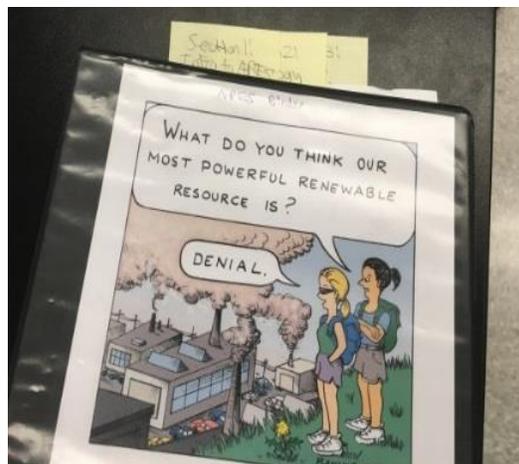


Newberry High School  
APES 2019 Summer Assignment

**Welcome to APES!**

The two main goals of APES are to help you develop a conceptual framework for modern biology and to gain a deeper appreciation of science as a process (as opposed to an accumulation of facts). Because of the rapid pace of discovery in the life sciences, our primary emphasis is on developing an understanding of unifying concepts that connect the major topics of APES. The AP Environmental Science Curriculum centers around six course themes and you will need to not only know these but also understand how they all relate:



- 1. Science is a process.**
  - Science is a method of learning more about the world.
  - Science constantly changes the way we understand the world.
- 2. Energy conversions underlie all ecological processes.**
  - Energy cannot be created; it must come from somewhere.
  - As energy flows through systems, at each step more of it becomes unusable.
- 3. The Earth itself is one interconnected system.**
  - Natural systems change over time and space.
  - Biogeochemical systems vary in ability to recover from disturbances.
- 4. Humans alter natural systems.**
  - Humans have had an impact on the environment for millions of years.
  - Technology and population growth have enabled humans to increase both the rate and scale of their impact on the environment.
- 5. Environmental problems have a cultural and social context.**
  - Understanding the role of cultural, social and economic factors is vital to the development of solutions.
- 6. Human survival depends on developing practices that will achieve sustainable systems.**
  - A suitable combination of conservation and development is required.
  - Management of common resources is essential.

**What to do before the first day of school:**

- Email me at [kageah@gm.sbac.edu](mailto:kageah@gm.sbac.edu) from the email address that you prefer to receive APES related communication. Over summer your passwords are reset by the school district however you can still send me that email. If you encounter problems with your summer assignments, you can contact me at the address listed above.
- **Get the text book from the Library** – *Living in the Environment*
- Purchase a copy of *5 Steps to a 5- Elite Student Edition: AP Environmental Science 2020* by Linda D. Williams. *This book will be released August 2, 2019, but it is available for pre-order now.*
- APES was designed by a select group of college professors and high school science teachers to be equivalent to an introductory college environmental science course. Visit the College Board site below to explore what an AP Environmental Science course is like:  
<https://apstudent.collegeboard.org/exploreap?affiliateId=apcentral&bannerId=exploreap1>
- We have a small problem in AP Environmental Science. Each year new advances in science are discovered but the length of the school year (and when the APES Test occurs) stays the same. What does this mean? We are short on time. In order to cover ALL of the material, you are responsible for reviewing the several sections on your own. Here is what you are to do:

1. **APES Summer 2019 Summer Math Review:** Print and complete the [APES Math Review](#) and the [APES Math Answer Sheet](#): Complete the Summer Math Assignment to the best of your ability. Use the Answer Sheet to show your work and your answer. There are no calculators allowed so you must show your work.
2. **APES Summer 2019 List of Facts:** Memorize [this information](#). Make flashcards that you can show me the first two weeks of school. You will have daily quizzes on these terms the week of school. In addition, we will include these facts in every test and quiz throughout the year.
3. You will have daily quizzes starting on Thursday, August 22rd. Use this [document](#) for information about quiz format and topics.
4. **APES Content: Topics**
  - a) Biogeochemical cycles (N & P Cycles and Hydrologic & C Cycles)
  - b) Ocean Acidification
  - c) Dead Zones

