

AP Environmental Science Summer Assignment 2019-2020

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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 significant amounts of 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 or giving me a link to a folder in Dropbox or Gdrive. 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.

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:

- Smoky Mountains National Park
- Cherokee or Pisgah National Forests
- Ijams Nature Center
- Fort Loudoun
- Cove Lake
- House Mountain

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: <http://www.h2oconserve.org/> or <http://www.gracelinks.org/824/water-program> 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: <http://www.myfootprint.org/> and find your ecological footprint. (For # 2 - use the U.S. Measurement System).
- 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 that Volkswagon recently began building the Passat model in Chattanooga, TN. However, few are familiar with what was created at this site prior to Volkswagon – The Volunteer Army Ammunition Plant (VAAP). You may have lived near this area (or have family nearby) and might be curious to see what was created at VAAP, what environmental issues occurred, and what work has been done to help clean up the

site. There are several other famous local sites (e.g., the Coster Shop in Knoxville), so please feel free to consider a local event.

4. Think Globally

The following lists offer students **suggested** texts and videos to offer deeper insights into environmental issues. Hopefully, you will find the summer readings enjoyable as well as thought provoking. Many of these texts and videos are not found on the pre-approved list for Knox County. Please take care to preview texts by utilizing book reviews. While no student will be penalized for reading/not reading a certain text or for watching or not watching a video, it is your responsibility to make informed decisions about your reading/viewing. *If you would like to choose another book or 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

You may either-

Choose **one book** from the list below to read over the summer

-OR-

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

If you choose a book:

- Write down any vocabulary and/or information that is related to environmental science and define (10 terms or more)
- Describe and questions you may have as result of your reading (5 ? expected)
- Describe your opinion of the reading- positive/negative/neutral. Reference items in the book to support your thoughts. (Minimum 2 paragraphs)
- 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)
- Explain any possible biases or influences that might have affected the authors(1 paragraph minimum)
- Turn the overall message of the book into a bumper sticker slogan. Design & draw your bumper sticker. Then justify and defend your analysis. (Minimum 1 paragraph)

If you choose the documentaries:

- 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)
- Choose one of the documentaries that you watched and 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)

Book Options- most are available from your local library or definitely on Amazon. 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.

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| • Omnivore's Dilemma (Pollan, 2007) | • Silent Spring (Carson) |
| • Hot, Flat, and Crowded (Friedman, 2009) | • A Sand County Almanac (Leopold) |
| • The Origin of Feces (Waltner-Towes) | • Water Wars (Ward) |
| • The World Without Us (Weisman) | • Cadillac Desert: The American West and its Disappearing Water (Reisner) |
| • Coal River (Shnayerson) | • Beyond Malthus (Brown) |
| • Cheap: The High Cost of Discount Culture (Shell, 2009) | • Cradle to Cradle: Remaking the Way we Make Things (McDonough & Braungart) |

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.

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| • National Geographic: The Human Footprint | • Fracknation |
| • NatGeo: Six Degrees Could Change the World | • Vanishing of the Bees |
| • Flow: for the Love of Water | • Fresh |
| • Tapped | • Fuel |
| • Trashed | • Blue Gold: World Water Wars |
| • Food, Inc | • Plastic Planet |
| • King Corn | • An Inconvenient Truth |
| • Dirt | • Empty Oceans, Empty Nets |
| • Gasland | • Harvest of Fear |

