Welcome to AP Biology! This course is designed to be the equivalent of a two-semester college introductory biology course (eight college credits) taken by biology majors during their first year. You will find this course to be a rigorous and rewarding experience. The following assignments will give you an idea of the work commitment required for this course. Assignments are due periodically throughout the summer so be sure to note due dates! The summer assignment must be completed in order to maintain enrollment in this course for the 2015-16 school year. I am looking forward to working with all of you this upcoming school year. Enjoy the summer, and feel free to contact me via e-mail if you have any questions regarding the assignments.

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<td>Letter of Introduction</td>
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<td>2</td>
<td>Survival of the Sickest Reading Guide</td>
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<td>4</td>
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<td>September 7</td>
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Task #1 Letter of Introduction

We are going to spend a lot of time together next year, so it is best if I get a head start on learning a bit about you. Your first assignment is to successfully send me an e-mail from your Gmail account. If you do not already have a Gmail account please set one up. **Due Date: July 6, 2015**

Draft an e-mail to me following these rules:

a. Use clearly written, full sentences. Do not abbreviate words like you are texting with a friend. Use spell check! This is a professional communication like you would have with a college professor, this is to serve as practice for your rapidly nearing future!

b. Address it to me at: beth.lancaster@naugatuck.k12.ct.us

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 “Mrs. Lancaster,” or “Dear Mrs. Lancaster,”

e. Now introduce yourself (your name) and tell me a little bit about yourself, like:
   - What are you career goals?
   - What are you general interests?
   - Do you have a job?
   - Do you have any scientific interests? If so, what are they?
   - What area(s) would you most like emphasized in this course?
   - How do you learn best? In addition please list what really works for you in a class, and what does not (ie: Power Point Lectures, Pod Casts, Web Tutorials, Discussion, Worksheets, Laboratories, Videos, Essay Writing etc.)
   - Was there anything that you liked about your earlier biology class?
   - 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.
Your work for the following two tasks must be typed and submitted electronically via turnitin.com. Please see attached directions for assistance on page 12.

Please be sure that you can claim ownership of all work submitted for both assignments. You may pull examples and quotes from the text but they must be cited using APA format. Consider using EasyBib.

Task #2 Survival of the Sickest Reading Guide (Due Date: August 3, 2015)

Have you ever wondered why some illnesses are commonly found in our population, but they don’t seem to help us survive? Obtain a copy of Survival of the Sickest to explore “how many of the conditions that are diseases today actually gave our ancestors a leg up in the survival sweepstakes” (Moalem, 2007.)


ISBN 978-0-06-088966-1

On the next page you will find guiding questions for the introduction and each of the chapters. Your responses will be graded for accuracy and completeness. Tasks 2 and 3 will be entered as a test grade for quarter one. Please refer to the scoring guidelines on pages 10 and 11.
**Survival of the Sickest**

**Introduction**

1. What is the “big” question the book will attempt to answer?

**Chapter I**

2. The author points out many ways in which iron impacts life. Identify/describe at least five.

3. In the context of this chapter, explain the author’s reference to Bruce Lee and to the barber pole.

**Chapter II**

4. Distinguish between each of the three types of diabetes.

5. What did the ice cores of 1989 reveal about the Younger Dryas?

6. Describe the body’s “arsenal of natural defenses” against cold.

7. Describe the connection between *Rana sylvatica* and diabetes.

8. In Chapters I and II several inherited disorders were discussed. **Create and complete a chart** with the following information: Disease/Disorder, Symptoms, Evolutionary Advantage.

**Chapter III**

9. Why do we need Vitamin D? Cholesterol? Folic acid?

10. Briefly describe the connection between the two concepts:
    a. tanning beds; birth defects
    b. sunglasses; sunburn
    c. hypertension; slave trade
    d. Asian flush; drinking water
    e. skull shape; climate
    f. body hair; malaria

11. What’s so fishy about the Inuits’ skin color?
12. Explain the good and the bad of ApoE4.

Chapter IV

13. Explain the role of G6PD.

14. Briefly describe the connection between the two concepts:
   a. European clover; Australian sheep breeding crisis of the 1940s
   b. Capsaicin; birds and mammals
   c. Malaria; air conditioning
   d. Favism; fava beans

15. Explain the following statement found on page 87: “Life is such a compromise.”

Chapter V: “Of Microbes and Men”

16. Create a parasite chart comparing and contrasting different parasites identified in the chapter.

17. Identify 3 ways in which microbes/parasites move from host to host.

18. For each pathway listed in question #17, explain the relationship of the mode of transmission to the virulence of the invader.

