AP Environmental Science
Summer 2021 Assignment

Welcome to APES! We will be covering a wide range of topics throughout the school year at a fairly fast pace. In order to be well prepared, you will need to complete the following ***three*** assignments before 4:00 pm on Monday, August 23. If you have questions, feel free to contact Mr. Maraghy (cmaraghy@tampaprep.org).

Part 1: Read
Read the following **chapters** of the book below: 1-6, 10, 13-15, 18, epilogue. You will want to annotate or take notes while you read. It would be a good idea to have the questions listed in Part 2 available while you read.

The Swamp: The Everglades, Florida, and the Politics of Paradise, by Michael Grunwald

Part 2: Write
Write an analysis of *The Swamp*. Your document needs to:
- be a *maximum* of 2 pages typed
- have 1" margins
- use 12 point, Times New Roman font
- be double spaced
- have no headings
- not use direct quotes

This is not a formal essay requiring an introduction and conclusion but it should be well-written and proofread. Use specific examples to back up your statements; no direct quotes.

Given the limited space, you will have to keep things very generalized. You ***must*** include at least the following points in your analysis:
1. Describe some specific impacts humans have had on Florida's environment that were talked about and why do they matter from an environmental perspective?
2. How did / do the environmental impacts affect economics, society, and politics?
3. Based on what you are aware of in the world around you, does the information and data presented in the book seem reasonable? Use your own experiences and knowledge to support why you feel this way.
4. Your own opinion and / or thoughts on the book
5. Further questions raised by reading the book

Your analysis will be graded on adherence to guidelines, quality of information, and thoughtfulness of responses. You will need to submit your synopsis as a PDF to a Blackbaud assignment by 4:00 pm on Monday, August 23.

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Part 3: Review Your Basic Maths Skills

The AP Environmental Science exam will require that you perform calculations, so practicing some basic math skills that you may not have used in a while is important. Print out the following two pages or open the document in the *Notability* app on your iPad.

- Show all of your work and draw a box around your final answer to each question.
- Make sure your answers include the appropriate number of significant figures.
- You may use a calculator as necessary.

Problems will be graded on correctness. **No credit will be given if you do not show your work**. You will also lose points if you do not include units in your answer.

1. In Makebelievelandia, they use a unique measuring system. There are 24 greebles in one purplunken. One olivianat is equal to 7 purplunkens. And one greeble is equivalent to 33 starlances. Use this information to convert 435 starlances into olivianats by using dimensional analysis.

2. Convert 25 cm^2 into m^2.

3. Convert 120 square meters into square inches. Write your answer in scientific notation.

4. Last year 250,000 people lived in Makebelievelandia. This year there are 210,000 people. By what percentage did the population decrease?

5. If a city of 14,200 people experiences 210 births, 75 deaths, 110 immigrants, and 25 emigrants in the course of a year, how many people will live in the city at the end of the year?

6. Electricity costs 9 cents per kilowatt-hour. In one month, a household uses 2.3 megawatt-hours. How much will the electric bill be?

7. Your car gets 18 miles per gallon (mpg) while your friend's car gets 34 mpg. If you decide to drive to Miami, which is 300 miles away, how much will you save by taking your friend's car? The cost of gas is $3.50 per gallon.

8. The concentration of mercury in a water supply changes from 48 parts per million (ppm) to 23 ppm. What is the percent change of the mercury concentration?

9. Madagascar is approximately 1,577 kilometers long and 579 kilometers wide. If 2.5 centimeters of rain falls on Madagascar, how many cubic meters of rain fell on Madagascar? (Hint: convert all units to meters first.) Show your work in scientific notation.

10. Consider an offshore wind turbine that is rated at 4.1 megawatts (MW) per hour. This means that with sufficiently high winds it will produce 4.1 MW or 4,100 kilowatts (kW) of power per hour. If this wind turbine runs at maximum capacity for a full year, how much energy will it produce? Give your answer in both MW and kW per year.