Ocean Acidification Report

**Due Date: Wednesday, February 27 (Lab Grade: 50 total pts)**

 Over the last few days, you have studied the phenomenon known as Ocean Acidification; that Earth’s oceans are slowly becoming more acidic. In this assignment, you will write a brief **report** that summarizes your findings from the past few days of exploration about this topic. You will also construct a **visual aid** to support your report.

**Part 1: Report (30pts)** Your report should be no less than **three paragraphs** long, and must include the following:

**Paragraph 1:** An overview **(10 pts)**

* A brief, catchy introductory statement
* A definition of ocean acidification and how the ocean’s pH is changing
* A description of ***why*** the ocean is becoming more acidic, including a small discussion about the carbonate buffer system

**Paragraph 2:** Carbon dioxide effects **(10 pts)**

* The 3 biggest sources of atmospheric CO2 , which becomes dissolved in the oceans
* The trend of atmospheric CO2 over time (i.e., is there more, less, or about the same CO2 in the air as there was one-hundred years ago?)
* How CO2 interacts with other molecules in the ocean, including H2O and carbonate (CO32-)

**Paragraph 3:** Effects on Marine and Terrestrial Life **(10 pts)**

* How does ocean acidification and an increase in CO2 in the air affect the ability of oysters to make their shells?
* Why does it matter that oyster populations in the Chesapeake Bay are declining?
* A statement about the urgency of this phenomenon as a problem that must be solved. How crucial do you believe it is that humanity address ocean acidification?

Your report may be hand-written or typed. All hand-written reports must be written legibly and be easy to read. **Reports that are too difficult to read because of handwriting will not be scored.** If you are worried about your handwriting, consider typing your report.

**Part 2 – Visual Diagram (20 pts)**

 You will also draw a visual aid to explain the main points of your report. The visual aid should depict the flow of CO2 from its major sources on land into the oceans. The diagram should show the following:

* Major sources of CO2 on land and the flow of CO2 from those sources into the atmosphere and into the ocean
* The chemistry that occurs when CO2 is dissolved in the ocean and interacts with molecules in the ocean (i.e., what does CO2 react with and what is produced as a result?)
* How that chemistry affects the ability of oysters to make their shells, affecting the oyster population in the Bay