

23D – OCEAN ACIDIFICATION

Part 1 Analysis – Gaseous carbon dioxide

Table 1 – Water and indicator

	Observations	pH
Water + indicator initial		
Water + indicator final		

Part 1 Questions – Gaseous carbon dioxide

1. What happened to the pH of the water during this process? Did the water become more acidic or more basic?
2. What substance from the carbonated water caused the change in pH?
3. How do the dome and the swirling help model what happens to gaseous carbon dioxide over an ocean on Earth?

Part 2 Analysis – Burning hydrocarbons

Table 2 – Water, indicator and lit candle

	Observations	pH
Water + indicator initial		
Water + indicator – after burning		
Water + indicator – after swirling		

Part 2 Questions – Burning hydrocarbons

1. What happened to the pH of the water during this process? Did the water become more acidic or more basic?
2. What substance caused the change in pH? Where does this substance come from?
3. In your own words, use the reactions in the background section to explain how gaseous carbon dioxide can change the pH of water.
4. How did the color change and the pH change in the second part of the lab compare to the first part of the lab? Give some reasons for the differences.

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- ❓ 5. In general, what do you think the relationship between the concentration of atmospheric carbon dioxide and ocean pH would be?
- ❓ 6. Burning a candle is a model for burning fossil fuels on Earth. How has human activity (burning fossil fuels) affected the amount of carbon dioxide in the air, and the pH of the oceans?