PH LAB 04-29-11

■ objective: to better understand how carbon dioxide dissolves in the ocean and it's effects on ocean acidity and temperature change.

■ procedure: PART ONE : CO_2 & Ocean Water

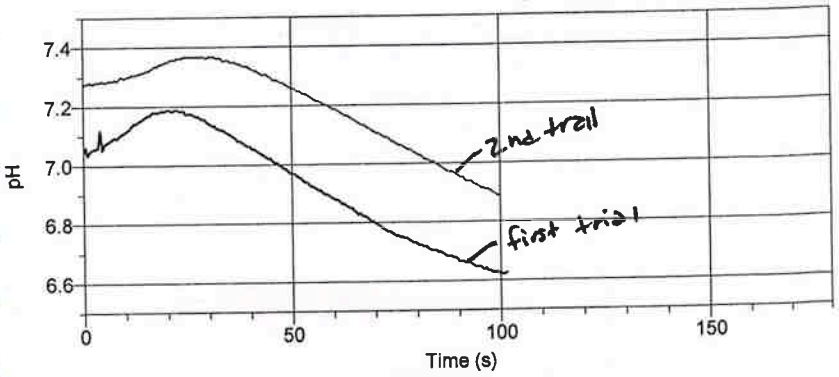
1. Gather up all of the nessary materials and set up the labquest with both a thermometer and a ph probe.

2. Make sure the glassware you use is clean and then fill it with 100 mL of room-temperature ocean water. Place both the temperature and PH probes in the water using a ring stand.

3. Record the temperature of the water and the intial PH value of the water.

4. Place a clean straw into the beaker. 10 seconds after starting data collection, blow out through the straw into the water for 90 seconds.

Adding CO_2 from your breath to Ocean water at 10.7°C
(PH LEVELS RECORDED OVER 100 seconds)



DATA ON NEXT PAGE ↷

Adding CO_2 from your breath to Ocean water at 10.7°C

TIME (s)	0	10	20	30	40	50	60	70	80	90	ΔpH
PH	7.30	7.35	7.37	7.33	7.26	7.19	7.11	7.03	6.95	6.89	-.41

PART II: TEMPERATURE

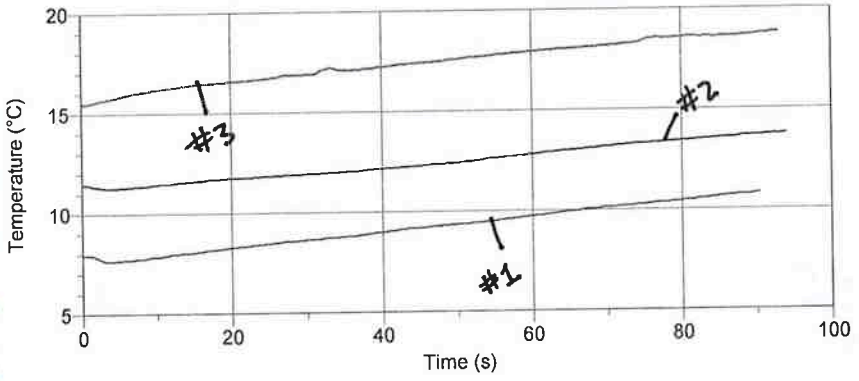
1. Replace all of your solutions with "fresh" ocean water and cool the water so that the temperature of the water is between 8° and 14° C.

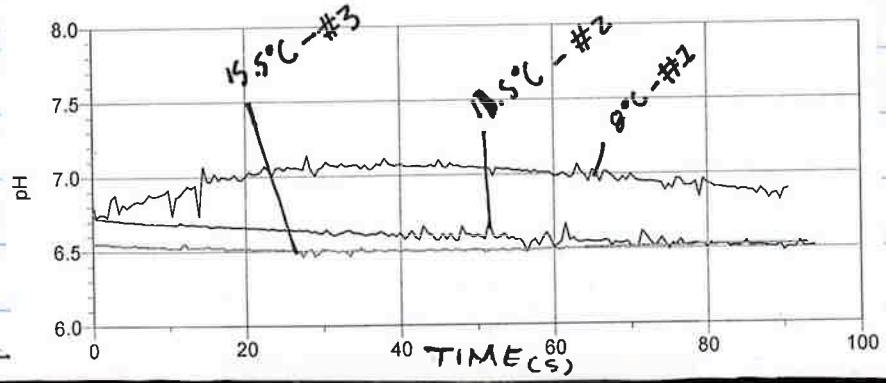
2. Repeat the trial by blowing air through the straw for 90 seconds and record results.

3. Then repeat ~~all of step part II~~ the trial after raising the temperature of the water 1°C, 2°C, 5°C

DATA

PH LEVELS RECORDED OVER 100 seconds of adding CO_2 from your Breath & the accompanying temperature change





.7°C

	ΔpH
	-.41

#1 Adding CO_2 from your breath to Ocean Water at 8.0°C #1

TIME(s)	0	10	20	30	40	50	60	70	80	90	ΔpH
pH	6.90	6.91	7.0	7.07	7.07	7.05	7.01	6.95	6.93	6.89	-.01

Adding CO_2 from your breath to ocean water at 11.5°C #2

TIME(s)	0	10	20	30	40	50	60	70	80	90	ΔpH
pH	6.74	6.68	6.66	6.62	6.61	6.6	6.57	6.52	6.5	6.48	-.26

ADDing CO_2 from your breath to Ocean water at 15.5°C #3

TIME(s)	0	10	20	30	40	50	60	70	80	90	ΔpH
pH	6.55	6.52	6.51	6.51	6.49	6.48	6.51	6.51	6.51	6.52	-.03

DATA

ANALYSIS & CONCLUSION:

· Water at 10.7°C ~~changed the most from~~ had the highest change in pH levels than at any other temperature. This makes sense seeing as that was the natural temperature for the ocean water. Water's pH does change at "dramasitcally" different rates when it is at different temperatures. If the oceans warm up then the pH levels shouldn't change as drastically as it will if it slightly cools like the water that was in the fridge.

give #s

cont.

This water was very close to original ocean water temp, but it was slightly cooled. We also could have made some very big errors. Our trials don't seem very consistant, but I am not sure what I did wrong. Perhaps I did not exhale at a steady rate. Also, you can not apply a curve fit to this graph so it is difficult to calculate your error.