

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.

Because this is a college level course, you will be responsible for learning a large amount of material on your own. I will help you as we go, but it will be your responsibility to take notes, study and learn your vocabulary! We also work on the assumption that you have a general science background that includes biology, chemistry and algebra. The purpose of this project is to help you prepare for the APES content by getting organized, reviewing some background information, and getting familiar with some of the basic concepts of environmental science and your own consumption habits.

General Guidelines:

- **Read the directions for each section carefully!**
- Each section should be clearly labeled.
- Each section of the project must be fully completed, neat and typed.
- Each piece of the project should be bound together in some way.
- All research/information needs to be appropriately cited using APA format. A quick google search will help you with formatting.
- All work is to be completed on your own. You may not work with other students to complete this assignment.
- The checklist, provided at the end of this packet, should be completed and attached to the front of your work.

If you have any questions regarding this assignment, please email Mrs. McGee at mcgeead@scsk12.org.

Section 1: “Tragedy of the Commons”

- Watch this video: <https://www.youtube.com/watch?v=CxC161GvMPc>
- Watch this video: <https://www.youtube.com/watch?v=bs2POwRod8U>
- Go to <http://www.sciencemag.org/content/162/3859/1243.full> and read “The Tragedy of the Commons” by Garrett Hardin.

Science 13 December 1968: Vol. 162 no. 3859 pp. 1243-124

Answer the following questions using complete sentences.

Analysis Questions:

1. In his first few paragraphs, Garrett Hardin implies that there are a class of problems for which there is no technical solution. What is his definition of a technical solution?
2. Explain the analogy the author makes between the population problem and a game.
3. To address the question “what shall we maximize?” Hardin concepts such as finite vs infinite, the greatest number vs. the greatest good, maintenance calories vs work calories, and individual decision vs common good. Discuss how one of these pairs of opposites relates to the population problem.
4. According to the author, is ours a finite world? Explain.
5. What is Bentham’s goal? How does the author feel about reaching this goal?
6. What are incommensurables? What is the criterion in nature?
7. Explain Adam Smith’s idea of the “invisible hand” and what does this say about human selfishness?
8. Explain the author’s analogy about the herdsman, personal gain, and what happens to freedom in a Commons; the “philosophy of the commons”.
9. Why is the statement, ““Flowing water purifies itself every 10 miles,” no longer true?
10. How is pollution the “reverse” tragedy of the commons?
11. What did the United Nations declare in 1967? Why does Garrett Hardin find fault with it?

12. What did Charles Galton Darwin (Darwin's grandson) explain about the self-eliminating nature of conscience?
13. What example does the author give for "mutual coercion mutually agreed upon"?
14. What is Hegel's quote about freedom? With what plea does Hardin end his essay "The Tragedy of the Commons"?
15. Explain how each of these scenarios is or is not an example of Tragedy of the Commons:
- a. When North America was settled, forests covered the land. People cut them down for wood and to clear land for farms.
 - b. Blackberries are growing in a public park. They are sweetest when they are black. People walking through the park pick the black ones first and then go on to pick red ones, not waiting for them to fully ripen.
 - c. Weyerhaeuser, a paper company, owns a forest where it cuts trees for its paper products. It clearcuts huge areas of forest, leaving them desolate without vegetation.
 - d. About 10,000 years ago, many great mammals lived in North America, including saber-toothed cats, dire wolves, and mammoths. They went extinct as a result of hunting by Native Americans.
 - e. The air over Mexico City is heavily polluted by many unregulated factories and heavy traffic.

Section 2: Environmental Legislation

Fill in the missing information pertaining to important legislation. We will study **MANY** different environmental policies throughout the year.

Legislation Name	Treaty, Law or Act?	Date Enacted (Year)	Description of the Legislation (Give the purpose, important founding organizations or people, any major points that you find) Cite your source.
Kyoto Protocol			
Montreal Protocol			
Agenda 21			
London Dumping Convention			
Helsinki Convention			
CITES			
SMRCA			
RCRA			
Lacey Act			
Clean Water Act			
Safe Drinking Water Act			
Clean Air Act			
Antiquities Act			
Endangered Species Act			
CERCLA			
Delaney Clause of Food, Drug and Cosmetic Act			

AP Environmental Science Summer Assignment Checklist:

Please place this completed checklist at the front of your assignment before you turn it in.

Name _____

Section 1: Score _____/55

- I have watched the videos and read the Tragedy of the Commons article with comprehension.
- I have completed all of the analysis questions and I am ready to discuss during the first week of school.

Section 2: Score _____/45

- I have researched and recorded information for all of the legislation listed.
- I have cited all of the sources I used to find my information.
- I have studied the legislation and am ready for a quiz.

Total: _____/100

This Assignment is due Friday of the first week of school.