Your reading can be found at the link below. Read the article and answer the followup questions that tie back into your weekly learning.
https://www.acs.org/content/acs/en/climatescience/oceansicerocks/oceanchemistry.html

1) For millions of years the concentration of what chemical substances were at a relatively stable equilibrium?
   CO_2, HCO_3^- , CO_3^{2-}

2) The industrial revolution caused what substance to be introduced at a higher rate into Earth's atmosphere? Would this disrupt equilibrium?
   CO_2. Yes, as more CO_2 is introduced the reaction would favor the production of more HCO_3^- and CO_3^{2-}.

3) We see that CO_2 can either remain in the gaseous atmosphere or can be absorbed into the aqueous ocean. There are multiple factors that affect the solubility of CO_2 into ocean water (whether it is absorbed or not into the ocean). Answer the subset questions below.
   a. As atmospheric CO_2 increases, the solubility of oceanic CO_2 will (increase/decrease/stay the same)
      Increase

   b. As temperature increases, the solubility of oceanic CO_2 will (increase/decrease/stay the same)
      Decrease

4) As CO_2 concentrations are increased in the oceans, Le Chatelier's Principle favors the forward reaction increasing the production of what 2 products?
   HCO_3^- and H^+

5) Based on your response for number 4, the ocean becomes more (acidic/basic/stays the same)
   Acidic because the increase in hydrogen ions creates a more acidic environment.

6) Researchers found that the pH of ocean water has decreased from 8.2 to 8.1. Does this (agree/ disagree) with your response for number 5.
   Your response should agree because a decrease in pH becomes more acidic as opposed to an increasing pH which becomes more basic.

7) What are some of the negative effects of increasing ocean acidity as it relates to sea life and human life?
   Some life that is not well adapted to the more acidic environment may not survive as successfully as other life forms disrupting the natural ecosystem. Certain organisms may not be able to survive that are not only a part of wild animal diets but also human diets as well. The impacts of ocean acidification are unknown to the severity in which they will

occur but we can hypothesize that the results will not be positive for nature or for human life.