

AP Environmental Science (APES) Summer Assignments- WELCOME!

1. You may want to go ahead and get a copy of one of the APES exam study guide books. You can probably find a lot of used ones on Amazon or Ebay this summer. Barrons, 5 Steps to a 5, Princeton, and Kaplan are all good ones.
2. Complete all assignments in this packet.

This summer you will be reading one book, Bill Bryson's *A Walk in the Woods*, to prepare you for the course. This book is non-fiction, highly accessible, and a popular reading (it was on the NY Times best seller list). You will need to read it and be prepared for a quiz on Friday, August 24). **Warning – there is some cursing related to bear encounters!* While this book is humorous, Bryson's adventures on the AT (Appalachian Trail) introduce themes we will see emerging in the course.

Enjoy your summer!! This is an easy read – great for car/ plane trips or simply sitting by the pool. Get out and see the world this summer – it's what this class is all about!

Summary: *A Walk in the Woods: Rediscovering America on the Appalachian Trail* by Bill Bryson

From the jacket: "Not long after I moved with my family to a small town in New Hampshire, I happened upon a path that vanished into a wood on the edge of town."

So begins Bill Bryson's hilarious book *A Walk in the Woods*. Following his return to America after twenty years in Britain, Bryson decided to reacquaint himself with his native country by walking the 2,100-mile Appalachian Trail, which stretches from Springer Mountain in Georgia to Mount Katahdin in Maine. The AT, as it's affectionately known to thousands of hikers, offers an astonishing landscape of silent forests and sparkling lakes--and to a writer with the comic genius of Bill Bryson, it also provides endless opportunities to test his own powers of ineptitude, and to witness the majestic silliness of his fellow human beings.

.... But *A Walk in the Woods* is more than just a laugh-out-loud hike. Bryson's acute eye is a wise witness to this fragile and beautiful trail, and as he tells its fascinating history, he makes a moving plea for the conservation of America's last great wilderness. An adventure, a comedy, a lament, and a celebration, *A Walk in the Woods* is destined to become a modern classic of travel literature.

Reading Questions (adapted from R Schlegel) for *A Walk in the Woods* (ISBN # 0767902521) by Bill Bryson

Chapter 1—How are Bryson's expectations of the AT (Appalachian Trail) influenced by his identity as an "urban dweller?"

Chapter 2—This chapter deals with two "animals"—bears and "Katz"! Katz is clearly representative of the rise in consumption patterns among Americans, intersecting with a rise in leisure activities. How is his bag full of Snickers likely to cause a problem?

Chapter 3—How was the AT a response to the urban conditions of the early 20th century? What does Bryson learn about reading maps during his first days on the trail? How does Katz get involved in environmental degradation and resource depletion very early on?

Chapter 4—Forestry is a form of agriculture managed along the AT most often by the U.S. Forest Service. What aspects of the Forest Service's management practices does Bryson approve and/or criticize?

Chapter 5—What geographical patterns does Bryson (a northerner) take note of during his side trip into the southern Appalachian town of Hiwassee? (Note the driving, dialect, marital customs, and food.)

Chapter 6—How do communities adjacent to the AT seem to have a "market dependence" on the resource of the trail itself?

Chapter 7—In what ways does Bryson care about the political boundaries of state lines during his hike? In what sense does he care about political boundaries such as National Park Service boundaries? Where does he notice crossing a boundary from one ecological area into another? To what extent do these boundaries share the same lines?

Chapter 8—How do you feel about Bryson's decision to take the long cab ride to Virginia?

Chapter 9—How does Bryson's sense of scale change when he switches from foot to automobile transportation? How does it change his perception of the region?

Chapter 10—What is Chestnut Blight and how did it change the Appalachian region?

Chapters 11—Before the creation of Shenandoah Park, humans were the dominant species in the food chain. What has taken their place since the creation of the park? What's the most dangerous "predator" for Katz in this chapter!?

Chapter 12—How has the land-use pattern in the area now known as Shenandoah National Park changed over the past 100 years?

Chapter 13—So far in the book, what are your thoughts on Bryson (either as an individual or as an author)? Do you tend to agree with his thoughts or are you offended by him?

Chapter 14—Isn't the story of Centralia interesting? We will discuss the wonders of the coal industry this year. Jot down your impressions of the story.

Chapter 15—What positive and negative impacts has the Army Corps of Engineers had in the Delaware Valley, in Bryson's view?

