

Science Department

Summer Reading Assignments 2010-2011

Rising Grade 9 and 10 Biology: **See Research Assignment for details**

Rising Grades 11 and 12,

Honors Physics: **A Brief History of Time by Steven Hawking**

Environmental Science: **Silent Spring by Rachel Carlson**

Physiology: **Brave New World by Aldous Huxley**

Summer Reading Assignment: Biology Honors – Grade 9 and 10

- Students who are enrolled in Honors Biology, course #3204, must read the following article before the first day of classes in September:

Lindsey, Rebecca, “Tropical Deforestation,” Earth Observatory, March 30, 2007

- The article may be found at the earth observatory website that is maintained by NASA. (<http://earthobservatory.nasa.gov/Library/Deforestationp> - Click on the icon at the bottom of the page that is labeled “View Printable Format of Full Article.”)
- You are required to print out the article and to bring it with you to your first Biology class. The article is 21 pages long. There are an additional four pages of citations-do **not** print these pages. You are expected to bring only the 21-page article with you.
- You must carefully read the article and then prepare a minimum of four and a maximum of five 3” by 5” note cards.
 - One card must be devoted to vocabulary terms. You must list and define terms that are unfamiliar to you. You must list a minimum of five terms.
 - The remaining three or four cards may be used for note taking.
- When you read the article you should pay special attention to the following topics:
 - What are tropical forests and why are they important?
 - Where can they be found?
 - What is deforestation and what are its causes?
 - How does deforestation impact the diversity of living things?
 - How does deforestation affect climate?
 - What changes can it cause in human society?
 - What are the effects of deforestation on soil and agriculture?
 - What methods can be used to track these effects?
 - What are some strategies that can be used to help to solve the problems caused by deforestation?

You will be required to complete a writing assignment based on this article during the first week of school. Students will have prior notice of the writing activity and are required to bring their copy of the article and all note cards to class.

This project will be evaluated using the following rubric:

| | % of Total Assignment Grade |
|--|------------------------------------|
| Copy of the Article brought to class on the first day | 5% |
| Vocabulary Card brought to class on the first day | 10% |
| 3-4 cards with notes brought to class on the first day | 10% |
| Response to Writing Prompt Done in Class | 75% |
| Total | 100% |
| | |

Summer Reading: Biology – Grade 10

- Students who have selected Biology, course #3203, must read the following article before the first day of classes in September:

Riebeek, Holli, “Defining Desertification,” earth observatory, January 3, 2007

- This article can be found at the earth observatory website that is maintained by NASA. Use the following address:
<http://earthobservatory.nasa.gov/Study/Desertification> Click on the icon at the bottom of the page that is labeled “View printable form of the full article.”
- You must carefully read the article and then prepare a minimum of four and a maximum of five 3” by 5” note cards.
 - One card must be devoted to vocabulary terms. You must list and define terms that are unfamiliar to you. You must list a minimum of five terms.
 - The remaining three or four cards may be used for note taking.
- When you read the article you should pay special attention to the following topics:
 - What is desertification?
 - Where can it be found?
 - What some possible causes of desertification?
 - How does desertification impact living things?
 - How does drought impact the land?
 - What is the vegetation index?
 - How are scientists using technology to track desertification?

You will be required to complete a writing assignment based on this article during the first full week of school. Students will have prior notice of date for the writing activity and are required to bring their copy of the article and all note cards to class on that day.

| | % of Total Assignment Grade |
|---|--|
| Copy of the Article brought to class on day of writing activity | 5% |
| Vocabulary Card brought to class on same day | 10% |
| 3-4 cards with notes brought to class on same day | 10% |
| Response to Writing Prompt Done in Class | 75% |
| Total | 100% |

Summer Reading: Honors Physics – Grades 11 and 12

Book: A Brief History of Time, Steven Hawking

Publisher: New York: Bantam Books, 1996

Students who are registered for Honors Physics 3404 will need to do the following...

- Purchase the text - any edition is acceptable but the illustrated, updated and expanded edition is best. This book is available on sites such as Amazon.com.
 - Carefully read chapters 1 (Our Picture of the Universe) and 2 (Space and Time).
 - As you read these two chapters you will prepare several note cards...
 - One note card will be for vocabulary terms. You should define: proton, neutron, electron, quark, black hole, big bang, and dark matter (refer to the glossary). You may also define any other terms you come across that are unfamiliar to you.
 - A second note card will be devoted to describing various scientists mentioned in the book. You should *briefly* characterize no less than seven of the scientists or philosophers mentioned in chapters 1 or 2.
 - An additional five note cards will be used for taking notes on chapters 1 and 2
 - Read the first seven pages of Chapter 5 (Elementary Particles and the Forces of Nature) You do not need to take notes on this part. The material in this chapter should be familiar to you from Chemistry class.
 - Optional: Read Chapter 6 (Black Holes) or any other chapter that interests you.
 - When you read the first two chapters you should pay special attention to the following questions:
 - How did humans originally picture the universe?
 - How did ideas about the universe change as time went on?
 - Who were some of the leading scientists involved in transforming the way we think of the universe?
 - What role did religion play in our early view of the universe?
 - Which scientists studied and experimented with motion of bodies?
 - How did the Newton's classical theories of physics compare with Einstein's theories?
- ***Note:** You do not need to write answers to the above questions. You just need to think about them as you do the reading and take notes.