19. What is our advantage in the survive- and –produce race?

Chapter VI: “Jump Into the Gene Pool”

20. Briefly discuss the following terms/scientists:
   a) Jenner
   b) vaccine
   c) antibodies
   d) B-cells
   e) “junk DNA”
   f) Lamarck
   g) McClintock
   h) retroviruses
21. What is the Weissman barrier?

22. Make connections between the following terms:
   a. transposons; viruses; evolution
   b. sunspots; flu epidemics

23. Humans have about 25,000 genes and more than a million different antibodies. How is this possible?

24. What is a persisting virus?

Chapter VII: “Methyl Madness”

25. Make connections between the following terms:
   a) vitamin supplement; agouti mice
   b) snakes; long-tailed lizards
   c) Barker Hypothesis; fathers who smoke
   d) Smoking grandmothers; asthmatic children
   e) Betel nut chewing; cancer

26. Epigenesis may be partially responsible for the childhood epidemic of obesity. Explain.

27. “Good times mean more boys. Tough times mean more girls.” Explain.

Chapter VIII: “That’s Life: Why You and Your iPod Must Die”

28. Make connections between the following terms:
   a) Progeria; lamina A
   b) Hayflick limit; telomeres
   c) Cancer cells; stem cells
   d) Size; life expectancy
   e) Risky child birth; big brains and bipedalism

29. Explain the author’s iPod and aging analogy.

30. Identify the 5 lines of cancer defense.
31. What are the two accomplishments of biogenic obsolescence?
32. Compare and contrast the Savanna and aquatic ape hypotheses.

**Conclusion**

33. The author hopes that you will come away from this book with an appreciation of three things:

a) Life is in a constant state of creation
b) Nothing in our world exists in isolation
c) Our relationship with disease is often much more complex than we may have previously realized.

On a personal note, what would you add to his list?

34. “Nothing in biology makes sense except in the light of evolution.” How does the book, Survival of the Sickest, support this quote by Theodosius Dobzhansky, a noted evolutionary biologist?

Task #3 Survival of the Sickest Research Paper (Due Date: September 2, 2015)

This paper is intended to get you to use scientific literature for research. In his book, “Survival of the Sickest”, Moalem makes several (and I mean several) statements regarding connections between disease and either their cause or their historical significance. He does not provide much research to back many of these claims (though he does state they are mere speculative hypotheses). For example, on pg. 51 he asserts that people should get their cholesterol checked in summer when more cholesterol is being converted to Vitamin D – but is this really true? Your job is to pick two of these claims and perform further research on them to either prove or disprove what Moalem writes in his book.

You will need three references for EACH claim for a total of at least six references. Two of the six references may be from an Internet site, but the other four must be from research journals or books. Consider using the literature cited at the end of the book as a resource, Google Scholar, or databases available through the Naugatuck High School resource center and the Howard Whittemore Library. Please note that database passwords to use from home can be found on the last page.


Research Paper Requirements

- Introductory Paragraph
  - Tell me what you are going to write about and what you are trying to prove/disprove through your research
- 4-6 pages, double spaced. 1-inch margins, Times New Roman, 12-font
  - 4-6 pages DOES NOT include title page or reference page
  - Make sure Microsoft Word is set to Double spacing
- At least 6 references (4 must be from research journals or books)
- ERROR FREE (both spelling and grammar)
- A conclusion that brings the entire paper together
  - Your two claims can be separate, but the intro and conclusion should be cohesive and unifying
- See attached rubric on page 11 for other grading details
You will read, annotate and complete a review for one scientific journal articles. Annotations should be done directly on the article. Please refer to the non-fiction annotation guide written by Mrs. Messenger which has been provided along with the journal article copies. Complete a journal article review for the article after reading/annotating. Please note that I am posting the article review document on the school website if you would like to type your response (Mrs. Lancaster, File Manager, AP Biology.)

The article title is provided below. Part of the assignment is to determine the full and parenthetical citations.

Article: Independent evolutionary origins of landlocked alewife populations and rapid parallel evolution of phenotypic traits.

The content of the article will be used for discussion during our unit on Evolution.
Scoring

Task #2 Survival of the Sickest Reading Guide (36 Points)

Responses for each chapter will be evaluated using the following scoring rubric.

