If you are entering into AP Biology from regular science classes there will be additional summer work to get your skills and background knowledge up to the levels needed for this rigorous class.

While the skills and knowledge from honors Earth/Space science may not show up as pre-requisites in AP Biology, many of the specific things that students learn in Honors Biology and Honors Chemistry as well as the science process skills and generic study skills that are covered in honors classes are simply assumed in an AP Biology class.

Since you have indicated that you want to take AP Biology, despite the lack of preparation (this does show ambition and drive on your part!) I've taken the time to prepare some "catch" up assignments.

Part I   Additional Fill in the blank questions 1-70 (enter answers on form http://mdgottfried.cwahi.net/Forms/AP/Test002.html) These are fill in the blank (NOT multiple choice)- Solve on your own paper. Enter the answer on my online form.

A mole is a mole is a mole!   Avogadro's number = 6.02×10^{23}
What is the gram molecular weight of the following compounds?
1. $FeSO_4$
2. H_2O
3. O_2
4. H_2O_2
5. $C_6H_{12}O_6$
6. CH_4
7. How many grams are in   3   moles of H_2O ?
8. How many grams are in   0.5   moles of NH_4OH ?
9. How many grams are in   0.3   moles of CH_4 ?
10. How many moles are in 10.2   grams of H_2O_2 ?
11. How many moles are in 64   grams of CH_4 ?
12. How many molecules are in 1.8   grams of H_2O
13. In neutralizing 2 moles of NaOH how many of grams of HCl do you need?

Metric Conversions

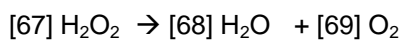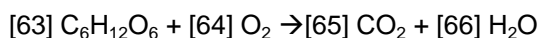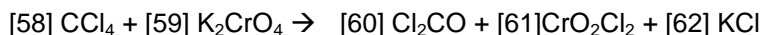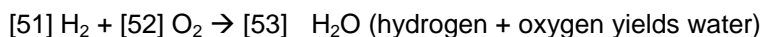14. 2,000 mL = _____ L
15. 200 mL = _____ L
16. 1,200 g = _____kg
17. 1,200,000 g = ___ kg
18. 1.23 kg = _____ g
19. 0.5 g = _____ mg
20. 0.25 cm = _____ mm
21. 1 mm = _____ µm
22. 1040 mm^2 = _____ cm^2
23. 2 m^2 = _____ mm^2
24. 5 m^3 = _____ cm^3
25. 50,000,000 cm^3 = _____ m^3
26. A block of wood 4 cm long, 2 cm wide and 10 cm deep was found to have a density of 0.25 gm/cm^3. What was the mass of the block?
27. A block of wood with a mass of 4 gms was found to have a density of 0.5 gm/cm^3. What was its volume?
28. A rock with a density of 5 gm/cm^3 and a mass of 35 gms was submerged in a graduated cylinder with 72 mL of water. What is the new water level?
(The density of water is 1 gm/cm^3)
29. What is the mass (in g) of 500 cm^3 of water?
30. What is the mass (in kg) of   2 m^3 of water?
    A cheetah was clocked as it chased an impalla. The impalla ran 100 meters in 5 seconds. The cheetah was clocked by a Liberian scientist at 100 yards in 4 seconds.
31. What was the speed of the cheetah in m/sec?

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32. What was the speed of the cheetah in cm/sec?
33. What was the speed of the impalla in m/sec?
34. What was the speed of the impalla in cm/sec?
35. What was the speed of the cheetah in miles/hour?
36. What was the speed of the impalla in miles/hour?

Picture it. A lion was chasing Ben Johnson, who is trying to catch up with and climb into a jeep. The lion was very hungry and was running at 27 miles/hour (determined by comparison with the speedometer of the jeep). Ben Johnson was running almost his record best, 100 meters in 10 seconds.
37. What is Ben's speed in miles/hour?
38. What is Ben's speed in cm/second?
39. What is the lion's speed in miles/hour?
40. What is the lion's speed in cm/second?
41. A couple are having a child. What are the odds it will be a boy?
42. The same couple has had four (4) sons in a row. What are the odds the fifth (5th) child will be a boy?
43. Approximately how old is the earth?
44. What kind of molecules primarily make up the cell membrane?
45. What is the process by which DNA copies itself?
46. What is the process by which the information in DNA is used to make RNA?
47. What is the process by which the information in mRNA is used to make protein?
48. What happens at ribosomes?
49. What is cell theory (in 1-2 sentences or less)?
50. When you graph the results of an experiment what gets graphed on the x-axis, the independent (manipulated) or the dependent (responding) variable?

Balancing Equations – For each equation provide the missing coefficients.   For this assignment you have to put in a one (1) where it is normally implied for me to know you know what you are doing.

[51] H_2 + [52] O_2 → [53] H_2O (hydrogen + oxygen yields water)

[54] $NaHCO_3$ → [55] Na_2CO_3 +[56] H_2O +[57] CO_2

[58] CCl_4 + [59] K_2CrO_4 →   [60] Cl_2CO + [61]CrO_2Cl_2 + [62] KCl

[63] $C_6H_{12}O_6$ + [64] O_2 →[65] CO_2 + [66] H_2O

[67] H_2O_2 → [68] H_2O + [69] O_2

70. Who was your chemistry teacher? (Or, if you didn't take chemistry at ATM, where did you take chemistry?)

Part II
Using the "OnLineBiology Book"
(http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.html)
Read Chapter 1 (Introduction):   Answer Review Questions 1-15 (on form Test-002)
Read Chapter 2 (Chemistry: Atoms and Molecules): Answer Review Questions 1-11 (on form Test-002)

Part III
1-Read the "some basic chemistry" review http://www.rsc.org/Education/Teachers/Resources/cfb/basicchemistry.htm
Note that since this page is hosted by the British Royal Society of Chemistry some of the spellings will be different than what you are used to. Live with it.
2-Go through the 4 basic modules at http://www.biology.arizona.edu/biochemistry/tutorials/chemistry/main.html
(Spanish version http://www.biologia.arizona.edu/biochemistry/tutorials/chemistry/main.html)
There are 14 questions (including answers and explanations) on the site.
Go through the questions.
3-For each of the questions provide a rationale in YOUR words for the answer. Explain it to me, so that I can tell you understand it. I don't know if the Spanish questions are the same as the English ones, so if you are fluent, check that before you answer. AND, your answers do have to be in English.) (on form Test-002)

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