

April 27, 2018

Dear Future AP Biology Parents and Students:

Welcome to AP Biology! Even as this year draws to a close, we are making preparations for AP Biology for 2018-19. This letter, and the paperwork which accompanies it, explains the summer assignments that you will need to complete prior to returning to school in the fall. The AP Biology course program covers a large amount of material and these assignments will increase the amount of class time we will have to spend on more difficult material. The summer assignments will cover some basic biological information as well as chemistry concepts.

The components of the summer assignment are as follows:

1. Letter of Introduction
2. Adopt a Plant
3. Summer Reading and Response Paper
4. Biology Picture Collection
5. Science Fair Project (Optional –For Extra Credit!)
6. AP Biology Supplies
7. Plagiarism Tutorial
8. Chapters 1 & 2 Guided Reading Worksheets

You may e-mail me with any questions at megan.hines@irsd.k12.de.us or use Schoology to message me. I will try to get back to you as quickly as possible, but I may not check my e-mail everyday throughout the summer. Alternatively, you may use the Remind app to ask me questions as well.

Please make sure to complete your summer assignments to avoid falling behind. I will not accept late assignments, even with a valid reason, so ensure that you are working ahead of the deadlines and you are able to access the internet from home. Be sure to complete the Plagiarism Tutorial, as it outlines the definitions of plagiarism and cheating; **it is expected that all summer work is completed independently using these guidelines.**

I am very excited to begin the AP Biology course, and am confident that it will enhance your science education at Indian River High School. I hope you all have a wonderful and relaxing summer, and I look forward to an enjoyable course next year.

Sincerely,

Mrs. Megan Hines



AP Biology 1—Summer Assignment Schedule

- *All assignments must be submitted by 11:59 PM on the date they are due.*
 - *Late assignments will not be accepted, even with a valid reason.*
 - *Please submit all assignments on Schoology unless otherwise stated.*

Friday, May 25 – Schoology Intro to AP Biology Quiz (5 formative points); Turn in signed forms (5 points); Pick up textbook and workbook in E112

Friday, June 15 – Letter of Introduction (10 points); Plagiarism Tutorial (20 points)

Friday, June 29– Submission of Science Fair Topic for approval with at least 5 resources! (Optional Assignment; emailed to me; 20 extra credit points)

Friday, July 6 – Biology Collection Items #1-10 (20 points; Schoology)

Friday, July 20 – Biology Collection Items #11-20 (20 points; Schoology)

Friday, July 27 – Science Fair Problem, Question, Introduction and Procedure due (Optional Assignment; emailed to me; 30 extra credit points)

Friday, August 3 – Biology Collection Items #21-30 (20 points; Schoology)

Friday, August 17 – Biology Collection Items #31-40 (20 points; Schoology)

Tuesday, September 4 (The first day of school!)

- Summer Reading Response Questions and Reflection (submit on Schoology) (30 points)
- Guided Readings for Chapters 1 and 2 (Bring in a physical copy) (10 points each)
- Bring in supplies (10 points)
- Bring in your summer reading book for peer share

Friday, September 7 – Bring in your plants for judging! (There will be prizes!) (30 points)

Note- summer work equals 210 formative points; there are roughly 500 formative points in the first marking period.



ASSIGNMENT #1

ADOPT A PLANT- 30 formative points

Basil:



Tomato:



My Objective:

To get you to experience that plants are living, breathing, growing, and responsive creatures, and to recognize the characteristics of living things. Also, one of my life projects and passions is working in my garden, so hopefully I can get you excited about this too!

Your Goal:

To nurture your plants successfully throughout the summer. Get them to grow, get them to branch, grow them big and bushy! Specifics on each plant:

- **Basil: A prize for the biggest, bushiest plant! You *don't* want this plant to flower.**
- **Tomato: A prize for the most tomatoes, by mass! (Your choice of variety, although you will need to make sure it has plenty of root space; you may begin with a small seedling plant instead of a seed for this one)**

Guidelines:

- You **MUST** start your plant from seed if basil seed; tomatoes may use a starter.
- You should start your plant as soon as possible so it can grow as large as possible and produce well!
- It should be in a pot, so you can transport it to school.
- To get full points for this assignment, you will write a reflection once school is back in session. If your plant dies, that just helps you understand what is required for life!