Chapter 16—How have economic decline and out-migration (loss in population) changed the character of the rural areas of New England over the past century? What factors contributed to the economic decline and the out-migration? How does Bryson benefit from this out-migration?

Chapter 17—Is Bryson acting like an idiot in this chapter?

Chapter 18—How did changes in leisure and consumption patterns among Americans affect the landscape of the White Mountains over the past 100+ years? Given the choice yourself, say today, would you hit the beach or head for the mountains?

Chapter 19—Now that Bryson has reached Maine, recall what he experienced way back in Georgia. What are the regional differences in land use and culture?

Chapter 20—What regions along the AT are most welcoming to urban-dwelling hikers, and which is most foreboding? What factors put Maine in the latter category?

Chapter 21—Do you agree with Bryson's final assertion that "he hiked the Appalachian Trail?" What percentage of something do you have to cover in order to say you've "done it?" When you get to the end of next May, how will you know you've "done" APES?

Basic Mathematical Skills

Being able to do basic math is essential to this course. We will have to do math calculations in several of our units and we will not have time to review the basics. Go over this help sheet and complete the math problems. The math problems are also due Friday August 24th.

Scientific Notation

Thousand = $10^3 = 1,000$

Million = $10^6 = 1,000,000$ (people in the US)

Billion = $10^9 = 1,000,000,000$ (people on Earth)

Trillion = $10^{12} = 1,000,000,000,000$ (National debt)

- When using very large numbers, scientific method is often easiest to manipulate. For example, the US population is 300 million people or 300×10^6 or 3×10^8

- When adding or subtracting, exponents must be the same. Add the numbers in front of the ten and keep the exponent the same.

- When multiplying or dividing, multiply or divide the number in front of the ten and add the exponents if multiplying or subtract the exponents if dividing

Ex. $9 \times 10^6 / 3 \times 10^2 = (9/3) \times 10^{(6-2)} = 3 \times 10^4$

Dimensional Analysis

You should be able to convert any unit into any other unit accurately if given the conversion factor.

Online tutorials are available:

http://www.chemprofessor.com/dimension_text.htm

<http://www.chem.tamu.edu/class/fyp/mathrev/mr-da.html>

Prefixes

m (milli) = $1/1000 = 10^{-3}$

c (cent) = $1/100 = 10^{-2}$

k (kilo) = $1000 = 10^3$

M (mega) = $1,000,000 = 10^6$

G (giga) = $1,000,000,000 = 10^9$

T (tera) = $1,000,000,000,000 = 10^{12}$

Know growth rate calculations:

Growth rate = [CRUDE BIRTH RATE + immigration] – [(CRUDE DEATH RATE + emigration)]

CBR = crude birth rate = # births per 1000, per year

CDR = crude death rate = # deaths per 1000, per year

(CBR – CDR) / 10 = percent change

Know the Rule of 70 to predict doubling time: Doubling time = 70 / annual growth rate (in %)

Calculate half-life.

AMOUNT REMAINING = (ORIGINAL AMOUNT)(0.5)^x

where x = number of half-lives #half-lives = time / half-life

Know that "per capita" means per person; per unit of population.

Math Problems

Answer the questions. Use a separate sheet of paper if necessary. Show all work neatly.

1) What is one million times one thousand? Show your work in scientific notation. Give the answer in scientific notation and in words.

2) A population of deer had 200 individuals. If the population grows by 15% in one year, how many deer will there be the next year?

3) Last year I had 28 AP Environmental Science students and this year I have 150 AP Environmental Science students, what percentage did the population of APES students grow by?

4) Electricity costs 6 cents per kilowatt hour. In one month one home uses one megawatt hour of electricity. How much will the electric bill be? (be sure to look at the prefixes chart on the previous page for the conversion of kilo to mega)

5) Your car gets 15 miles to the gallon and your friend's car gets 25 miles to the gallon. You decide to go on a road trip to Virginia Tech, which is 300 miles away. If gas costs \$4 per gallon and you decide to split the gas money, how much money will you save in gas by driving your friend's car?

6) Virginia Beach is 10 miles wide and 30 miles long. If one inch of rain falls on Virginia Beach, how many cubic feet of rain fell on Virginia Beach. (Hint: convert all units to feet first).

7) An MP3 takes up about 16 kilobytes of memory per second of music. If you owned a one terabyte hard drive and filled it with only mp3s, how many days worth of music would you have? (keep track of units: kilobytes to terabytes and seconds to days)