

Buffering of Lakes and Streams Worksheet

Observations

Using colored pencils, draw the colors of the indicator solution throughout the demonstration column and in the filtrate.

Post-Lab Questions

1. Compare the initial color of the rainfall solution and the color of the filtrate. Is the pH of the filtrate higher or lower than the acid rain solution? Is it more acidic or more basic?
2. As the “acid rainfall” solution containing universal indicator passes through the demonstration tube, it changes color indicating a change in pH. Write out the balanced chemical equation for the “acid rainfall” solution reacting with the marble chips.
3. The formation of bicarbonate ions creates a natural buffer system in lakes and streams. Write a balanced chemical equation for the buffering reaction of bicarbonate ions with acid. Describe the physical evidence supporting the presence of a buffer system.
4. A soil sample collected from a local stream was found to have high sand content. Is the water found in this stream likely to be more basic or acidic and why?