AP Biology Summer Assignment 2015-2016

Mrs. Verdonck kverdonck@north-reading.k12.ma.us

Website: https://sites.google.com/a/north-reading.k12.ma.us/mrs-verdonck-s-online-classroom/

Congratulations on deciding to take on the challenge of an Advanced Placement Course . AP Biology is a vigorous, yet manageable and rewarding class. In order to meet the demands of the curriculum it is necessary for you to complete some work before you come back in September.

SUMMER ASSIGNMENT

Part 1: Introduction Letter

First, I would like to know a little about who you are so your first assignment is to send me an email. Your first AP Biology grade will be sending me an email…if only all of the grades were this easy.

Subject Line: AP Biology2015, Your Name

Body: Your full name (& nickname that you go by if you have one)

- What are your parent's names? What are your parent's emails and cell phone numbers?
- What other science classes have you taken? Or be taking at the same time?
- What do you like to do (hobbies, sports, music, interests, etc.)?
- Was there anything that you liked or disliked about your earlier science classes?
- What are you looking forward to the most in AP Biology?
- What are you most anxious about in AP Biology?
- Why are you taking AP Biology? What do you hope to accomplish/gain?

Don't worry! There is no right or wrong answer….be honest so that I can figure out the best way to help you next year! ☺

Part 2: Independent Reading: *Survival of the Sickest*

Author: Sharon Moalem with Jonathan Prince **ISBN-10:** 0060889667

Joining the ranks of modern myth busters, Dr. Sharon Moalem turns our current understanding of illness on its head and challenges us to fundamentally change the way we think about our bodies, our health, and our relationship to just about every other living thing on earth. Through a fresh and engaging examination of our history, Dr. Moalem reveals how many of the conditions that are diseases today actually gave our ancestors a leg up in the survival sweepstakes. But Survival of the Sickest doesn't stop there. It goes on to demonstrate just how little modern medicine really understands about human health, and offers a new way of thinking that can help all of us live longer, healthier lives.

- Please reflect, comment, and take notes using the summer reading template.

Part 3: Coursework

Read and review concepts in **Chapter 3**: Water and the Fitness of the Environment (pgs. 46-52) and **Chapter 5**: The Structure and Function of Large Biological Molecules (entire chapter).

-Take notes and complete worksheets (Water and the Fitness of Environment and Organic Molecules)

Part 4: Necessary Math skills – Statistics and Graphing

a. Watch Bozeman Science – Statistics and Graphing Videos #1-5. Each video is approx. 8min
https://www.youtube.com/watch?v=jf9VT4V4aRI&list=PLllVwaZQkS2omBpLjQm_BAQKsQ7lq86ku

- Complete wkshts (Statistics and Standard Deviation, and Graphing)
- You may use the AP Biology Equations and Formulas Sheet to assist you

b. Watch Bozeman Science – Chi Square
https://www.youtube.com/watch?v=WXPBoFDqNVk

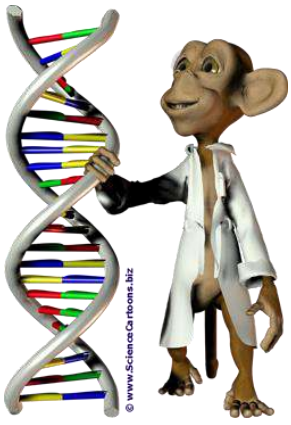
- Complete wksht (Chi Square)

Part 5: School Materials

Please have all of the materials you will need for next year ready for the first day of school, as we will be starting right away.

Here is what will be needed to be successful in my AP Biology class:

- **Textbook: Biology AP Edition (8th ed) by Campbell and Reese**
- **Scientific Calculator**
- **One 2-3" binder just for AP Bio and One bound lab notebook (graph paper)**



Facts about the class & Exam:

AP Biology should NOT be considered "college prep." This is a COLLEGE course, with college level expectations for behavior, attendance, participation and effort. YOU WILL BE REQUIRED TO STUDY INDEPENDENTLY!

The A.P. Biology Exam is 50% multiple choice and 50% free response. You will be given ninety minutes to complete 60 multiple choice questions and another 90 minutes to complete the free response answers. Your exam score will be rated as a 1(poor) – 5 (best). You can receive recognition by more than 90 percent of colleges in the United States & colleges in more than 60 other countries, which grant credit, advanced placement or both on the basis of AP Exam grades. Check out your potential schools policies online at http://collegesearch.collegeboard.com/apcreditpolicy/index.jsp

The exam is given during the second week in May.. I will hold a practice exam/study session in March on a Saturday. It is the student's responsibility to pay for exam fees, usually around $85 - $90 by March (tax credit may be used.)

Curriculum:

AP Biology Big Ideas:

- **Big Idea 1:** The process of evolution drives the diversity and unity of life. (approximately 15% of course instructional time)
- **Big Idea 2:** Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis. (approximately 30% of course instructional time)
- **Big Idea 3:** Living systems store, retrieve, transmit, and respond to information essential to life processes. (approximately 30% of course instructional time)
- **Big Idea 4:** Biological systems interact, and these systems and their interactions possess complex properties. (approximately 25% of course instructional time)

Science Practices for AP Biology:

A practice is a way to coordinate knowledge and skills in order to accomplish a goal or task. The science practices enable students to establish lines of evidence and use them to develop and refine testable explanations and predictions of natural phenomena. These science practices capture important aspects of the work that scientists engage in, at the level of competence expected of AP Biology students.

- **Science Practice 1:** The student can use representations and models to communicate scientific phenomena and solve scientific problems.
- **Science Practice 2:** The student can use mathematics appropriately.
- **Science Practice 3:** The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
- **Science Practice 4:** The student can plan and implement data collection strategies appropriate to a particular scientific question.
- **Science Practice 5:** The student can perform data analysis and evaluation of evidence.
- **Science Practice 6:** The student can work with scientific explanations and theories.
- **Science Practice 7:** The student is able to connect and relate knowledge across various scales, concepts, and representations in and across domains.