

AP Environmental Science
Summer Assignments 2018-2019
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As a way to begin preparing for the class please complete the following assignments.

1. Environmental Disasters
2. The Lorax
3. Easter's End
4. Comparative Essay
5. Math in APES – no calculators

You need to purchase a spiral notebook (1 subject is fine). The notebook will be used to complete your summer assignments and turn them in for credit and to work on your free response questions (FRQ's) throughout the year. I expect neat handwriting, we have to practice it starting now, and therefore the responses to all of your summer assignments will be handwritten in your notebook.

Each assignment should be clearly labeled and the specific instructions for each followed.

Your summer assignments are due the first day of class, if you have questions, you can reach me at marinlopez@wisd.us and I will reply to you as soon as I am able to.

Summer Assignment 1- Environmental Disasters

The events listed below are examples of environmental disasters that occurred because of humans and/or human error. Research each of the environmental disasters and answer the following questions:

- a) Date of the disaster
- b) Summarize the details of the disaster. You should have at least 4 sentences here.
- c) What was the specific environmental damage caused?
- d) How was the damage fixed? Could it be fixed or is clean up still ongoing?

Use a different page of your notebook for each environmental disaster. Make sure the heading on each page is the name of the environmental disaster you are writing about. The description of the event may be more than 4 sentences; it just can't be less than 4 sentences. Give credit to your sources, if you used the NOAA website; mention that at the end of the page.

1. Aral Sea, Central Asia: Overuse of water
2. Bhopal, India: Toxic air
3. Chernobyl, Ukraine: Nuclear power disaster
4. Deepwater Horizon, Gulf of Mexico, near Mississippi River delta: Oil spill
5. Exxon Valdez, Alaska: Oil spill
6. Fukushima, Japan: Nuclear power
7. Gulf of Mexico Dead Zone, areas of coastal Louisiana: Polluted water
8. James Bay, Canada: Overuse of water
9. Love Canal, New York: Polluted ground
10. Minamata Bay, Japan: Polluted water
11. Ogallala Aquifer, Great Plains: Overuse of water
12. Three Gorges Dam, China: Altering ecosystems
13. Three Mile Island, Pennsylvania: Nuclear power disaster

Summer Assignment 2- The Lorax

The Lorax is a fictional story by Dr. Seuss about a man whose activities abused the environment and about what he learned from the experience. The story contains many common components found in the environmental problems and issues facing humans around the world.

Watch the movie “The Lorax”, the original version. You can find it on YouTube or just follow the link below

<https://www.youtube.com/watch?v=8V06ZOQuo0k>

Once you have watched the movie answer the following questions on your notebook using complete sentences. You do not have to write the questions, just the question number, but make to answer the questions completely. The heading of the page should be “The Lorax Reflection Questions”.

1. In the story of “The Lorax”, who does the Once-ler represent?
2. Who does “The Lorax” represent?
3. Humans often appreciate the beauty of the natural world. Experiences such as finding seashells on a beach or seeing a rare bird often cause strong feelings. Did the Once-ler have feelings about the region and natural resources that he found? Explain.
4. Pollution not only affects plant and animal species, but it also affects another living species, human beings. Explain whether the Once-ler’s factory and town was a safe and healthy place to be. Why or why not?
5. The Once-ler’s business failed. Why? What happened to cause the failure of this business? What happens to the area where the business once was located? Have you seen this in real-life?
6. The Once-ler learned that he had made a serious mistake. What, in your opinion, was his mistake? What could he have done differently? (How could the Once-ler have managed his company to protect natural resources and not run out of trees)
7. Can you think of a real-life example of how man-made pollution affected a real ecosystem, its abiotics (eg: temperature, water quality, air quality, etc.) or its habitat? Explain.
8. Threatened and endangered species are those plant and animal populations threatened by or becoming extinct. Often, this is a result of human activity. Can you name the threatened or endangered species in the story and describe why they faced this condition?
9. Often, technological production creates, “byproducts”. For example, a byproduct of sawing wood is sawdust. Sometimes the byproducts of technology are unwanted or dangerous and are pollutants in the environment. Sometimes byproducts are useful. Name two byproducts that resulted from making Thneeds.
10. Do you think it is possible to achieve sustainable development; to balance quality of life with quality of the environment?

Summer Assignment 3- Easter's End

Easter's End is an article published in Discover magazine in 1995 about the choices made by Easter Island inhabitants and the consequences of those choices. The article is often used as a cautionary tale for our use of resources and the choices we are making.

Read the article "Easter's End" by Jared Diamond as it appeared in Discover magazine on August of 1995. Use the link below to get to the article.

<http://discovermagazine.com/1995/aug/eastersend543>

Once you have read the article answer the following questions on your notebook using complete sentences. You do not have to write the questions, just the question number, but make to answer the questions completely. The heading of the page should be "Easter's End Reflection Questions".

1. The article describes the former abundance of trees and forests on Easter Island. Describe several factors that contributed to the extinction of trees on the island.
2. Imagine that you arrived on the island before the tree populations were extinct, but after the tree populations had started to decline. Suggest a management plan that could have helped the Easter Islanders save the tree populations from extinction.
3. What have scientists concluded about the levels of plant and animal biodiversity on Easter Island in the past? Describe how scientific evidence supports these conclusions.
4. How do current levels of plant and animal biodiversity on Easter Island compare with past biodiversity levels?
5. Can today's levels of biodiversity on Easter Island be explained in terms of complexity and disturbance? Explain your answer.
6. Diamond likens the demise of the civilization on Easter Island with the overpopulation and resource destruction on the entire planet. Do you feel that this comparison is justified? Why or why not?
7. What are the parallels? What are the differences?
8. If we choose to heed Diamond's warning, what can we do to prevent a population crash of the entire human population?
9. What assumptions does the author make when presenting the information? Is there other historical data that should be considered before making such claims?
10. Write one thoughtful question that you have about the article. Good questions will try to deepen your understanding of concepts, or will try to relate the content of the article to other ideas.

Summer Assignment 4- Comparative Essay

After watching “The Lorax” and reading the “Easter’s End” you should have seen some parallels between the stories. Use these insights to create a Venn diagram to compare and contrast the stories of Easter Island and “The Lorax” on your notebook.

After creating the Venn diagram, write a 5 paragraph essay comparing the two stories on the next page of your notebook. Remember to address these questions and to have a proper title for the page.

-What are the key environmental issues?

-How are they similar/how do they differ?

-How do these issues relate to the world today?

Make sure to use key examples from both the video and the reading, be sure to develop a clear thesis statement, supporting paragraphs and a clear conclusion.

Summer Assignment 5- Math in APES

As part of the APES course you have to be able to do basic math without the use of a calculator. You should be able to interpret numbers in scientific notation and use them in equation, calculate percentages and change them to decimal form and vice versa. Knowledge of dimensional analysis is needed to convert between units as well.

Write the problems below in your notebook and solve them WITHOUT using calculators. ALL WORK MUST BE SHOWN. If work is not shown, you will not get credit. None of your answer should be in fractions, convert to decimals if necessary.

1) $\frac{10}{1000}$

2) $\frac{70}{1000}$

3) $\frac{700}{10000}$

4) $\frac{0.7}{1000}$

5) $\frac{100}{10000}$

Change the answers for questions 1-5 and convert them into a percent for questions 6-10.

Change the following numbers to scientific notation

11) 45,700

12) 23

13) 0.9

14) 0.000665

15) 21.9

Change to following numbers to standard notation

16) 3.825×10^3

18) 2.3×10^{-2}

20) 7.121×10^9

17) 6.3×10^4

19) 4.44×10^{-6}