

AP Environmental Science (APES) Summer Work

You may be aware that this course has an extensive syllabus and is more interdisciplinary than most other science courses you have taken. We will be incorporating aspects of Earth Science, Biology, Chemistry, Physics, Economics, Government, and more. It is important that you come to class in August with a basis from which to begin the year. Below you will find your work for the summer. You will be expected to bring this to class on the **first day** of school and it will be graded. **Due August 26**



Part 1: Movie Assignment

1. You are to watch a movie selected from the list below.
2. From this movie, you are to write a report (2-4 pages) that addresses the following aspects. Be sure that your report is in paragraph format and not submitted as a list of questions and answers.
 - a. What was the environmental situation addressed in the book or movie?
 - b. Was this situation natural or man-made?
 - c. Exactly how did this situation occur (what is the cause)?
 - d. What were the positive and/or negative effects of this situation? (Any legislation created is a positive effect)
 - e. How was this situation fixed – if at all?
 - f. Was anyone held responsible for this situation?
 - g. How was fault determined?
 - h. What consequences did they face – if any?
 - i. What were the long-term ecological impacts of this event – if any?
 - j. What did you already know about this situation before this project?
 - k. What is the most interesting thing(s) you learned by doing this project?

Movie Suggestions:

- An Inconvenient Truth (PG)
- Blackfish
- Blue Vinyl (NR)
- Contagion (PG-13)
- Erin Brockovich (R)
- Fern Gully (G)
- Fire Down Below (R)
- Gorillas in the Mist (PG-13)
- Happy Feet (PG)
- [HOME](#) (Documentary)
- Ice Age (PG)
- Ice Age: The Meltdown (PG)
- Outbreak (R)
- Pelican Brief (PG-13)
- Promised Land (R)
- Recycled Life (NR)
- The China Syndrome (PG)
- The Day After Tomorrow (PG-13)
- The Perfect Storm (PG-13)
- The Cove
- Trashed
- Wall-E (G)

Part 2: Summer Math Review:

The following problems represent some of the basic math skills that are required to be successful in AP Environmental Science. Use this sheet over the summer to review. There will be a math quiz the first week of school. **NO CALCULATORS!! SHOW ALL OF YOUR WORK!!**

Put the following numbers into scientific notation.

- 1) 0.00003 = _____
- 2) 170,000 = _____
- 3) 0.005 = _____
- 4) 376 = _____
- 5) 4160 = _____

Write the following numbers in standard notation (convert from scientific)

- 6) $3 \times 10^7 =$ _____
- 7) $5.6 \times 10^3 =$ _____
- 8) $8.2 \times 10^8 =$ _____
- 9) $7 \times 10^1 =$ _____
- 10) $2.1 \times 10^0 =$ _____
- 11) $3.4 \times 10^{-2} =$ _____
- 12) $5.1 \times 10^{-1} =$ _____
- 13) $4.7 \times 10^{-4} =$ _____
- 14) $6 \times 10^{-9} =$ _____

Solve the following

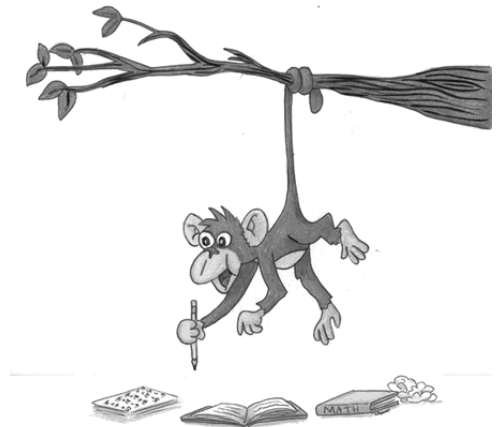
- 15) $10^2 \times 10^5 =$ _____
- 16) $10^1 \times 10^2 =$ _____
- 17) $10^2 \times 10^{-5} =$ _____
- 18) $10^{-1} \times 10^7 =$ _____
- 19) $10^{-3} \times 10^{-3} =$ _____
- 20) $10^{-4} \times 10^{-2} =$ _____
- 21) $10^4 / 10^5 =$ _____
- 22) $10^1 / 10^3 =$ _____
- 23) $10^2 / 10^{-3} =$ _____
- 24) $10^{-6} / 10^{-4} =$ _____
- 25) $10^{-2} / 10^{-6} =$ _____

Solve the following using scientific notation

- 26) $0.004 \times 0.006 =$
- 27) $0.025 \times 0.004 =$
- 28) $0.00005 \times 0.000007 =$
- 29) $26,000 \times 1,000 =$
- 30) $237 \times 1,000,000 =$
- 31) $320,000,000 \times 0.0005 =$



- 32) $0.003 \times 4,000 =$
 33) $2,000 / 13,000 =$
 34) $25 / 0.0015 =$
 35) $200 / 1,000,000 =$
 36) $0.001 / .00001 =$



Dimensional Analysis

Set up and solve the following equations using all units and showing all work. Conversion factors are included. Use scientific notation when appropriate.

- 37) There are 2.2 pounds in 1 kilogram. How many pounds in 140 kilograms?
- 38) There are 2.53 centimeters in one inch. How many centimeters are in 32 inches?
- 39) There are 36 inches in one yard, how many centimeters are in two yards?
- 40) There are 100 centimeters in 1 meter. How many yards are in one meter?
- 41) Given 1000 watts in 1 kilowatt, how many watts are in 2.4 kilowatts?
- 42) 1 megawatt is 10^6 watts. How many kilowatts are there in one megawatt?
- 43) There are 1,000 grams in one kilogram, and 1,000 micrograms in one gram. How many micrograms are in 2,500 kilograms?
- 44) You have 24 light bulbs, each using 100 watts an hour. How many watts will be used in 120 hours?
- 45) 1,000 homes are in a city. Each home uses 200 kilowatt hours a month. How many kilowatt hours does the entire city use in a month?

Have a wonderful summer and get excited for an excellent year!!!

Ms. Zabel

