Chemistry 12

Lab: Investigating Buffers

Procedure

Beaker #1: Unbuffered Solution

1. Place *about* 50 ml of water in a beaker.
2. Add a few drops of universal indicator and note the colour and record the pH.
3. Add a few drops of 1.0 M HCl. Note the new colour and record the pH.
4. Save this beaker & solution for comparison to beaker #2.

Beaker #2: Buffered System

1. Make a buffer solution in a new beaker. Do this by putting *about* 50 ml of 0.10 M $NaHCO_3$ solution in the beaker and then blowing exhaled breath (which contains what gas??) into the solution for about one minute using a straw. **Do not drink the solution!!!**
2. Add a few drops of universal indicator and note the colour and record the pH.
3. Add a few drops of 1.0 M HCl as you did above and note the colour and record the pH.
4. Continue to add acid drop by drop, counting the drops (swirl to mix) until the colour matches the unbuffered solution from step 3 beaker #1.
5. Record the number of additional drops of HCl needed.