

Arthur & Polly Mays Conservatory of the Arts
SUMMER ASSIGNMENT Biology 2018-2019

Welcome to Biology 1! This course is a comprehensive overview of the major topics in Biology and is designed to prepare you for the **Florida End of Course Test**, which all students are required to take at the end of the school year. It is a rigorous course that requires independent thinking and learning. You will be expected to do work outside of class, including independent reading, homework, projects, and studying. With that being said, this course can be very exciting, interesting, and fun! There is nothing more relevant than the study of life as you are a living being! Topics covered in this course include: Scientific Method, Introduction to Biochemistry, The Living Cell, Genetics, Evolution, Biodiversity, Ecology, and Human Anatomy.

As an incoming Biology student at Arthur & Polly Mays Conservatory of the Arts, you are expected to complete a summer assignment in Biology. This assignment is due on the second week of classes, August 30-31, 2018, as per class policy late assignments will not be accepted. Your assignment is an activity to help familiarize your teacher with who you are and your background in science. Have a great summer~ **Mrs. Green-David**

Assignment 1

Who are you? - Introduction Letter to Your New Teacher

In order for your teacher to get to know you better and be introduced to your writing style and experience in science, please write a letter of introduction. Please use friendly letter style and typed, double-spaced, 12-point Times New Roman font with one-inch margins. Please do not use any text message abbreviations in your writing. Be sure to include the heading and signature (make sure your name can be read!). Make this your very best effort. Since this will be the first writing assignment you submit to your teacher, the letter will be the first impression of you as a student.

The body of the letter should include the following:

- **Paragraph 1:** Begin this paragraph by telling a little about yourself, your family, and your pets. Where do you live or have lived in the past? You may also talk about any personality traits or pet peeves. Tell about your hobbies and interests, favorite books, movies, or music artists, things that will help your teacher get to know you! You may also tell about any outside jobs that you do or extracurricular activities and please include your magnet.
- **Paragraph 2:** Explain something about yourself or your experience that makes you unique. This might be something you think no one else has experienced or achieved. Write about anything that is special and interesting about you.
- **Paragraph 2:** Tell me what you think Biology is about and what this class will be like. What are your expectations, hope and goals for this class? Also tell me about your past experiences in the science classroom. What were some of your favorite activities or topics? What don't you like? What type of science student are you?
- **Paragraph 4:** Conclude your letter with plans or hopes for your future, beyond this classroom. What do you hope to gain from Arthur and Polly Mays Conservatory of the Arts, besides your diploma? What have you become involved in or hope to become involved in? What do you think about doing five years from now? Ten years from now?
- Be sure to conclude your letter with an appropriate closing and your signature. **You may email this letter to me at Kgreen@dadeschools.net**

Assignment 2

The answers to the questions are due on the second week of school (either 9/6 or 9/7). This will be your second graded assessment for the year. There will be a test on this during the fourth week of school. (9/13-14)

Materials required for the first day of school:

Complete answers to the summer packet, Composition notebook, Black or blue pen, pencil/sharpener/eraser, glue sticks (2) and highlighter

Part A: Define the meanings of the following prefixes and suffixes

A	Di	Hypo	Photo
Aer	Diplo	Inter	Phyll
Amyl	Endo	Kary	Plasm
Anti	Eu	Kinesis	Poly
Archae		Exo	Logy Pre
Auto	Gam	Lysis	Pro
Bi	Geno	Macro	Pseudo
Bio	Haplo	Micro	Sacchar
Cardi	Hetero		Mill Scope
Chlor	Homo	Mono	Stasis
Chromo		Hydro	Multi Therm
Cyt	Hyper	Phago	Tri

Part B: Define the following terms below and give examples.

*Scientific Method *Quantitative Data
*Hypothesis *Qualitative Data
*Law *Independent Variable
*Theory *Dependent Variable
*Observation *Control Variable

Assignment 3

Summer Packet Questions:

Use the Internet to research the answers to the following questions:

1. What are the steps of the scientific method? Explain each step
2. What did Anton van Leeuwenhoek discover?
3. What did Robert Hooke discover?
4. What did Matthias Schleiden discover?
5. What did Theodor Schwann discover?
6. What did Rudolf Virchow discover?
7. What is the cell theory?
8. What do all cells have?
9. What are the two varieties of cells?
10. What are prokaryotes?
11. What are eukaryotes?
12. How are prokaryotes and eukaryotes different?
13. Draw a prokaryotic cell (ex. Bacteria) and label its parts.
14. How old is the earth?
15. How old was the first prokaryotic cell?
16. What is the theory of endosymbiosis?
17. Do all cells look alike? What dictates a cell's form?
18. What unique structures does a plant cell have?
19. What unique structures does an animal cell have?
20. Draw a plant cell and label its parts.

21. Draw an animal cell and label its parts.
22. What is the function of the nucleus?
23. What is the function of the nucleolus?
24. Where can you find the nucleolus?
25. What are ribosomes?
26. What happens in the ribosome?
27. Where can you find ribosomes?
28. What is the endoplasmic reticulum?
29. Where can you find the endoplasmic reticulum?
30. What are the two types of endoplasmic reticulum?
31. What is the function of the rough endoplasmic reticulum?
32. What are the functions of the smooth endoplasmic reticulum?
33. What is the Golgi Apparatus/body?
34. Where can you find the Golgi apparatus?
35. What are the functions of the Golgi apparatus/body?
36. What is the lysosome?
37. What is the function of the lysosome?
38. Do plants have lysosomes?
39. What is apoptosis?
40. What is the mitochondrion?
41. Draw the mitochondria and label its parts.
42. What is the function of the mitochondria?
43. What is the function of vacuoles?
44. How are vesicles different from vacuoles?
45. What are plastids?
46. How are the three plastids different from one another?
47. What is the function of the chloroplast?
48. What is the function of the cytoskeleton?
49. How are the two types of cytoskeleton different from one another?
50. What are the centrioles and centrosomes for?
51. How are the centrioles and centrosomes related structurally?
52. What are cilia and flagella made out of?
53. What is the cell wall? Do animals have cell walls?
54. What is the cell wall of plants made out of?
55. What is the cell of fungi made out of?
56. What is the cytoplasm?
57. What is the function of the cytoplasm?
58. What is cytosol?
59. What is the cell membrane?
60. What is the function of the cell membrane?
61. Draw the cell membrane and label its parts.
62. Why is the cell membrane described as fluid mosaic?
63. What does being selectively permeable mean?
64. How are solvents and solutes different from one another?
65. What is hypertonic?
66. What is hypotonic?
67. What is isotonic?
68. What is passive transport?
69. How does passive transport occur?
70. What is simple diffusion? & Facilitated Diffusion?