

AP Environmental Science

Mrs. Bauch

Notre Dame High School

Welcome to AP Environmental Science! The level of expectation for this type of course is very high. Only students who are committed to high standards of excellence will succeed. This course will provide you with the foundation needed to take and pass the AP Exam as well as prepare you for future college work. It is my hope that this coming year will be a valuable learning experience for each of you. That being said, let me give you a little more information about this course:

- This AP Environmental Science course is designed to engage students with the scientific principles, concepts, and methodologies required to understand the interrelationships within the natural world.
- Students will identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with these problems, and examine alternative solutions for resolving or preventing them.
- Environmental science is interdisciplinary, embracing topics from geology, biology, environmental studies, environmental science, chemistry, and geography.
- The course is designed to be the equivalent of a one-semester, introductory college course in environmental science.
- Students need to have successfully completed two years (with an 80 or better) of honors high school laboratory science, namely honors biology and honors chemistry.
- Due to the quantitative analysis required in this course, students should expect to use the skill sets of algebraic manipulation and algebraic thinking that have been presented in STEM, and further honed in Biology and Chemistry during their previous years.

As you can see, we have a lot of ground to cover before we sit for the exam in May. To that end, I would like to take this opportunity to talk to you about the AP Environmental Science Summer assignment. I am of the mind that summer is the time for you to relax, so there will be only a short mandatory assignment due upon your return. This assignment will start off the APES curriculum with you researching some important environmental regulations. Throughout the course, I will be working on the assumption that because you have completed this assignment, you are versed in these regulations regarding their intent and purpose. We will be discussing them as we cover the various units on energy types, resources and environmental impacts. **Your simple assignment is:**

For each of the listed environmental regulations, you are to research and document the following information:

- 1) The date of the protocol, act or regulation

- 2) A summary of the purpose or intent of the regulations/protocol or act
- 3) A brief description of any controversy surrounding the act, regulation or protocol

Remember, the more you know about each of these, the easier it will be for you when we touch on them in class. These regulations and acts will not be taught in class but rather referred to as they apply to the curriculum, so it is imperative that you have a reasonable working knowledge of what they are. This means, just copying and pasting from the internet **WILL NOT WORK!!** Make sure you have your description in your own words so that you truly understand what these regulations hoped to achieve or protect.

You will need to turn in your written summary of each regulation on the second full day of class. As this is a second semester class that means the second day we meet. I will collect your written summary (hard copies only) and you will be asked to take a brief quiz on these regulations. Once the quiz has been completed, I will return your summary, so that you have it to refer to throughout the class. You will receive a grade for the summary and for the quiz.

Important Environmental Regulations:

CLEAN AIR ACT

CLEAN WATER ACT

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA)

MONTREAL PROTOCOL

KYOTO PROTOCOL

ENDANGERED SPECIES ACT

SAFE DRINKING WATER ACT (SWDA)

DELANEY CLAUSE OF FOOD, DRUG, AND COSMETIC ACT

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

Enrichment Section:

The remainder of this study packet covers topics that should be considered *enrichment* in preparation for your upcoming AP Environmental Science course. As such you will *not* be held accountable for completing this material by your AP teacher in regards to the assessments you *will* be receiving based on your completion of the earlier content in this packet. However, any independent research you elect to do towards understanding the following concepts will be extremely beneficial as you encounter these topics in your upcoming AP Environmental Science course.

Evolution:

Enduring Understandings:

Life evolves through interactions with the environment.
Individual characteristics impact ability to survive and reproduce.
The universe is ever-changing, but predictable.

Prior Knowledge/Connection to Previous Curriculum:

Analysis and evaluation of scientific evidence (STEM)
Cellular nature of life (Biology)
Biologically important macromolecules (Biology)
Nature of ionic and covalent compounds and bonds (Chemistry)

Links for further research:

<https://www.ck12.org/c/earth-science/theory-of-evolution-by-natural-selection/lecture/natural-selection-and-the-owl-butterfly/>

<https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/5.14/related/lecture/mechanisms-of-evolution%3a-how-does-variety-arise>

Photosynthesis:

Enduring Understanding:

Energy is not created or destroyed, but converted into different forms

Prior Knowledge/Connection to Previous Curriculum:

Biologically important macromolecules (Biology)
The nature and properties of water (Biology)
Exothermic vs endothermic reactions (Chemistry)
Overview of the laws of thermodynamics (Biology)

Links for further research

<https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/2.21/related/lecture/photosynthesis-ka>

<https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/2.22/related/lecture/photosynthesis%3a-calvin-cycle>

If you have any questions about this assignment, please feel free to email me at brennan@ndnj.org , at your convenience.

Have a great summer and I truly look forward to working with you in the Spring!!

Sincerely,

Hope Bauch

