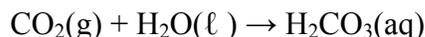


Launch Lab: The Colour of Your Breath Answer Key

Answers to Analysis Questions

1. Your breath produces an acidic substance when you blow into the aqueous solution. In fact, the acidity is caused by the reaction of carbon dioxide with water to form aqueous hydrogen carbonate, or carbonic acid:



You should recognize $\text{NaOH}(\text{aq})$ as a base. Since the original solution was basic, a neutralization reaction is taking place. Once the carbonic acid has neutralized all the sodium hydroxide, additional breaths acidify the solution further.

2. It takes less time for the colour change to occur if you hold your breath before blowing into the straw. Holding your breath increases the concentration of $\text{CO}_2(\text{g})$ in the exhalation.
3. The time it takes you to acidify the solutions will probably vary, but the overall observations should be the same: the basic solution is blue, but turns green and then yellow with increased breaths.