

AP BIOLOGY SUMMER ASSIGNMENT

Assignment 1

We are going to spend a lot of time together next year, so it's best if we get a head start on learning a bit about you.

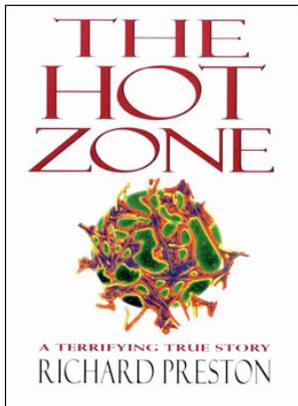
Your first digital assignment is to successfully send an email to your AP Biology teacher.

Due date: Wed., June 04, 2012 Draft an email to me following these rules:

- a. Use clearly written, **full sentences**. Do not abbreviate words like you are on AIM with a friend. Use **spell check!** This is a professional communication like you would have with a college professor, so let's practice for your rapidly nearing future!
- b. Address it to me at leya.mathew@ahschool.com
- c. Make the **Subject**: "**AP Bio: Introduction to <Insert Your Name Here>**" (Do not include the quote marks or the brackets, just the words)
- d. Begin the e-mail with a **formal salutation**, like "Ms. Mathew," or "Dear Ms. Mathew,"
- e. Now introduce yourself (your name) and tell us a little bit about yourself, like:
 - What do you like to do (hobbies, sports, music, interests, etc.)?
 - Do you have a job?
 - Tell me a little bit about your family (Mom? Dad? Guardian? Siblings? Pets?)What do your parents do for a living?
 - Was there anything that you liked about your earlier biology class?
 - What was the last book you read for fun?
 - What are you looking forward to the most in AP Biology?
 - What are you most anxious about in AP Biology?
- f. End the e-mail with a **formal closing**: "Cordially", "Sincerely", "Warm regards", etc. and add your name as if you signed a letter.

ASSIGNMENT #2 – You will pick your book in Mrs. Mathew's meeting on May 24th.

Book 1:



SUMMER READING —THE HOT ZONE: A TERRIFYING TRUE STORY

This is not textbook reading! Your summer reading is an exciting book about science.

Yes, there are people who love science so much that they spend their time researching and writing books about it and there are people who love science even more that they spend their time *reading* these science books. You too may become one of these people, Young Grasshopper!

A bit about The Hot Zone:

The Ebola virus kills nine out of ten of its victims so quickly and gruesomely that even biohazard experts are terrified. It is airborne, it is extremely contagious, and in the winter of 1989, it seemed

about to burn through the suburbs of Washington D.C...

The Hot Zone tells this dramatic story in depth, giving a hair-raising account of the appearance of rare and lethal viruses and their outbreaks in the human race. From a remote African cave hot with Ebola virus, to an airplane over Africa that is carrying a sick passenger who dissolves into a human virus bomb, to the confines of a Biosafety Level 4 military lab where scientists risk their lives studying lethal substances that could kill them quickly and horribly, The Hot Zone describes situations that a few years ago would have been taken for science fiction. As the tropical wildernesses of the world are destroyed, previously unknown viruses that have lived undetected in the rain forest for eons are entering human populations. The appearance of AIDS is part of a larger pattern, and the implications for the future of the human species are terrifying.

This summer, we will talk about this reading via our AHS Biology Blog. It's summer... It will be a little bit loose, but we do expect you to read and respond with thoughtful ideas throughout the summer!

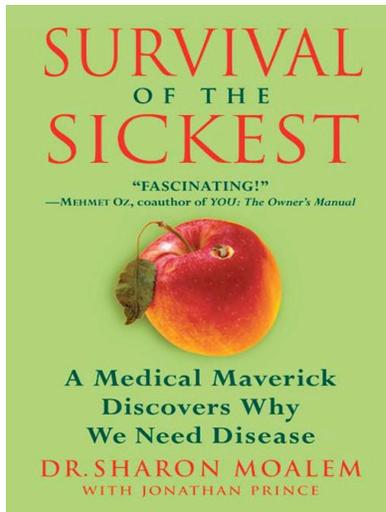
SUMMER READING: THE HOT ZONE, BY RICHARD PRESTON

DUE DATES: POST COMMENTS EVERY 2 WEEKS!

- What did you think about the reading?
- What did you learn?
- What questions do you still have?

BOOK 2

SURVIVAL OF THE SICKEST



Find out why deadly diseases are bred into our genetic code – and learn the answers to such provocative questions as:

- * Can a person rust to death?
- * Can sunglasses cause sunburns?
- * Why do we need to pee when we're cold?
- * Can the tanning salon lower cholesterol?
- * Who gets drunk faster-Europeans or Asians? And why?
- * Why are African-Americans more prone to hypertension?