You will be required to complete a writing assignment based on the required reading when you return from summer vacation. The date will be announced in advance. The overall assignment will be evaluated according to the rubric on the back of this page.

General Scoring Rubric for the Entire Reading Assignment

| Part | Percent of the Total Assignment Grade |
|--|--|
| Note card with the defined vocabulary terms | 5% |
| Note card with the scientists' brief descriptions | 5% |
| 4 to 6 note cards with notes from chapters 1 and 2 | 15% |
| Written composition | 75% |
| Total | 100% |

* Note: A separate, holistic scoring rubric will be used to grade the written composition. This rubric will be provided to students prior to the date of the assignment.

Summer Reading: Environmental Science – Grades 11 and 12

Text: Silent Spring, by Rachel Carlson
Publisher: Boston: Houghton Mifflin Company. 1962

Please read the first five chapters (pg 1-61) over the summer. We will continue reading the book over the first two terms.

Expectations:

- Students are expected to purchase the assigned text, which can be found online at amazon.com or half.com. Any edition of the text is acceptable.
- Students must *actively* read pages 1-61 over the summer. Actively reading requires that you highlight and take notes on important or thought provoking parts of the reading.
- Students will write a note card (3x5 index card) for each of the five chapters of the reading assignment. The contents of the note card will reflect the content of the chapter as well as thoughts that it provoked in the student. Each chapter has a different focus:
 - Chapter one** is a short fictional story. You should focus your note card on the emotions that the author is trying to invoke. Why is the silence so important to the premise of the book?
 - Chapter two** paints a picture of an insect free world and introduces a new term to the world -- organic. Focus your note card on the juxtaposition of the human need to produce food and the need to keep the biodiversity high. Can you see a solution to the problem?
 - Chapter three** introduces a barrage of insecticides used in agriculture including the infamous DDT. Pay careful attention to the different types of poisons and what they are used for. Keep organic alternatives in the back of your mind. List a minimum of 5 toxins, what they are used for, and whether or not they should be used.
 - Chapter four** begins the conversation on water's interactions with the environment and the introduction of toxins. Focus your note card on the impact of toxins in the water supply. List 5 impacts indicated in the chapter(s).
 - Chapter five** focuses on the soil. You should pay careful attention to what is needed in plants and in the soil in order to maintain a healthy environment; and, how certain pesticides prevent this from happening.
- You will be permitted to bring these note cards with you for use in responding to a writing prompt. The note cards will be submitted with the writing response.
- All students are expected to respond to a writing prompt at some point during the first weeks of school.

Rubric for Assessment

(The following is a general outline of how the summer assignment will be graded.)

5 Note cards:

A total of 5 standard sized -3x5 index cards, one per chapter, used for note-taking as described above. (Please see guidelines above on how to structure your note cards.) These cards will be submitted on the day of the writing prompt.

1 quiz grade

Book on day of the writing response:

The book, with highlighted notes in the margins, must be presented on the day of the writing response. The notes should be written in a way that will help you during the writing response and in discussions of the text during classes. Everyone is required to participate in the discussion and you will be asked to refer to the text to make your point/site evidence to support your point.

1 homework grade

***Response to the writing prompt:**

1 test grade

*a separate descriptive holistic scoring rubric will be used to grade the composition.

Summer Reading: Physiology – Grades 11 and 12

Students who have selected Physiology, course #3423, must read the following book before the first day of classes in September:

Book: Brave New World, by Aldous Huxley. Copyright 1932

- You must carefully read the book and then prepare a minimum of five and a maximum of seven 3” by 5” note cards.
 - One card must be devoted to vocabulary terms. You must list and define terms that are unfamiliar to you. You must list a minimum of five terms.
 - The remaining five or six cards may be used for note taking.

- When you read the book you should pay special attention to the following topics:
 - Who are the major characters?
 - Do the major characters change?
 - If so, in what ways?
 - What is the impact of technology the development of the major characters?
 - In what ways was Huxley’s prediction of the future accurate?
 - In what ways was his prediction wrong?

You will be required to complete a writing assignment based on this book during the first full week of school. Students will have prior notice of date for the writing activity and are required to bring their copy of the book and all note cards to class on that day.

| | % of Total Assignment Grade |
|--|------------------------------------|
| Copy of the book brought to class on day of writing activity | 5% |
| Vocabulary note card brought to class on same day | 10% |
| 5-6 cards with notes brought to class on same day | 10% |
| Response to Writing Prompt Done in class | 75% |
| Total | 100% |