The Scholars' Academy

An Accelerated College Preparatory School for Grades 6-12
27Q323, A Teaching and Learning Organization
"Technology Today, Smarter Tomorrow: Removing Time and Place from Teaching and Learning"
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June 14, 2013

Dear Parent/Guardian and Student:

Welcome to College Level Biology!

College level Biology is an exciting and challenging course for high school students emphasizing the development of conceptual understanding of modern biology and its applications to social and environmental concerns. Throughout the course, students have opportunities to improve their problem-solving skills, information processing and experience with applications of biology through lab investigations, readings, independent projects and digital learning support tools. This is a college level course; students enrolled in this class may register for credits through St. Francis College. In addition, this course is designed to prepare students for the SAT Subject Exam in Biology.

Students taking the college level Biology course are **required** to complete a summer assignment. The purpose of this assignment is to help you review fundamental skills that will help you complete all laboratory work successfully. **This summer assignment will be graded and you will lose 5 points each day your work is late.**

Please feel free to contact me if you have any question or concerns at any time. You can contact me during the summer via email at mpineiro@scholarsnyc.com. I am looking forward to an exciting academic year with you and your child!

Respectfully,

Ms. Pineiro

Big Ideas

Big Idea #	
1	The process of evolution drives the diversity and unity of life.
2	Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.
3	Living systems store, retrieve, transmit and respond to information essential to life processes.
4	Biological systems interact, and these systems and their interactions possess complex properties.

Science Practices

Science Practice #	
1	The student can use representations and models to communicate scientific phenomena and solve scientific problems.
2	The student can use mathematics appropriately.
3	The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
4	The student can plan and implement data collection strategies appropriate to a particular scientific question.
5	The student can perform data analysis and evaluation of evidence.
6	The student can work with scientific explanations and theories.
7	The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

Directions: Complete **Both Parts** to this summer assignment by **Friday, September 13, 2013**. You do not need to type your work. I will gladly accept **neatly** handwritten work.

Part I: Essay

a. Read the article about the scientific method from the following website: *http://scene.asu.edu/habitat/s_method.html* (you may also use other scientific reliable sources)
b. Write an informative essay in which you summarize and analyze the purpose of the scientific method and the steps of the scientific method. In your essay, clearly describe each step.
c. Cite at least three pieces of evidence from text (facts, concrete details, quotations, etc) from reliable science-oriented resources.
d. The essay must be at least one page in length and must exhibit conventional grammar, spelling, punctuation, capitalization and paragraphing.

Part II: Science Fair Project

Choose a topic for your science fair project. Clearly state the problem that you would like to solve and your hypothesis. Use the steps of the scientific method to design an experiment in order to test your hypothesis. ***This part is NOT to be written in an essay format. Bullet points with clearly labeled steps or a well-organized graphic organizer will be accepted.***

Common Core Standards:

WHST 11-12.2 a-e

Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

RST 11-12.1

Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.

RST 11-12.2

Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

Rubric: Scientific Method

Category	4 (Above Standard)	3 (Meets Standard)	2 (Approaching Standard)	1 (Below Standard)
Information/Explanation of text	Information/explanation of text clearly identifies the central ideas and concepts so that each new element builds on that which precedes it to create a unified whole.	Information/explanation of text identifies in general the central ideas and concepts so that each new element builds on that which precedes it to create a unified whole.	Information/explanation of text vaguely identifies the central ideas and concepts so that each new element builds on that which precedes it to create a unified whole.	Information/explanation of text does not identifies the central ideas and concepts so that each new element builds on that which precedes it to create a unified whole.
Evidence	Includes 3 or more pieces of evidence that is appropriate containing scientific data, examples, and/or ideas.	Includes 2 pieces of evidence that is appropriate containing scientific data, examples, and/or ideas.	Includes 1 piece of evidence that is appropriate containing scientific data, examples.	Fails to include evidence that is appropriate containing scientific data, examples.
Reasoning of Evidence to Develop Topic	Provides an in depth analysis of significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.	Provides a general analysis of significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.	Provides a poor analysis of significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.	Fails to provide an analysis of significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
Writing Conventions	Uses varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. Demonstrates control of conventional spelling, punctuation, paragraphing, capitalization, and grammar.	Uses varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. Demonstrates control of conventional spelling, punctuation, paragraphing, capitalization, and grammar, with few errors.	Uses some or none transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. Demonstrates control of conventional spelling, punctuation, paragraphing, capitalization, and grammar with errors that occasionally hinder comprehension.	Fails to varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. Demonstrates a lack of control of conventional spelling, punctuation, paragraphing, capitalization, and grammar. Paper is illegible.