Questions:

How do I take care of my plant? How do I transplant my plant if need be? How do I stop my Basil from blooming? How do I get my plant to branch and get bushier? Do these plants like lots of sun or do they need some shade?

Answers:

Look it up! Do some research!

ASSIGNMENT #2

LETTER OF INTRODUCTION

Welcome to AP Biology!

We are going to spend a lot of time together next year, so it's best if I get a head start on learning a bit about you. Also I will use the Internet quite a bit next year for this course, so let's get you used to communicating with me.

Your first digital assignment is to successfully send a letter to your AP Biology teacher.

Due date: Friday, June 15, 2018

Draft a letter to me following these rules:

- a. Use clearly written, **full sentences**. Do not abbreviate words like you are on Instagram/Twitter/Facebook 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. Begin the letter with a **formal salutation**, like "Mrs. Hines," or "Dear Mrs. Hines"
- c. Now introduce yourself (your name) and tell me a little bit about yourself, like:
 - What do you like to do (hobbies, sports, music, interests, etc.)?
 - Do you have a job? Where is it? What are your responsibilities?
 - 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 science classes?
 - 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?
 - Anything else?
- d. Your letter should include a coherent introductory paragraph, a body paragraph with multiple details, and a closing sentence or paragraph.
- e. End the letter with a **formal closing**: "Cordially", "Sincerely", "Warm regards", etc. and add your name as if you signed a letter.
- f. Submit this letter on Schoology as a Word/Google Doc document or PDF file.

I will comment on all of your letters, so you'll know I received it once you get a response!

ASSIGNMENT #3

Summer Reading and Response Paper

Choose a book from the following list. Notice these are non-fiction books. You are required to write a typed, two page summary of the book due the first day back (12 font, 1.5 space). Please be sure that your report is no longer than 2 pages. Don't try to fool me with extra large margins or double spaces in between sentences; writing in science should be concise and you will likely find that it is tricky to not go over the 2 page limit. Your report should cover:

- (a) complete bibliographic information with background information on author (roughly about 1 paragraph)
- (b) a summary of the story/information (1-2 paragraphs; you don't need to mention every single detail)
- (c) the major scientific concepts covered (2-3 paragraphs)
- (d) a meaningful quotation from the book, what page you found it on, and why you chose the quotation (1-3 lines)
- (e) reflections about the book overall – how it influences you, recommend/not recommend and why (1 paragraph)

I recommend that you look up the book description on Amazon.com or another website to find one that will appeal to your interests. Have fun reading the book of your choice. All of these authors are engaged in the process of scientific inquiry. Reading about their pursuits will ease your transition into AP Biology. 😊

Submit your book writeup on Schoology on or before the deadline.

Book List:

Montgomery, Sy. *A Surprising Exploration into the Wonder of Consciousness*

Krakauer, John *Into the Wild*

Zimmer, Carl. *Evolution: Triumph of an Idea*

Pollan, Michael. *Botany of Desire*

Sacks, Oliver *The Man Who Mistook His Wife for a Hat*

Bearzi, Maddalena. *Dolphin Confidential: Confessions of a Field Biologist*

Skloot, Rebecca. *The Immortal Life of Henrietta Lacks*

Other titles- Submit request if you find another potentially suitable text

As you can see, there are varied titles to suit your interest: cell bio, medicine, evolution, ecology, genetics, etc. Find something you are interested in and will enjoy reading. 😊

IMPORTANT!! Bring your book into school on the second day for a peer share!

ASSIGNMENT #4

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 over the next two years. On the next page is the list of terms.

1. Each item on the list (next page) is worth 2 points, for a total of an 80 point formative grade. You are required to submit 10 photos and their description every two weeks on Schoology.

When I say “collect”, I mean you should collect that item by finding it and taking a **photograph** of that item. You will submit your photographs to me with appropriate **explanations / descriptions- this includes a definition of the term, and why your photo matches the term. Failure to include both portions will result in a point deduction.**

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 to me *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. The best way to prove that is to place an item in all of your photographs that only you could have added each time, something that you might usually have on you like a pen or a coin or a key or your cell phone, etc.

