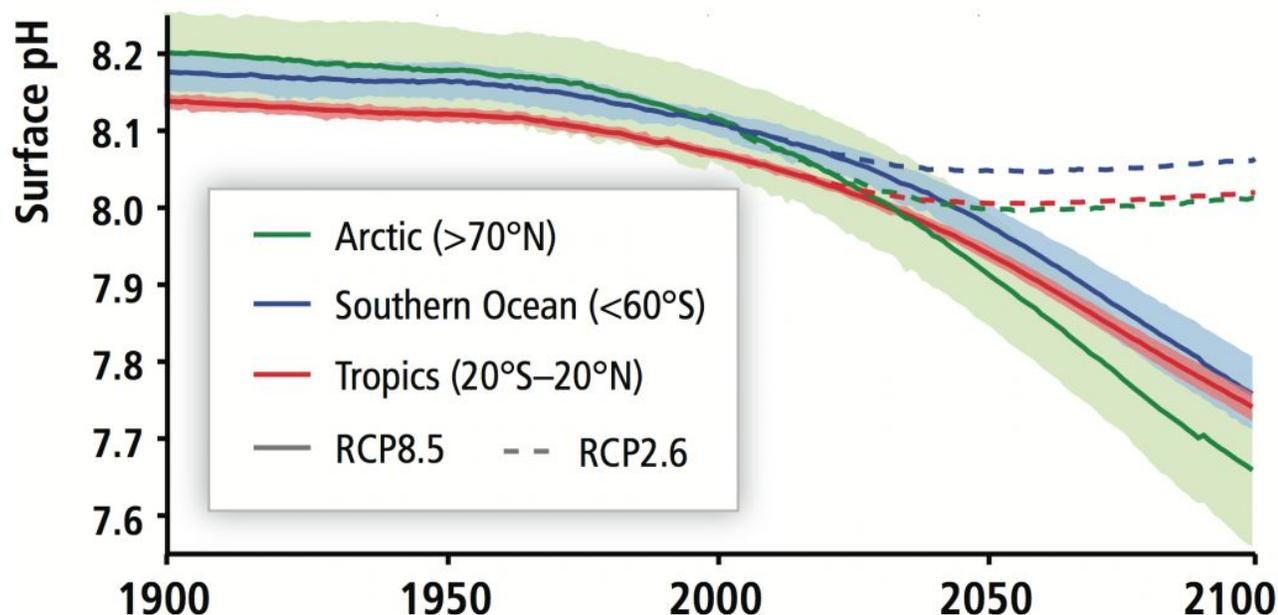


Data Integration Assignment

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Title: Ocean pH: Past, Present and Future

Source: <https://www.climatecentral.org/news/tools-solve-mystery-of-ocean-acidity-18696>



The data presented in the graph above could be used to engage students in a unit about acids and bases. It is a much more compelling and wide-reaching topic than our normal discussion of acidic foods and dental health. It shows students an application of what they are learning in class and connects it to a major global crisis that the world is currently facing. I think many of my students have a general knowledge of what is happening to the coral reef from the earth/environmental science class they take before they get to me in chemistry. I know many of them would enjoy learning more about why/how the growth of the coral reef is slowing and weakening. It might also be interesting to obtain the source data for this graph and ask the class to graph it themselves and then discuss what they think might be causing the decrease in ocean pH.

I am fairly new to the idea of having students analyze/discuss real scientific data in my class. I almost always discuss real examples and applications of what we are learning to help make it more meaningful for my students. When I read a new study or news article that relates to my content, I usually sum it up and briefly discuss it with the class. I think taking this one step further by providing them with the data and having them analyze it will be fairly easy to incorporate in my class on a regular basis. More importantly, I think this will make the learning more valuable and longer lasting for my students.

I think this data provides a lot of opportunities for interdisciplinary crossover. Lessons centering around the impact of ocean acidification on plant and animal life are a natural next step. At the high school level, learning about the connection between CO₂ emissions and ocean pH can easily turn in to discussions of domestic and global economic and environmental policies. The graph also shows the RCP2.6 and RCP8.5 projections based on the best and worst case climate scenarios. Students might be interested in any technology that is being developed or used currently to help prevent the worst case scenario from coming to fruition.