Welcome to AP Environmental Science:

My name is Dr. Jones and we'll be spending a lot of time together this upcoming school year figuring out how the world works. You'll have fun and we'll all learn a lot!

To get the most out of our class, we're going to spend a lot of time developing some skills that are fundamental to performing science at a high level…and it's never too soon to start, so take a look at the next few slides and be ready to use these skills on DAY ONE!!! ☺

Skill One: Fun with graphs or models

You're too clever by half $\longrightarrow$ $U = \frac{2(\text{clever})}{2}$

You Should:

- Create a graph or model and be as creative as you would like…for example, could you put together a one-page guide to making a peanut-butter and jelly sandwich with only pictures & arrows? Could you create a pie chart summarizing your typical summer day? Could you create a graph illustrating the speed at which time travels in relation to the amount of fun you're having???

Skill Two: Fun with math (kinda 😐 Cause how much fun can math ever really be ☺)

You Should:

- Use the model on the next slide to help you figure out at least 5 of the problems on the last page of this slide set…(and heads-up—you might have to look up a few symbols/abbreviations)

Dimensional Analysis: Explanation

Dimensional analysis is a mathematical tool that is often used in science to convert one quantity to another. It involves the comparison of items using equivalent fractions that are equal to one.
Here's an example: If a car is going 35 miles/hour, how many km/sec is it going?

Step 1: Start with what you are given. (35 miles/hour) and write it as a fraction.

$$\frac{35 \text{ miles}}{1 \text{ hour}}$$

Step 2: Use fractions that are equivalent (or equal to one) to convert the units you were given. Units on the top of the fractions can be canceled out by a fraction with those units on the bottom and visa versa.

$$\frac{35 \cancel{\text{ miles}}}{1 \cancel{\text{ hour}}} \quad \frac{1.6 \text{ km}}{1 \cancel{\text{ mile}}} \quad \frac{1 \cancel{\text{ hour}}}{60 \cancel{\text{ min}}} \quad \frac{1 \cancel{\text{ min}}}{60 \text{ sec}}$$

Step 3: When you have canceled out all the units you don't need, you should be left with only the units you want for your answer. Multiply all of the top numbers. Be sure to keep the units that haven't been canceled.

Ex: 35 x 1.6 x 1 x 1 = 56 km

Step 4: Multiply all of the bottom numbers. Be sure to keep the units that haven't been canceled.

Ex: 1 x 1 x 60 x 60 = 3600 sec

Step 5: Divide the top quantity by the bottom quantity.

Ex: 56km/3600sec = .0155 km/sec

Step 6: You're done! Check that your answer makes sense.

Use this as a guide…



1. Convert 0.0654 years to seconds
2. Convert 16,500 μg to dag
3. Convert 5.4 dm^3 to mm^3
4. Convert 0.039 kL to dL
5. Convert 500 cg to lbs
6. Convert 5.43 x 10^{-6} Mm to cm
7. Convert 79,000 inches to km
8. Convert 5 x 10^6 inches to dam
9. Convert 6.5 cm^3 to m^3
10. Convert 7.5 x 10^9 μs to days

See if you can figure out at least five…

