entire summer assignment will be removed from this course.