

AP Environmental Science Summer Assignment 2021-2022

Welcome to AP Environmental Science, aka... “APES”! This course is designed to be equivalent to a one semester college course in environmental science, and as such is an extremely rigorous high school course. APES is about understanding the interrelationships of the natural world, the influence of human interactions, discussing a broad range of environmental problems. While this is primarily a science course, it will touch on areas of economics, politics, government, ethics and several different areas of science, making it a very interdisciplinary course. Six major themes for the course include:

1. Science is a process
2. Energy conservation underlies all ecological processes
3. The earth can be thought of as one interconnected system
4. Humans can alter natural systems
5. Environmental problems have a social and cultural context
6. Human survival depends upon developing practices that will result in sustainable systems

There will be a significant amount of rigorous course work throughout the year. Sometimes students get the idea that AP Environmental Science is “easy”, but this is certainly incorrect. The class is not as calculation heavy as AP Physics or AP Chemistry, but it still involves a great deal of critical thinking, reading, writing, and design that makes it very challenging. **Students should not commit to this class unless they are willing to do work and studying outside of class, probably 3-4 hours most weeks.**

To enable us to hit the ground running next year and to ensure you have covered all pertinent prerequisites, there is a substantial summer assignment designed to prepare students for topics throughout the year. This assignment will be collected the first day of school, most likely submitted through Canvas. Each task should be typed up except for those that involve drawings/diagrams, where a picture can be embedded. Please label each file with the title of that section and your initials.

CHOOSE 3 OF THE FOLLOWING 4 OPTIONS TO COMPLETE

1. Experience the Natural World

Visit a natural outdoor area, go for a walk, and make some observations. Please go beyond your backyard. Some ideas:

- Al Lopez Park (Tampa)
- Lettuce Lake Park (Tampa)
- Medard Park (Plant City)
- Alderman’s Ford (Plant City)
- Apollo Beach Preserve (Apollo Beach)
- Robinson Preserve (Bradenton)
- Circle B Bar Reserve (Lakeland)

On your walk, please do the following:

- Record the time, date, location, approximate duration of your outing, and whether you went alone or a friend(s).

- Record brief observations of the flora and fauna, the geology of the area, the type of path you are walking on. Specific details like “I saw a grey squirrel run past” are not necessary. This should comprise one paragraph. Get pictures to include if possible!
- Find a quiet spot to sit for at least five minutes. Close your eyes and listen to the sounds around you. What sounds are natural? Are there human made sounds? Write a paragraph reflection of this experience.
- Respond to the following in a brief paragraph:
 - *Is this natural area really “natural”? Explain. How do you think it appeared 25 years ago, 200 years ago, 20,000 years ago, and 200 million years ago?*

2. Environmental Surveys/Ecological Awareness

- Go to: <https://www.watercalculator.org/> and complete the water footprint calculator. Record how much water you use as a family and as an individual. *Note- If a link is no longer active, find a suitable alternative online (there are numerous)*
- Go to: <http://www.nature.org/greenliving/carboncalculator/index.htm> and find your individual carbon footprint.
- Go to <https://www.footprintcalculator.org/> and find your ecological footprint.
- Make a data table with the information from each site.

3. Current or Recent Events in Environmental Science

Identify an environmentally themed article that interests you. Please provide a scan or digital copy of the article. Aim for solid sources in selecting this item, such as NPR, *Discover*, *National Geographic*, *Natural History*, *Science*, *Nature*, *The New York Times*, *Washington Post*, or *The Wall Street Journal* all provide excellent articles about current environmental issues. Summarize the article in two paragraphs. Then write a response to the article that includes the questions that you have, your opinion of the issue, how does the issue impact you, how is it relevant to an APES course.

To provide you with some *local food for thought*, many people have heard about the Piney Point leak, releasing millions of gallons of toxic wastewater into the Palmetto area. What went wrong? Why wasn't this dealt with sooner? What are the potential environmental implications? What is being done, at this point?

4. Think Globally

The following lists offer students **suggested** videos to offer deeper insights into environmental issues. Hopefully, you will find the videos enjoyable as well as thought provoking. While no student will be penalized for watching or not watching a video, it is your responsibility to make informed decisions about your viewing. *If you would like to choose another series of videos, that is acceptable if you ensure that it is tied into **Environmental** issues, not just nature issues.*

Parental note: please understand that while these books are non-fiction, they may contain some topics that are controversial to some. These are suggested titles due to environmental themes, students are invited to research with their parents to find alternates with similar Environmental connections that are acceptable for your family.

A good source for reviews are the website of www.Amazon.com, www.barnesandnoble.com, and www.Netflix.com

Choose **one environmental documentary** to watch (some suggestions are below, but you may choose others.)

- Provide the name of the documentary and year in which it was released.
- Describe any questions you may have as a result of your viewing.
- Explain any possible biases or influences that might have affected the creators of the documentaries. (1 paragraph minimum)
- Describe your opinion of the documentary- positive/negative/neutral. Reference items in the documentary that support your thoughts. (1 paragraph minimum)
- Relate what you have learned to your personal life- how does it affect/impact you? What information affected you the most? Will it impact how you live your life? (1 paragraph minimum)
- Design a unique movie poster and slogan for it. Your movie poster should be colorful, neat, and include a slogan that identifies the take home message of the film. Then justify and defend your poster/slogan. (Minimum 1 paragraph)

Possible Documentaries- many can be found on Netflix, Amazon Instant Video, or in some cases, YouTube. You may also find other options, but remember, they must deal with **Environmental** issues, not just nature. Again, be sure to check reviews with your parents to be sure you are making correct decisions about your viewings.

- National Geographic: The Human Footprint
- NatGeo: Six Degrees Could Change the World
- Flow: for the Love of Water
- Tapped
- Trashed
- Food, Inc
- King Corn
- Dirt
- Gasland
- Fracknation
- Vanishing of the Bees
- Fresh
- Fuel
- Blue Gold: World Water Wars
- Plastic Planet
- An Inconvenient Truth
- Empty Oceans, Empty Nets
- Harvest of Fear
- Troubled Waters
- The Plastic Problem (A PBS NewsHour Documentary)
- Plastic Wars
- Before the Flood
- A Life on Our Planet
- Kiss the Ground
- Little Ice Age, Big Chill
- Racing Extinction
- Merchants of Doubt
- Nova's Decoding the Weather Machine
- The Human Element