<table>
<thead>
<tr>
<th>Guided Reading Questions</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction, Conclusion (30 Points)</td>
<td>Responses were scientifically accurate and well thought out</td>
<td>Responses contained some minor content misconceptions</td>
<td>Responses contained major content misconceptions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Thoroughness</td>
<td>Student answered questions thoroughly, and generally went above and beyond to make connections (personal or content related)</td>
<td>Students answered questions thoroughly, but failed to make connections at any time</td>
<td>Student is missing information in responses</td>
<td></td>
</tr>
</tbody>
</table>
## Task #3 Survival of the Sickest Research Paper
### Informative-Explanatory Writing Rubric (20 Points)

<table>
<thead>
<tr>
<th>Score</th>
<th>Statement of Purpose/Focus and Organization</th>
<th>Development: Language and Elaboration of Evidence</th>
<th>Conventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>My main idea/topic is focused, clear and strong. It is introduced clearly and concisely.</td>
<td>I cite strong and thorough evidence for my main idea/topic that includes effective use of sources, facts, and details.</td>
<td>I have few, if any errors in my grammar or sentence formation. I effectively and consistently use proper punctuation, capitalization and spelling.</td>
</tr>
<tr>
<td>3</td>
<td>My main idea/topic is clear. It is mostly maintained and focused, but I may get off track occasionally.</td>
<td>I cite adequate evidence for my main idea/topic that includes the use of sources, facts and details. I try to integrate it into my writing, but sometimes I am too general.</td>
<td>I have some errors in grammar and sentence formation, but it is not a pattern of errors and improper sentence construction. I have some errors in my punctuation, capitalization and spelling.</td>
</tr>
<tr>
<td>2</td>
<td>My main idea/topic drifts from its focus and may be unclear or not completely maintained. Sometimes, I may get off track and lose my focus.</td>
<td>I do not consistently use reliable evidence for my main idea/topic. Sometimes my sources, facts and details are weakly integrated and/or do not effectively connect with my ideas.</td>
<td>I have frequent errors in my grammar that makes it difficult to understand my meaning. I make lots of mistakes in my use of punctuation, capitalization and spelling.</td>
</tr>
<tr>
<td>1</td>
<td>My main idea/topic has little or no focus and might even be confusing or vague. It drifts into other topics that seem to be randomly selected.</td>
<td>I may not use any evidence to support my main idea/topic. What I do use may be irrelevant or incorrect.</td>
<td>I have frequent and severe errors in grammar and sentence construction. My errors in punctuation, capitalization and spelling make it difficult to understand my work.</td>
</tr>
</tbody>
</table>

**Score Breakdowns:**

**Score 4:**
- My main idea/topic is focused, clear and strong. It is introduced clearly and concisely.
- I have clearly and effectively organized my writing, creating unity by using a variety of transitions, sequencing my ideas logically and crafting an effective introduction and conclusion that clearly addresses audience and purpose. I make strong connections between my ideas.

**Score 3:**
- My main idea/topic is clear. It is mostly maintained and focused, but I may get off track occasionally.
- My work is organized, but my ideas are not always connected with a sense of unity or purpose. I have adequate transitions and sequence my ideas logically. My introduction and conclusion address audience and purpose, but my connections between my ideas are inconsistent.

**Score 2:**
- My main idea/topic drifts from its focus and may be unclear or not completely maintained. Sometimes, I may get off track and lose my focus.
- I have not organized my work very well. It is inconsistent and may contain unrelated information. My transitions are inconsistent and I do not consistently sequence my ideas in a logical or connected manner. My introduction and conclusion may not address audience or purpose and my ideas are not well-connected.

**Score 1:**
- My main idea/topic has little or no focus and might even be confusing or vague. It drifts into other topics that seem to be randomly selected.
- I have not established any organization in my work. I may not use any transitions and I have used examples that have little or no connection to my ideas. I have no introduction or conclusion and no apparent awareness of audience or purpose.

**Statement of Purpose/Focus and Organization**

- Organization
- Elaboration of Evidence
- Language and Vocabulary
Paper submission to Turnitin

Instructions:

1. To register and create a user profile, go to www.turnitin.com and click on ‘create an account using an email address’. You will need the following information to register:

   Class ID:    10070202
   Password:   Darwin

2. Click on the class name. Your assignments will appear and click on the submit button to the right of the assignment name.

3. Select "single file upload" from the "choose a paper submission method:" pull down menu.

4. Enter a title for your paper.

5. Click on the browse button to locate the file in your computer.

6. Click open, then upload. Review the file then click submit to finalize the submission.

7. Turnitin currently accepts the following file types for submission: MS Word (.doc), WordPerfect (.wpd), PostScript (.eps), Portable Document Format (.pdf), HTML (.htm), Rich Text (.rtf) and Plain Text (.txt). All files submitted to Turnitin must be text based. Papers which have been scanned must be sent through Optical Character Recognition (OCR) software before they can be submitted to Turnitin.

8. For further assistance visit the Turnitin support tab or http://www.turnitin.com/static/helpCenter/submitting_as_a_student.php

9. In the event that there are issues with Turnitin please be sure to submit electronically via e-mail to beth.lancaster@naugatuck.k12.ct.us