**Instructions:** Print out the APES Content [Cover Page](#) and attach it to the front of the assignments below.

- a. **Biogeochemical Cycles Instructions:** Watch the following videos and answer the guided viewing worksheets.
  - i. [Nitrogen and Phosphorous Cycle Video](#)
  - ii. [Crash Course: Nitrogen and Phosphorus Cycle Guided Viewing Worksheet](#) (print out and write directly on the worksheet)
  - iii. [Hydrologic and Carbon Cycle](#)
  - iv. [Crash Course: Hydrologic and Carbon Cycles Guided Viewing Worksheet](#) (print out and write directly on the worksheet)
- b. **Ocean Acidification**
  - i. **Part I: videos**
    1. **Instructions:** Watch the following videos and take notes regarding Ocean Acidification.
    2. **Ocean Acidification Notes [Template](#)** (print out and write directly on paper).
    3. [Ocean Acidification in a Nutshell](#)
    4. [Acid Test: The Global Challenge](#)
  - ii. **Part 2: Article**
    1. **Instructions:** Read the article regarding Ocean Acidification and use the Article Summary Worksheet to take notes on this article.
    2. [The Dangers of Ocean Acidification Article](#)
    3. [Ocean Acidification Article Summary Worksheet](#) (print out and write directly on paper).
- c. **Dead Zones**
  - i. **Part I: videos**
    1. **Instructions:** Watch the following videos and take notes regarding Dead Zones.
    2. **Dead Zones Notes [Template](#)** (print out and write directly on paper).
    3. [Nasa discovering dead zones in oceans and lakes](#)
    4. [Hypoxia: Dead Zone](#)
  - ii. **Part 2: Article**
    1. **Instructions:** Read the article regarding Dead Zones and use the Article Summary Worksheet to take notes on this article.
    2. [Enriching the Sea to Death](#)
    3. [Dead Zones Article Summary Worksheet](#) (print out and write directly on paper).

## Assignment #5 – Video Notes – due 1<sup>st</sup> day of APES

Watch the videos listed below and take **hand-written** notes on each of them. The note should be your **original work**. EACH note sheet will be scored 0 to 5 based on completeness and thoroughness as shown in the rubric below. The following video note pages will not be accepted late nor will they be accepted typed. You will watch seven videos that are meant to apply to AP Biology but apply equally well to APES.

#	Video Content	Links
1	Environmental Science	<a href="https://youtu.be/LE9KTG9PFho">https://youtu.be/LE9KTG9PFho</a>
2	The Scientific Method	<a href="https://youtu.be/SMGRe824kak">https://youtu.be/SMGRe824kak</a>
3	CER (Claim- Evidence-Reasoning)	<a href="https://youtu.be/5KKsLuRPsvU">https://youtu.be/5KKsLuRPsvU</a>
4	AP Science Practice 1 Model and Representations	<a href="https://youtu.be/v5Nemz_cVew">https://youtu.be/v5Nemz_cVew</a>
5	AP Science Practice 2 Using Mathematics Appropriately	<a href="https://youtu.be/jgqYISKoXak">https://youtu.be/jgqYISKoXak</a>
6	AP Science Practice 3 Formulate Questions	<a href="https://youtu.be/2zB272Ak63A">https://youtu.be/2zB272Ak63A</a>
7	AP Science Practice 4 Data Collection Strategies	<a href="https://youtu.be/AzTXnne40wU">https://youtu.be/AzTXnne40wU</a>
8	AP Science Practice 5 Analyze Data and Evaluate Evidence	<a href="https://youtu.be/0JqukouOtZA">https://youtu.be/0JqukouOtZA</a>
9	AP Science Practice 6 Scientific Explanations and Theories	<a href="https://youtu.be/3gK1xWNM7kk">https://youtu.be/3gK1xWNM7kk</a>
10	AP Science Practice 7 Connecting Knowledge	<a href="https://youtu.be/7l4bcs49JP8">https://youtu.be/7l4bcs49JP8</a>

0 No Credit	2 Below expectations	3-4 Complete	5 Exceeds expectations
No notes OR copied from a peer.	Several criteria are missing from entry	All criteria are met, but there's room for improvement within criteria OR one criterion is missing from entry.	All criteria listed below are met or have been exceeded for each entry.

### What does work that “exceeds expectations” have?

- ✓ Each video’s notes are on a different page.
- ✓ The video’s title is written as it appears in the video on the top line of the paper.
- ✓ The notes are legibly written.
- ✓ Highlighting or colors are used to emphasize key points, new vocabulary, and/or important concepts.
- ✓ Examples are documented in some way when given in the video.
- ✓ Pictures, charts, or graphs are used to display details provided in the video.
- ✓ A summary of the video content is provided at the end of the notes with an idea about how this information can be applied to AP Environmental Science. Please emphasize the summary in some way (title it, star it, highlight it, etc.) Notes are to be *original work* and are not to be copied from a peer – these serve as a log of what you have learned from the video. Copying them from a peer and not watching the video does you no good. You will receive zero credit if you are found submitting work that is too closely aligned with a classmate’s work.

I am truly looking forward to working with you next year!

Best regards,  
Ms. Kage