

Dear AP Environmental Science Class of 2018-19,

Welcome to AP Environmental Science! Students who enroll in APES should be ready and willing to devote sufficient time, focus, and energy to class assignments, including daily text readings, taking extensive notes inside and outside of class, preparing for frequent quizzes & exams, participating in laboratory & field experiments, writing reports, giving oral presentations, participating in class discussions, & completing other various class assignments. **Students who are not able or willing to devote sufficient time, focus, and energy to this course should consider taking this course at another time.**

In order to be better prepared, we need to do some work over the summer. The purpose of this assignment is to get you thinking about the environment in which we live and help prepare you for your studies in APES for the upcoming school year. You should plan on immersing yourself in the subject of environmental science for the next 12 months. Please complete the following assignment this summer (**Due the 1st day of school –Monday, August 13, 2018**):

1. Online video resources. *You will be turning in the handwritten notes. Please look at the last page of this packet for formatting instructions.*
 - a. Bozeman AP Environmental Science at <http://www.bozemanscience.com/ap-environmental-science/> -watch the **FIRST 2 videos** and take notes. In the notes, make a list of the videos available (watching additional videos is optional).
 - b. Watch the video “Emerging Science: Ecological Economics” at <http://video.vpt.org/video/1409029473/> -watch the video and take notes.
 - c. Watch the TED Talk “Pavan Sukhdev: Put a value on nature” https://www.ted.com/talks/pavan_sukhdev_what_s_the_price_of_nature?language=en – watch the video and take notes.
 - d. Crash Course Ecology at <https://www.khanacademy.org/science/biology/crash-course-bio-ecology> –Make a list of the videos available in the notes (**optional to watch the videos that interest you**). ***The ecology videos are at the bottom of the page.**
 - e. You Choose: Find at least 2 more videos/movies applicable to APES, watch the videos and take notes. Be sure to list the location of the videos/movies (how I can find the source). **One video resource must contain a math review!**
2. Biochemical cycles:
 - a. It is a big word; but in reality, it’s not all that daunting. You have worked with/studied most of these in the past.
 - b. Throughout the year, we will be referring to these cycles and determining how they impact man, and more importantly, how man impacts these cycles, often times with negative effects on the environment.
 - c. In addition, knowledge of these cycles will help tie together the various concepts that we will be learning. Trust me, if you understand these cycles and can explain how they tie concepts together, this class and the AP exam will be much easier.

Research the following cycles:

- | | |
|----------------------|---|
| ★ The Water Cycle | ★ The Phosphorus Cycle |
| ★ The Carbon Cycle | ★ The Sulfur Cycle |
| ★ The Nitrogen Cycle | ★ The Rock Cycle (including Plate Tectonics!) |

For each of the above cycles, do a write-up including the following:

- ★ A **handmade** (not downloaded/printed) drawing/concept diagram of each cycle. Include arrows showing the directions of travel of each component of the cycle. Label the diagram using terms/names of each type of matter involved in the cycle. If applicable, state whether the type of matter in each stage of the cycle is a pollutant, consumer, producer, or nutrient source (rock cycle excepted).
 - For the Rock Cycle – Include a detailed diagram showing how each of the three types of rock are formed, **and** the interactions between the rock types. In addition, include detailed diagrams/descriptions of each of the plate interactions (there are 5).
- ★ Write (do **not** type) a minimum one-page description of each cycle. Describe how each component of the cycle is formed, the forces or substances that make that component, how the components provide nutrition (if a food source) and who gets the nutrients, and how the component pollutes. In addition, state how man affects the cycle in either a positive or negative manner (sometimes we are both)
 - If properly completed, this project will consist of a minimum of 12 pages (6 drawings and 6 pages of write-up). Take pride in your work. Don't just throw this together at the last minute. You will not only get a grade on this assignment, but you will be using it throughout the year as a reference. The more quality work you put into this, the more useful it will be for you in the upcoming year. Almost everything we are going to study/learn this year can be tied into one or more of these cycles.
- ★ To clarify: each cycle should have a minimum of 2 pages dedicated to it; if it is “book” style, the left hand page will be a labeled diagram, and the right hand page will be the handwritten description of the cycle.

Remember, you are entering an AP level class, so you will be doing some heavy-duty work – show me that you are capable of organization, time-management and writing brief, quality essays. We will be doing a lot of writing. Let's start practicing now. You should plan on working on this assignment a little at a time.

