AP Environmental Science Summer Assignment

To Be Completed:

☐ Article Assignment- Current Events in Environmental Science

☐ Chemistry Review

☐ Math Review

☐ Environmental Laws

Current Event Article Assignment

The field of Environmental science is unique in that it encompasses many disciplines and is constantly at the forefront of news and media. Staying current and being able to add to conversations and understand subject matter will aid in success on the AP exam as well as in future endeavors. Students will be required to find 1 article (published within the last year) that demonstrates one of the following topics we will be covering during the course:

- Environmental Law
- Ecosystems
- Climate
- Biodiversity
- Water Pollution
- Air Pollution
- Sustainable Agriculture
- Nonrenewable Energy/Resources
- Renewable Energy
- Human Population Growth
- Environmental Health
- Natural Resource Management

Article Analysis must include:

1. Title of Article
2. Summary: Brief synopsis of what article is about.
3. Analysis:

- Points of View: Does it have more than one side?
- Bias: Positive, Negative, Neutral?
- Controversy: Explain how it could become controversial in everyday conversation.
- Perspective: How do you feel about the article based on current knowledge?

4. Attach the article! A website counts!

Chemistry Review

The AP Environmental Science exam assumes you have a basic background in chemistry and often includes chemical formulas in place of pesticide label names, etc. In addition, an in-depth knowledge of the carbon, nitrogen, and water cycles is expected at the chemical level.

For this assignment, answer the following questions on a separate answer sheet showing work when needed.

1. Write out the following chemical names that go with the symbols:

CO_2	CO	$C_6H_{12}O_6$	CH_4	H_2
N_2	NO_2	NO_3	NH_3	NH_4
O_2	O_3	P	PO_4^{3-}	S
SO_2	SO_3	H_2SO_4	NaCl	Pb
U	Rn	Hg	Cl	H_2O

2. What is the pH scale? What does it measure?
3. What are the average pH of the following substances:

- Blood
- Rain
- Stomach Acid
- Lemon Juice
- Bleach
- Ocean Water
- Tap Water

Math Review

The AP Environmental Exam **DOES NOT** allow the use of calculators! That said, the math is not difficult but knowing what to expect is helpful!

Basic Math Skills YOU NEED to know:

- How to calculate Percentage
- Rate Change (Percent Change= final-initial/initial)
- Scientific Notation
- Dimensional Analysis (some of you know it has Factor Label Method)
- Conversion Factors in Metric System
- Metric Prefixes

For this section, please complete the following problems showing all work on separate answer sheet.

1. What is 10 million times three thousand?
2. A population of deer has 200 individuals. If the population suddenly drops 15% in one year, how many will be lost? What will new population be?
3. This year we have 50 students and last year we had 65 students. What percentage did the population grow by?
4. Electricity costs 6 cents per kilowatt hour. In one month one home uses 1 megawatt of electricity. How much will bill be? *hint- look at metric conversion chart
5. Your car gets 12 miles to the gallon and your friends car gets 20 miles to the gallon. You decide to go on a road trip to Chincoteague Island which is 200 miles away. If gas costs 4 dollars per gallon and you decide to split the gas money, how much money will you save by driving your friend's car?
6. Jim the tortoise was crawling at the rate of 43 cm per minute. How many kilometers would he crawl in one day (24 hours) if he did not rest and stayed at current pace?
7. You purchase a new house with 2500 sq feet of living space. How many sq meters of living space is this?
8. If a calorie is equivalent to 4.184 joules of energy, how many joules are contained in a 250 kilocalorie slice of pizza?
9. A coal-fire electric plant produces 12 million kilowatt-hours (kWh) of electricity each day. Assume that an input of 10,000 BTUs of heat is needed for one kilowatt

hour of electricity. Calculate the number of BTUs of heat needed to generate electricity produced by power plant each day.

10. If a city of 10,000 people experiences 200 births, 60 deaths, 10 immigrants and 30 emigrants in one year, what is the net annual percentage growth rate?

Environmental Law

Many of the Laws and legislation discussed in APES are not gone over in full detail. Going in with prior knowledge on some of the more definite legislature clarifies concepts and current events. For each of the following laws, fill out corresponding chart in your answer packet fully for credit.

- Kyoto Protocol
- Montreal Protocol
- Agenda 21
- Safe Drinking Water Act
- Clean Air Act
- Antiquities Act
- Endangered Species Act
- Helsinki Convention
- CITES
- Lacey Act

Name:_____

AP Environmental Science Summer Assignment- Answer Sheet

Section 2: Chemistry

1.

2.

3.

Section 3: Math

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Section 4: Environmental Law Chart

Legislation Name	**Is this a US or World 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)**
Kyoto Protocol			
Montreal Protocol			
Agenda 21			
Helsinki Convention			
CITES			
Lacey Act			
Clean Water Act			
Safe Drinking Water Act			
Clean Air Act			
Antiquities Act			
Endangered Species Act			