Survival of the Sickest reveals the answers to these and many other questions as it unravels the amazing connections between evolution, disease, and human health today.

This book 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 – from plants and animals to insects and bacteria.

This revelatory book explains how, especially when you take the evolutionary long-view, many diseases are really complicated blessings, not simple curses. Survival of the Sickest answers the riddles behind many diseases that seem to be inexplicably wired into our genetic code, starting with the biggest riddle of them all: If natural selection is supposed to get rid of harmful genetic traits, why are hereditary diseases so common?

Through a fresh and engaging examination of our evolutionary history, Dr. Sharon Moalem reveals how many of the conditions that we think of as diseases today actually gave our ancestors a leg up in the survival sweepstakes. When the option is a long life with a disease or a short one without it, evolution opts for the long ball every time.

Survival of the Sickest explores earth, history, and the human genome to discover how environmental, cultural, and genetic differences shaped us through evolution and continue to play an active role in our health today.

Everything from the climate our ancestors lived in, to the crops they planted and ate, to their beverage of choice can be seen in our genetic inheritance. 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.

Survival of the Sickest is filled with fascinating insights and cutting-edge research, presented in a way that is both accessible and utterly absorbing. This is a book about the interconnectedness of all life on earth – and, especially, what that means for us. Read it. You're already living it.

ASSIGNMENT #3

BIOLOGY COLLECTION

For this part of your summer assignment, you will be familiarizing yourself with science terms that we will be using at different points throughout the year. On the next page is the list of terms.

Each item is worth 2 points. You must earn 100 points by Friday August 26. You are required to post 5 photos each week:

§ Earn 100 points by “collecting” 50 items from the list of terms.

When I say “collect”, I mean you should collect that item by finding it and taking a **photograph** (digital or paper printed) of that item. You will post your photographs with appropriate **explanations / descriptions** on the **AP Biology Blog**.

<http://ahschoolapbio2013.wordpress.com/>

2. **YOU CAN BE CREATIVE:** If you choose an item that is internal to a plant or animal, like the term “phloem”, you could submit a photograph of the whole organism or a close up of one part, and then explain on the blog *what* phloem is and specifically *where* phloem is in your specimen.
3. **ORIGINAL PHOTOS ONLY:** You cannot use an image from any publication or the Web. You must have taken the photograph yourself. Please include your 2011-2012 AHS ID in **each** picture with your name showing.
4. **NATURAL ITEMS ONLY:** All items must be from something that you have found in nature. Take a walk around your yard, neighborhood, and town. **DON'T SPEND ANY MONEY!** Research what the term means and in what organisms it can be found... and then go out and find an example.
5. **TEAM WORK:** You may work with other students in the class to complete this project, but **each student must turn in his or her own project** with a unique set of terms chosen. So working with other students means brainstorming, discussing, going on collecting trips together. It doesn't mean using the same items! There are almost 100 choices... probability says there is a very slim chance that any two students will have the same items chosen for their 100 points... and I believe in the statistics!
6. **DESCRIPTIONS:** Please be accurate and detailed in your descriptions. Brief, layman descriptions will lose points.

BIOLOGY COLLECTION TERMS

Below are the items you are to “collect”. An individual organism can only be used **once**. Humans are acceptable for **one** category only. You must take all photos yourself; no Internet photos!

GROUPINGS

Each specimen in a category is worth 2 points up to a total of 5 specimens in the category. Except where noted every specimen must be native to Florida.

1. Different biomes (only 3 must be within FL)
2. Different types of carbohydrates
3. Different classes of proteins
4. Evidence of different alleles for the same

trait
5.Distinguishing characteristics between monocots & dicots

6.Organisms in different kingdoms
7.Organisms in different animal phyla

INDIVIDUAL ITEMS

8.Organisms in different plant divisions
9.Organisms in same class but different orders
10.Organisms in same order but different family

11.Organisms in same genus but are different species
12.Organisms on different levels of the same food chain

Each specimen is worth 2 points You may have up to 2 examples of each item; submitting more than 2 will not add any additional points. These do not need to be native to Florida.