3. **Major Air Pollutants—Note cards:** *Sulfur dioxide, nitrogen oxides, carbon oxides, particulate matter, tropospheric ozone, & lead*

**Directions: On the FRONT: Write the pollutant's name with a HAND drawn picture or diagram that represents that term (must be at least 3 colors).
BACK: Definition/description, where it comes from (in nature and from humans), and how it negatively impacts humans and the environment.**

4. **Introduction letter:** Draft (and send) an e-mail (**due to me by Tuesday July 31st**) following these rules:
- a. Use clearly written, full sentences. Do not abbreviate words such as you would if you were texting a friend. Use spell check! This is a professional communication like you would have with a college professor, so let's practice...
 - b. Address it to the appropriate teacher:

Louise Spresser
AP Environmental Science Teacher
Lakeland High School
Louise.Spresser@polk-fl.net
 - c. Make the Subject: “APES: Introduction to <insert your name here>”
(Do not include the quote marks or the brackets, just the words)

- d. Begin the e-mail with a formal salutation, like “Mrs. Spresser” or “Dear Mrs. Spresser”
- e. Now introduce yourself (your name) and tell me a little bit about yourself, like:
 - Aside from school, what do you like to do (hobbies, sports, music, interests, etc.)?
 - Do you have a job? If so, tell me about your job - what you do, do you enjoy it? What is the most (or least) enjoyable thing about your job? How is it going to prepare you for the future? (hint-there is a positive answer to this question regardless of the job)
 - Tell me a little bit about your family (Mom? Dad? Guardian? Siblings? Pets?) What do your parents do for a living?
 - What previous science classes have you taken? Did you enjoy them? Who were your teachers, and what grades did you get?
 - What was the last book you read for fun?
 - What are you watching (anything binge worthy)?
 - What are you looking forward to the most in APES?
 - What are you most anxious about in APES?
 - What are your future education goals?
 - Why are you taking APES?
 - Any siblings, relatives or friends that have taken APES? If so, what have they told you about the course?
- f. End the e-mail with a formal closing: “Cordially”, “Sincerely”, “Warm regards”, etc. and add your name as if you signed a letter.
- g. Send the e-mail to me. I look forward to it!

***Supplies Needed for Class:** writing utensil, paper, binder, highlighter, USB drive, note cards, Composition Book (for labs), a way to access the internet at school (smart device, tablet, laptop, etc.), & colored pencils

Requested supplies: If you can donate one of the following, it will be appreciated: Hand sanitizer or paper towels

Formatting: Please turn in handwritten work and label with corresponding titles (titles are bolded and underlined below), number, and letter from the directions. Example as follows:

1. **“Online video resources.”**
 - a. **“Bozeman AP Environmental Science”:**
 - “1st video title”**
Handwritten notes
 - “2nd video title”**
Handwritten notes
 - b. **“Emerging Science: Ecological Economics”:**
Handwritten notes
 - c. **TED Talk “Pavan Sukhdev: Put a value on nature”:**
Handwritten notes
 - d. **“Crash Course Ecology”:**
List of the videos available in the notes (**optional to watch the videos that interest you**).
 - e. **“You Choose”** One video resource must contain a math review.
 - “Video 1 title”**
Handwritten notes
Source location
 - “Video 2 title”**
Handwritten notes
Source location
2. **“Biochemical cycles”:** book style-12 pages
 - “The Water Cycle”: handmade drawing/concept diagram & then handwritten description
 - “The Carbon Cycle”: handmade drawing/concept diagram & then handwritten description
 - “The Nitrogen Cycle”: handmade drawing/concept diagram & then handwritten description
 - “The Phosphorus Cycle”: handmade drawing/concept diagram & then handwritten description
 - “The Sulfur Cycle”: handmade drawing/concept diagram & then handwritten description
 - “The Rock Cycle” (including Plate Tectonics!): handmade drawing/concept diagram & then handwritten description
3. **Major air pollutants—Note cards:** *Sulfur dioxide, nitrogen oxides, carbon oxides, particulate matter, tropospheric ozone, & lead*
4. **Introduction letter:** emailed to Louise.Spesser@polk-fl.net by July 31st 2017.

Everything is due the 1st day of school –Monday, August 13, 2018 except the introduction letter; it is due by Tuesday July 31st

*I rarely check my email during the summer; if you have any questions please text me or ask me to check my email (863-698-9948) -be sure to tell me who you are in the text ☺

Assignment must be formatted; will not be accepted if not formatted as detailed above (make sure your name is written on **all of your work)!