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 and a unique set of photographs. So working with other students means brainstorming, discussing, going on collecting trips together. It doesn't mean using the same exact 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. SUBMISSION:

Follow the assignment schedule included in the summer work packet. Photos must be submitted by 11:59 PM on the due date. You may submit items early, but no late submissions will be accepted. Please submit your items on Schoology, and **upload your file as a PDF**. Often files get warped if they are in other formats like Word or JPEG. If you don't have this ability, there are many web programs that will convert your file for you. Failure to upload photos in a readable format is not an excuse for late submissions, and these assignments will not be graded.

BIOLOGY COLLECTION TERMS

Below are the items you are to “collect”. An individual organism can only be used **once**, including humans. No double dipping in categories, I check for duplicates! 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 Delmarva. For example, the category is Different Biomes, and you can include up to 5 types of biomes.

1. Different biomes (3 must be local)
2. Different types of carbohydrates (glycogen, chitin, etc.)
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
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

INDIVIDUAL ITEMS

Each specimen is worth 2 points. You may only use each term once! These do not need to be native.

1. abscisic acid
2. adaptation of an animal
3. adaptation of a plant
4. altruistic behavior
5. analagous structures
6. animal that has a segmented body
7. anther & filament of stamen
8. archaeobacteria
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. detritivore
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. frond
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
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

ASSIGNMENT #5 (OPTIONAL FOR EXTRA CREDIT)

Science Fair Project

All students in Honors and AP level science classes are encouraged to participate in Science Fair. In previous years, we have had many students advance to and win awards in the county and regional competitions. The IRHS Science Department hopes to see similar successes this year.

Science Fair: What is it?

- Develop an experiment and take it through the complete process from developing a question to collecting data. The experiment needs to be testable in a high school setting!
- Then.....you will “showcase” your experiment.
- You will be required to design and perform a science experiment.
- Chosen individuals will be asked to go to the **IRHS science fair** during the 2nd Quarter.
- The top winners of each category will be given the chance to go to the **Sussex County (March), Delaware Valley Regional (April/Philadelphia), and Intel International (June?) Science Fairs.**
 - You could win money, prizes, and scholarships

Note:

An experiment is NOT a research paper! You should select a topic that you are able to hypothesize about and test that hypothesis, therefore there should be a question and a measurable answer!

Selecting a Topic

- Select a Topic of Personal Interest
- Do Some Background Research on the Topic
- Narrow Down the Topic
- Ask a Question About Relationships
- Identify Independent and Dependent Variables
- Be Sure the Variables are Measurable
- Avoid Questions Asking About Opinions

*Many students go to science fair websites and use “packaged” projects. If you want a chance of winning at any of the fairs, you must have a **unique project** idea that reflects creativity!*

Summer Assignment

During the summer, you must complete the following tasks related to your science fair project.

1. Begin a journal (I recommend a bound marble notebook, you can use your Do Now notebook if you'd like) where you write down ideas, questions, and begin collecting research. For example, you could take a nature walk and write down your observations of the creatures around you. It is ok if you start on several topics before settling on a final idea. Be sure to date your journal entries. Judges like to see you've been working over a long period of time!

2. Collect research related to your topic. Be sure to staple and/or glue any printouts into your journal. You must have at least 5 resources in you journal related to your final topic. For each resource, include the following information:

- Title of Resource
- Author (if applicable; it may be a university or a corporation)
- Publication (Book, magazine, website, etc. Be sure to include information that will allow someone else to find the same resource in the future.)
- In your own words explain how the research is related to your topic and how it is shaping your project!

3. Final Project Approval

Please include the following information in your journal so that I can approve your topic the first week of school.

- Project Category (see below)
- Project Question
- Hypothesis (If <independent variable>, then <dependent variable>)
- Justification for your project (Who cares? Why are you doing this project?)
- Necessary materials
- Proposed procedure (Step-by-step process you plan to follow)
- Project location (Where will you complete your research? Home, school, etc.)
- Timeline for project completion (Projects are typically due in early December. Make a plan for getting your project done on time!)

