



Ocean pH Values: Past, Present, and Future

Name _____

Date: _____

Engage

Background

What I know about pH:

What I know about the carbon cycle:

What I know about carbon dioxide and pH being linked:

What do I still wonder about:

Explore

Part A - NOAA Data Set - Past Data and Future Data

*Carbon in the atmosphere can be absorbed by the ocean, changing the ocean's pH.
What has this looked like over time?*

My map of historic pH data in the ocean
(insert map image here)

Year _____

My map of future pH data in the ocean
(insert map image here)

SSP Scenario _____

Year _____

Analysis

What do you notice? What is different between the two maps? Is there an area in the ocean that is impacted in the future more drastically with a pH change than another ocean basin?

Part B - GO-BGC Data Set - Current Data

Think of choosing *three* different climate locations for your three different samples.

Sample #1

Float # _____ Ocean Basin _____ Last Station Date _____

Insert pH in situ graph:

What is the pH range in the very top levels of the ocean? _____

Sample #2

Float # _____ Ocean Basin _____ Last Station Date _____

Insert pH in situ graph:

What is the pH range in the very top levels of the ocean? _____

Sample #3

Float # _____ **Ocean Basin** _____ **Last Station Date** _____

Insert pH in situ graph:

What is the pH range in the very top levels of the ocean? _____

Explain

Analysis

- What do you notice?
- What is the difference between of pH ranges for the three locations studied?
- Did any current pH values match the predicted pH values that will occur in the future?
- What do you think might add to pH levels changing in the ocean?
- Pose a further research question that you would be interested in studying.