1.adaptation of an animal
2.adaptation of a plant
3.altruistic behavior
4.amniotic egg
5.analogous structures
6.animal that has a segmented body
7.anther & filament of stamen
8.archaebacteria
9.asexual reproduction
10.ATP
11.autotroph
12.auxin producing area of a plant
13.basidiomycete
14.Batesian mimicry
15.bilateral symmetry
16.biological magnification
17.C3 plant
18.C4 plant
19.CAM plant
20.Calvin cycle
21.cambium
22.cellular respiration

23.coevolution
24.commensalism
25.connective tissue
26.cuticle layer of a plant
27.detritovore
28.dominant vs. recessive phenotype
29.ectotherm
30.endosperm
31.endotherm
32.enzyme
33.epithelial tissue
34.ethylene
35.eubacteria
36.eukaryote
37.exoskeleton
38.fermentation
39.flower ovary
40.fronde
41.gametophyte
42.genetic variation within a population
43.genetically modified organism
44.gibberellins
45.glycogen
46.gymnosperm cone – male or female
47.gymnosperm

leaf
48.hermaphrodite
49.heterotroph
50.homeostasis
51.homologous structures
52.hydrophilic
53.hydrophobic
54.introduced species
55.keystone species
56.Krebs cycle
57.K-strategist
58.lichen
59.lipid used for energy storage
60.littoral zone organism
61.long-day plant
62.mating behavior (*be careful!*)
63.meristem
64.modified leaf of a plant
65.modified root of a plant
66.modified stem of a plant
67.Mullerian mimicry
68.mutualism
69.mycelium
70.mycorrhizae

71.niche
72.parasitism
73.parenchyma cells
74.phloem
75.pollen
76.pollinator
77.population
78.predation
79.prokaryote
80.r-strategist
81.radial symmetry (animal)
82.redox reaction
83.rhizome
84.seed dispersal (animal,wind, water)
85.spore
86.sporophyte
87.stigma & style of carpel
88.succession
89.taxis
90.territorial behavior
91.tropism
92.unicellular organism
93.vestigial structures
94.xylem

DUE DATES

#	Due date	Assigned Task
1	Sun., May 27	Enter your contact information into Ms. Mathew's database
2	Wed., May 30	<ol style="list-style-type: none">1. Visit the AP Biology blog: ahschoolapbio.wordpress.com Read the post, "How to Blog Safely"2. To get ready to use the AP Biology blog, you must sign up for "just a username" at WordPress: http://en.wordpress.com/signup Be sure NOT to use your full name: Use only your first name and last initial.2. You must then send Ms. Mathew (leya.mathew@ahschool.com) the e-mail address & username that you used to sign up for WordPress, so she can sign you up as a Contributor.3. Once you are added, you will receive a confirmation e-mail that "You're added to this blog" which means you have become a Contributor to the AP Biology blog.
3	Fri., June 1	Send your e-mail "Letter of Introduction" to your AP Bio teacher (See attached instructions): Ms. Mathew: leya.mathew@ahschool.com
4	Fri., June 22	<ol style="list-style-type: none">1. Start your Biology Scavenger Hunt (photos only!) Post at least 5 photos EVERY week on the AP Biology Blog2. Start reading <i>The Hot Zone</i>, or <i>The Survival of the Sickest</i> and get ready to post about your reading EVERY OTHER Friday!
5	Fri., June 29	1. 1st Biology Scavenger Hunt post — at least 5 photos.

- 6 **Fri., July 6**
1. Complete Part One of *The Hot Zone* or *The Survival of the Sickest* and comment about it on the AP Biology Blog: <http://ahschoolapbio2013.wordpress.com/>
 - What did you think about the reading?
 - What did you learn?
 - What questions do you still have?
 2. 2nd Biology Scavenger Hunt post — at least 5 photos.
- 7 **Fri., July 13**
1. 3rd Biology Scavenger Hunt post — at least 5 photos.
- 8 **Fri., July 20**
1. Complete Part Two of *The Hot Zone* or *The Survival of the Sickest* and comment about it on the AP Biology Blog: <http://ahschoolapbio2013.wordpress.com/>
 2. 4th Biology Scavenger Hunt post — at least 5 photos.
- 9 **Fri., July 27**
1. 5th Biology Scavenger Hunt post — at least 5 photos.
- 10 **Fri., Aug 3**
1. Complete Part Three of *The Hot Zone* or *The Survival of the Sickest* and comment about it on the AP Biology Blog: <http://ahschoolapbio2013.wordpress.com/>
 2. 6th Biology Scavenger Hunt post — at least 5 photos.
- 11 **Fri., Aug 10**
1. 7th Biology Scavenger Hunt post — at least 5 photos.
- 12 **Fri., Aug 17**
1. Complete Part Four of *The Hot Zone* or *The Survival of the Sickest* and comment about it on the AP Biology Blog: <http://ahschoolapbio2013.wordpress.com/>
 2. 8th Biology Scavenger Hunt post — at least 5 photos.