

AP Environmental Science Summer Fun

The APES summer assignment is a math review. You do not have to turn in anything in, but in the second week of school, you will be given a quiz covering this material. **Feel free to email me questions jroe@bcps.org**

Contents

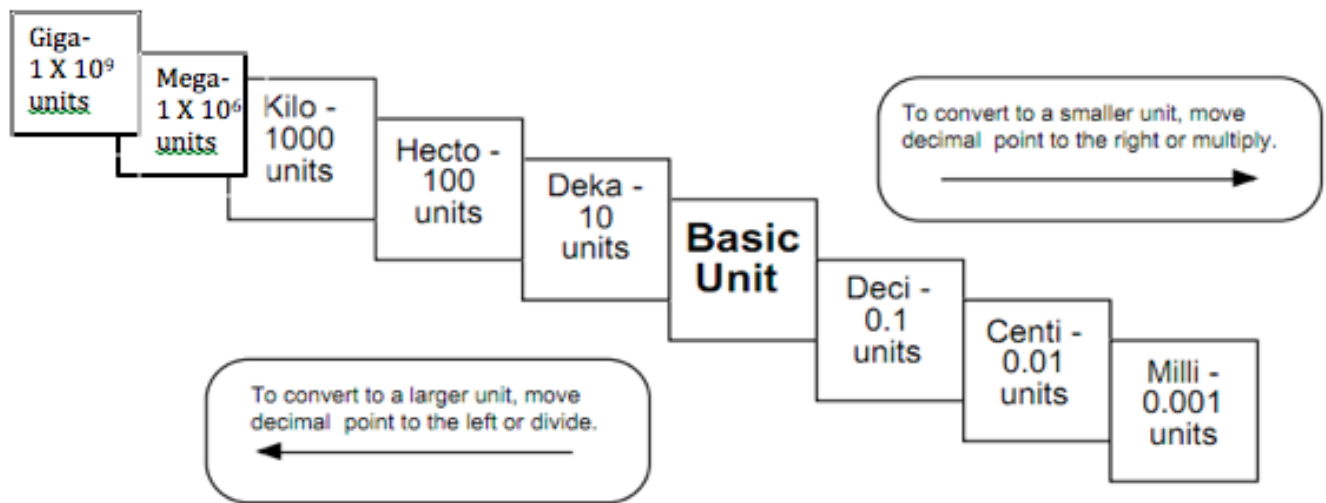
Averages, Percentages, Percent change, Rate of Change, Metric Units, Scientific Notation, Dimensional Analysis, Experimental Design

Reminders

1. Write out all your work, even if it's something really simple. This is required on the APES exam so it will be required on all your assignments, labs, quizzes, and tests as well.
2. Include units in each step. Your answers always need units and it's easier to keep track of them if you write them in every step.
3. Check your work. Go back through each step to make sure you didn't make any mistakes in your calculations. Also check to see if your answer makes sense. For example, a person probably will not eat 13 million pounds of meat in a year. If you get an answer that seems unlikely, it probably is. Go back and check your work.

Metric Units: YOU MUST MEMORIZE THE METRIC CONVERSION CHART

Kilo-, centi-, and milli- are the most frequently used prefixes of the metric system. You need to be able to go from one to another without a calculator. You can remember the order of the prefixes by using the following sentence: Good Morning *King Henry Died By Drinking Chocolate Milk*. Since the multiples and divisions of the base units are all factors of ten, you just need to move the decimal to convert from one to another.



$$\text{Percent Change} = \frac{|\text{New} - \text{Original}|}{\text{Original}} \times 100$$

$$\text{Rate of Change} = \frac{\text{Change in } y}{\text{Change in } x}$$

- 1) If you scored a 1090 on your first PSAT and 1210 on your second PSAT. What was your percent improvement?
- 2) If one termite can destroy 1.2mg of wood per day, how many kilograms of wood can 10 termites destroy in 1 week?

3) What is 70% of 640?

4) 400 kilograms= _____ milligrams

5) 7 grams = _____ Gigagrams

6) 600 mm = _____ cm

7) 25 centigrams = _____ kilograms

8) 10 Megameters = _____ millimeters

Write the following in scientific notation

9) 394 billion

10) 0.000070202

Complete the following calculations

11) $4.2 \times 10^5 + 5.05 \times 10^9$

12) $2 \times 10^5 \times 5.05 \times 10^9$

13) If I can run 6km in 24 minutes, how many cm can I run in 5 hours?

14 & 15) Fourteen percent of a 55,000 acres forest is destroyed by the invasive pine weevil.

14) How many acres of the forest were not destroyed?

15) How many acres of the forest were destroyed?

16) If termites destroyed 42 acres of forest in 2015 and 65 acres of forest in 2016, what was the percent increase in forest destruction?

17) A pesticide was sprayed on a portion of a forest. The pesticide killed 25,000 termites. This is 71% of the local termite population. What is the total termite population?

18-21) A clam farmer has been keeping records concerning the water temperature and the number of clams developing from fertilized eggs. The data is recorded below.

18) What is the dependent variable?

19) What is the independent variable?

21) What is the average temperature in this experiment?

Water Temperature in °C	Number of developing clams
15	25
20	40
25	90
30	98
35	75
40	40
45	15
50	0