Overall Project Categories

- | | |
|------------------------------|--------------------|
| • Behavioral/Social Sciences | • Microbiology |
| • Earth and Space Science | • Botany |
| • Environmental Sciences | • Computer Science |
| • Medicine and Health | • Mathematics |
| • Biochemistry | • Physics |
| • Chemistry | • Zoology |
| • Engineering | |

Project Ideas that Mrs. Hines would be REALLY excited about 😊

- | | |
|-----------------------------------|---|
| • Solar energy | • Food- vegetable production, raising livestock |
| • Environmental impact | • Crustacean anatomy |
| • Pollution in our county | • Alternatives to plastics or fuel |
| • Remote operated vehicles (ROVs) | |

Experimental Design Refresher

- Identify Independent and Dependent Variables
- Identify Variables that Will Be Kept Constant
- Determine the Number of Trials
- Identify the Control if Present
- Set Up a Time Line for the Experiment
- Keep a journal – Take pictures throughout the process, notes, data

If you have questions, issues, concerns, etc., please e-mail me at megan.hines@irsd.k12.de.us

ASSIGNMENT #7

AP BIOLOGY SUPPLIES

Please use the summer as your opportunity to get your supplies for AP Biology early!

Come in prepared on Day 1. Having your supplies will count as a 10 point formative grade.

Materials

1. 3-Ring class notebook/binder (1.5-2 inches) for handouts. (I know that seems big, but you will likely need another one by third quarter.) Please make sure you have some loose-leaf paper in your binder as well. I do not require dividers.
2. Bound Marble notebook—to be used as Do Now notebook
3. Bound Marble notebook with graph paper – to be used as a laboratory notebook
 - Alternatively, you can purchase a COLLEGE SPACED (not wide rule) marble notebook, and purchase a separate pack of graph paper to tape/glue in
4. Blue or Black pens and pencils to be brought to class every day!
5. Two or more different colored highlighters
6. Choose one extra supply that will be of great use to your classroom:
 - Paper towels (we will use for dissections)
 - Glue sticks pack (we will use to tape in labs)
7. Textbook (will be supplied to you before summer): Biology (8th Edition) by Campbell and Reece. The textbook should be left at home for your nightly homework/studying.

Optional but Highly Recommended

AP Test Prep Companion Book for the Textbook

- a. I do have some copies of the older edition of this workbook for students to use, but my past students have wanted to write and highlight in these books so it is better to purchase it
- b. The companion book has **been updated to include the new AP Biology curriculum** which will go into effect with the 2014 test
- c. The book can be purchased as www.pearsonschool.com Search for ISBN #978-0133458145. The current purchase price is \$18.96.
- d. Order your book by August 6, 2018, to ensure that it arrives at your house in time for the beginning of the school year. The workbook is very helpful in completing the required Guided Readings.

Download the Remind app to get reminders about projects, homework, and tests!

****This form is due on/before May 26, 2017 to Mrs. Hines/Mrs. Dennis in person (E112).**

Worth 5 formative points**

Sign up for important updates from Mrs. Hines.

Get information for Indian River High School right on your phone—not on handouts.

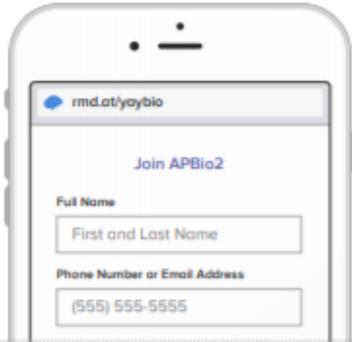
Pick a way to receive messages for APBio2:

A If you have a smartphone, get push notifications.

On your iPhone or Android phone, open your web browser and go to the following link:

rmd.at/yaybio

Follow the instructions to sign up for Remind. You'll be prompted to download the mobile app.



B If you don't have a smartphone, get text notifications.

Text the message @yaybio to the number 81010.

If you're having trouble with 81010, try texting @yaybio to (410) 394-9761.

* Standard text message rates apply.



Don't have a mobile phone? Go to rmd.at/yaybio on a desktop computer to sign up for email notifications.

- Yes, I give my child permission to use the Remind app to contact Mrs. Hines
- No, I do not give my child permission to use the Remind app to contact Mrs. Hines

Parent Signature: _____ Date: _____

Parent Email: _____