

AP Environmental Science

Summer 2026



Welcome future APES students! This is an advanced science course that combines the disciplines of biology, chemistry, geology, and physics to investigate global environmental issues. We will discover how the Earth's systems function together and how humans have affected our planet. We will also examine our personal consumption habits and learn ways to be responsible global citizens in the face of serious environmental issues.

- **Read the directions for each section carefully! Follow the rubric!!**
- **All work is to be completed on your own. You may not work with other students to complete this assignment. Written work is due the first day of school.**
- **The quizzes on chemistry and environmental disasters will not be on the first day of school but will be given during the first week of school.**
- **THIS WORK IS REQUIRED.**
- **No excuses will be accepted if you are not finished.**

Section 1:

Introduction

1. Email me at mderoba@johnncarroll.org

To receive full credit, email should be received by **July 1st**.

Please let me know the following information in your email:

- Your name and grade
- That you are aware of the summer assignment
- Why did you sign up for AP Environmental Science (APES)?



Section 2: Chemistry Review

1. Chemistry is a big part of environmental science. We will be discussing various chemicals and their impact. I would like you to be familiar with the following chemicals as we progress through the year. For each of the following, write out the chemical symbol/formula that goes with the name. (The first one has been done for you.) This must be handwritten. You can make it as a chart or list. Then list the answers to the three questions.

1. Water H₂O

2. Sulfur Dioxide

3. Phosphorus

4. Chlorofluorocarbons

5. Nitrogen Dioxide

6. Ozone

7. Methane

8. Carbon Dioxide

9. Atmospheric Oxygen

10. Radon

11. Ammonia

12. Nitrogen

13. Carbon Monoxide

14. Sulfuric acid

15. Chlorine



1. What are the main chemicals used in fertilizers?

2. What are the major pollutants released from burning fossil fuels listed here?

3. What are the 5 main greenhouse gases listed here?

Section 3: Environmental Disasters

As you begin your journey into APES, it is important for you to understand the significance various environmental disasters have had on our world. After completing this assignment, you will begin to see the impact the human population has had on the Earth. These are considered some of the worst environmental disasters. This **MUST** be handwritten in blue or black ink. **No typed papers will be accepted.**

Chernobyl	Kuwaiti Oil Fires
Exxon Valdez	Great Barrier Reef Bleaching
Bhopal	Love Canal
BP Oil Spill	Minamata Disease
Three Mile Island	Three Gorges Dam



- A. Answer the following questions for each environmental disaster.
1. When did disaster occur?
 2. Where did the disaster occur?
 3. What happened (including details)?
 4. What were the **short-term and long-term effects** of the disaster?

Section 4: APES Selfies

The APES course is divided into nine sections. You need to take 9 pictures of yourself this summer in settings that relate to the nine sections of the course outline. You must be in each picture. It should be a REAL SELFIE, not a picture that you photo shopped yourself into. (Someone else can take the picture of you though)



-After you have gathered your 9 selfies, you need to create a Power Point or Google Slide presentation containing your pictures. It should be 10 slides long. (introduction slide and one slide for each section)

-Each slide should contain the picture and a brief description about the picture...where you took it, what it is, how it shows one of the 9 sections, etc. (You should have various locations in your PowerPoint!)

These are a few suggestions just to get you started thinking about this. The possibilities are endless- be creative!

1. **The Living World: Ecosystem** Take a photo of yourself in a local or exotic ecosystem/biome. Identify the ecosystem/biome.
2. **The Living World: Biodiversity** Find a location where you can capture three different animals or plants in one picture.
3. **Population:** Harford County sadly has many examples of population growth. Another example could be animal or plant populations.
4. **Earth Systems and Resources:** We live in the Chesapeake Watershed. Maybe you don't know what a watershed is, but you will learn. You can take a picture of you next to the Chesapeake Bay. (be sure to document location)
5. **Land and Water Use:** Take a picture of yourself helping on a farm or garden, visiting a state forest or park, taking public transportation, fishing, etc.
6. **Energy Resources and Consumption:** Lots of possibilities here: solar panel installation, wind turbines, power plants, substations, alternative fueled vehicles
7. **Atmospheric Pollution:** Take a picture that shows smog or pollutants entering the atmosphere.
8. **Aquatic and Terrestrial Pollution:** A picture that shows land or water pollution. Sadly, this won't be hard.
9. **Global Change:** Consider a photo near something that is changing because of climate change. Some ideas: sea level rise, deforestation, erosion or near a sign indicating endangered species habitat-a picture that shows how our planet is in trouble!

Summer Assignment Rubric

Name _____

Section 1: Introduction

- I have emailed Mrs. Deroba. Score _____/5
- Email included: Statement that you received the summer assignment
- Email included: an introduction about yourself
- Email received by July 1st.

Section 2: Chemistry Review Score _____/5

- I identified all the chemical compounds correctly and answered the questions
- The assignment was done by hand, not typed
- I have studied the chemical compounds and am **ready for a quiz**

Section 3: Environmental Disasters Score _____/ 20

- I have fully researched and recorded information for all the disasters listed
- The assignment was done by hand, not typed
- I have studied the disasters and am **ready for a quiz**

Section 4: APES Selfies Score _____/20

- I have taken 9 selfies related to each section of the course
- I am in each picture, not photoshopped in
- I created a power point presentation that is 10 slides long, each slide has one picture, and a *description* of what the selfie is showing

All assignments are due on the first day of class. There is not a good reason why they aren't finished. Have them ready.