

Breathing Through Universal Indicator

Instructions

Materials:

2 large beakers

Tap water

Universal Indicator

0.1 M NaOH (sodium hydroxide)

Set Up:

1. Fill one large beaker with tap water
2. Add Universal Indicator to the beaker of water

Demo Procedure:

1. Point out that tap water at neutral pH (7.0) is green when mixed with Universal Indicator.
2. Add 0.1 M NaOH to the green solution, observe how the solution turns to blue as the pH increases from neutral to basic.
3. Pour $\frac{1}{2}$ of this alkaline solution into a second beaker to act as a control.
4. Using a straw blow rigorously into one of the beaker with the blue solution. The exhaled breath mixes carbon dioxide gas into the water to form carbonic acid.
5. Observe how the solution turns from blue to green to yellow as the pH in the solution drops from basic to neutral to acidic.