Part 1: Read the article “The Tragedy of the Commons” by Garrett Hardin from one of the websites listed below. After reading type a 500-1000 word summary and response to the article. You may use the questions below to guide you through your response.

Websites:
http://www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html
http://www.sciencemag.org/content/162/3859/1243.full
http://dieoff.com/page95.htm

Tragedy of the Commons contemplation questions:
Briefly explain "The Tragedy of the Commons presented in the article.
Describe five resources that this analogy could represent.
How does population growth, factor into The Tragedy of the Commons?
Is the freedom to breed sacred, or are there any legitimate reasons you can see for limiting fecundity?
What does Hardin mean by Mutual Coercion Mutually Agreed upon?
What does it mean when Hardin says there are no technical solutions to a particular problem?
Explain how Hardin comes up with the statement that "The optimum is, then, less than the maximum. Explain how Hardin would seek to solve the problem of population growth; be sure to include what coercion has to do with it.

Part 2: Environmental Science Vocabulary Scavenger Hunt: For this part of your summer assignment, you will be familiarizing yourself with science terms that we will be using at different points throughout the year.

Select and “collect” 25 words/terms from the list on the next page
When I say “collect”, I mean you should collect that item by finding it and taking a photograph (digital or paper printed) or making a sketch of that item. You will create a unique way to present your “collection” along with corresponding explanations. You can do a number of different ways, PowerPoint, Microsoft Word, or by creating an actual photo album.

You do not need to find the exact item on the list, say for example, if it is an internal part to an organism, but you must apply the term to the specimen you find and explain in your finished project how this specimen represents the term.

EXAMPLE:
If you choose the term “mutualism”, you could submit a photograph you have taken of a bess beetle then explain in your project that bess beetles have a mutualistic relationship with fungus. The bess beetle chews up decaying wood and excretes it in its feces. The fungus then grows on the waste further releasing nutrients. The bess beetle then eats the further processed feces to receive the nutrients.

ORIGINAL PHOTOS/SKETCHES ONLY:
You cannot use an image from any publication or the Web. You must have taken the photograph (or made the sketch) yourself. The best way to prove that is to place an item in all of your photographs that only you could have added each time. I would like for you to make a small sign of your name that will be in each photo/drawing.
➤ NATURAL ITEMS ONLY:
Specimens may be used for only one item/word, and all must be from something that you have found in nature. Take a walk around your yard, neighborhood, and town. DON’T SPEND ANY MONEY! Research what the term means and in what organisms it can be found... and then go out and find one.

➤ TEAM WORK:
You may work with other students in the class to complete this project, but each student must turn in his or her own project with a unique set of terms chosen.

Terms:

1. abiotic
4. adaptation of a plant
7. adaptation of an animal
10. aerobic
13. affluenza
16. agriculture
19. air pollution
22. alternative energy
25. anaerobic
28. anthropogenic
31. autotroph
34. biodiversity
37. biomagnification
40. biomass
43. biome
46. carbon
49. carcinogens
52. carrying capacity
55. climate
58. commensalism
61. conifer leaf
64. deciduous leaf
67. density dependent factor
70. density independent factor
73. ecosystem services
76. ecological/carbon footprint
79. ecotone
82. emigration
2. energy
5. erosion
8. eutrophication
11. extinction
14. feedlots
17. first law of thermodynamics
20. fossil
23. fossil fuel
26. generalist
29. genes
32. genetically modified organism
35. greenhouse effect
38. greenhouse gases
41. habitat
44. habitat fragmentation
47. half-life
50. heterotroph
53. immigration
56. invasive species
59. irrigation
62. keystone species
65. K-strategist
68. landfill
71. mineral
74. monoculture
77. mutation
80. mutualism
83. natural resources

Terms:
3. niche
6. nonpoint source pollution
9. overexploitation
12. parasitism
15. pesticides
18. pH
21. photosynthesis
24. pioneer species
27. point source pollution
30. pollinator
33. predator
36. primary succession
39. productivity
42. r-strategist
45. runoff
48. second law of thermodynamics
51. secondary succession
54. silviculture
57. specialist
60. speciation
63. sprawl
66. subsidy
69. sustainable development
72. thermal pollution
75. trophic cascade
78. urbanization
81. watershed
84. weathering

This assignment is due the second week of class. Any student handing in the assignment the first day of class will receive 10 bonus points. You can email me at cbernardelli@bcps.org if you have any questions. Enjoy your summer.