

# AP Biology Summer Assignment

## In Memory of Kim Foglia

This summer you will delve into the world of biology like you never thought you would in those hot months! We will explore many topics to whet your appetite for the coming year of hard work.

This summer assignment has been designed for the following purposes:

- to get you to think during those summer months to keep your mind sharp, because we will expect a lot out of it come September!
- to expand your vocabulary by familiarizing you with terms that we will be using in class.
- to introduce you to major concepts from AP Biology through non-classroom methods of learning.

### Schedule:

## DUE Friday, August 24, 2012

- “How Do I Take Care of a Coleus or Begonia?” will be submitted to [www.turnitin.com](http://www.turnitin.com).\*
- “Weekly Plant Documentation” and “An Album of Biological Terms” will be submitted to your Edline Homework Drop Box (Contents Section)

### ***\*Turn-it-in***

#### ***Fairfield Warde High School***

***Period 1      Class ID: 5180820***

***Password: Period-1***

***Period 4      Class ID: 5180829***

***Password: Period-4***

#### ***Fairfield Ludlowe High School***

***Period 1      Class ID: 5180854***

***Password: falcons1***

***Period 4      Class ID: 5180880***

***Password: falcons4***

***Period 8      Class ID: 5180858***

***Password: falcons8***

## DUE Beginning of the School Year

- Read the book “Survival of the Sickest” by Dr. Sharon Moalem (ISBN 0060889667). Be prepared for a book chat.

### Grading:

This summer assignment is worth a total of 75 points. This assignment counts as a lab grade for marking period 1. All components of the summer assignment must be completed by **August 24, 2012, no exceptions**. Late assignments will not be accepted and will result in a zero.

Feel free to contact your teacher if questions arise.

## ADOPT A PLANT

Meet your new responsibilities:

**Coleus:**



**Begonia:**



### Objective:

To get you to experience that plants are living, breathing, growing, responsive creatures.

### Your Goal:

You will receive either a Coleus or Begonia plant. Your goal is to nurture your plant successfully throughout the summer. Get it to grow, get it to branch, grow it big and bushy! Specifically...

- **Coleus: A prize for the biggest, bushiest *Coleus*. You *don't* want this plant to bloom!**  
**OR**
- **Begonia: A prize for the biggest, bushiest, *blooming Begonia*. You *do* want this plant to bloom a lot!**

### How do I take care of a Coleus or Begonia? [25 points]

Look it up! Do some research focusing on your plant. Your *textbook* is a GREAT resource!

In one page **MAXIMUM** answer the following questions.

1. *What does a Coleus or Begonia need to survive?*
2. *Do these plants like lots of sun or do they need some shade?*
3. *How do I transplant a Coleus or Begonia? Why?*
4. *If you have a Coleus: How do I stop my Coleus from blooming? Why?*
5. *If you have a Begonia: How do I keep my Begonia blooming? Why?*
6. *Using plant terminology such as apical and lateral meristems, how do I get my plant to branch and get bushier? [Section 34.4]*

**Document changes in your plant by taking weekly pictures. Arrange these photographs in a PowerPoint.**

### Bonus Prize:

Propagate your *Coleus* or *Begonia*. Come in with a vegetatively propagated offspring from your plant.

**What if your plant dies? You are still responsible for this assignment.**

## An Album of Biological Terms

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.

### 1. Each item is worth 2 points. You must earn 50 points.

- **Earn 50 points by “collecting” 25 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 arrange your photographs with appropriate **explanations / descriptions** on a **POWERPOINT**.
- An **explanation/description** of how your picture illustrates the term must be included.
- Each term must have an original photograph. The same photograph cannot be used for more than one term.

### 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 *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. So working with other students means brainstorming, discussing, going on collecting trips together. It doesn't mean using the same items! There are many choices... probability says there is a very slim chance that any two students will have the same items chosen for their 50 points...and we believe in the statistics!

1. **Each item is worth 2 points. You must earn 50 points by collecting 25 items from the list of terms.**
2. When I say “collect”, I mean you should collect that item by finding it and taking a **photograph** of that item.
3. You will arrange your photographs with appropriate **explanations / descriptions** in a **POWERPOINT Presentation**.

- |                                     |   |                             |
|-------------------------------------|---|-----------------------------|
| 1. action potential                 | 33. connective tissue                     | 66. monophyletic            |
| 2. activation energy                | 34. cuticle layer of a plant              | 67. Mullerian mimicry       |
| 3. adaptation of a plant            | 35. decomposer                            | 68. mutualism               |
| 4. adaptation of an animal          | 36. detritivore                           | 69. mycorrhizae             |
| 5. altruistic behavior              | 37. different alleles for the same trait  | 70. niche                   |
| 6. amniotic egg                     | 38. dominant vs. recessive                | 71. paraphyletic            |
| 7. analogous structures             | 39. ectotherm                             | 72. parasitism              |
| 8. angiosperm                       | 40. endotherm                             | 73. pathogen                |
| 9. animal that has a segmented body | 41. enzyme                                | 74. pedigree                |
| 10. anther & filament of stamen     | 42. epigenetics                           | 75. phenotype               |
| 11. apical meristem                 | 43. epithelial tissue                     | 76. photosystem             |
| 12. apoptosis                       | 44. ethylene                              | 77. phylogenetic tree       |
| 13. archaeobacteria                 | 45. eubacteria                            | 78. pollen                  |
| 14. asexual reproduction            | 46. eukaryote                             | 79. pollinator              |
| 15. ATP                             | 47. exoskeleton                           | 80. population              |
| 16. autotroph                       | 48. fermentation                          | 81. potential energy        |
| 17. auxin producing area of a plant | 49. genetic variation within a population | 82. predation               |
| 18. Batesian mimicry                | 50. genetically modified organism         | 83. prokaryote              |
| 19. bilateral symmetry              | 51. gibberellins                          | 84. protist                 |
| 20. biological magnification        | 52. glycogen                              | 85. recombinant DNA         |
| 21. bioluminescence                 | 53. gymnosperm                            | 86. redox reaction          |
| 22. bryophyte                       | 54. hermaphrodite                         | 87. reverse transcriptase   |
| 23. C3 plant                        | 55. heterotroph                           | 88. <i>r</i> -strategist    |
| 24. C4 plant                        | 56. homeostasis                           | 89. rubisco                 |
| 25. Calvin cycle                    | 57. homologous structures                 | 90. sliding filament theory |
| 26. CAM plant                       | 58. hydrophilic                           | 91. stem cell               |
| 27. cell cycle                      | 59. hydrophobic                           | 92. striated muscle         |
| 28. cell division                   | 60. introduced species                    | 93. succession              |
| 29. cellular respiration            | 61. keystone species                      | 94. taxis                   |
| 30. cephalization                   | 62. Krebs cycle                           | 95. territorial behavior    |
| 31. coevolution                     | 63. <i>K</i> -strategist                  | 96. transgenic              |
| 32. commensalism                    | 64. lipid used for energy storage         | 97. transpiration           |
|                                     | 65. meristem                              | 98. tropism                 |
|                                     |   | 99. unicellular organism    |
|                                     |   | 100. vestigial structures   |