

CHAPTER 6	Launch Lab: The Colour of Your Breath	BLM 6.0.1
HANDOUT		

Bromothymol blue is an acid–base indicator, meaning it turns different colours in solutions of different pH. It is used in products to test the pH of swimming pools. As you carry out this activity, recall what you have learned about acids, bases, pH, and indicators.

Safety Precautions



- Bromothymol blue is harmful if swallowed. It may cause irritation to your skin, eyes, and respiratory tract.
- Sodium hydroxide is corrosive. If you spill any on your skin, immediately rinse with plenty of cold water.

Materials

- tap water
- bromothymol blue indicator 
- 0.10 mol/L NaOH(aq) in a dropper bottle  
- 100 mL graduated cylinder
- 250 mL Erlenmeyer flask
- straws
- stopwatch or clock with second hand

Procedure

1. Using a graduated cylinder, measure 100 mL of tap water and pour it into the Erlenmeyer flask.
2. Add five drops of bromothymol blue indicator. Record your observations.
3. Add drops of NaOH(aq), swirling the solution after each addition, until the solution turns blue.
4. Start the stopwatch. Using the straw, blow into the solution until the solution changes colour.
Caution: Do not draw the solution into the straw.
5. Observe how long it takes for a colour change to occur.
6. Repeat Steps 3 to 5, but hold your breath for 30 s before Step 4.
7. Observe how long it takes for a colour change to occur.
8. Dispose of the waste as directed by your teacher.

Analysis

1. Based on your prior knowledge, what type of substance was produced when you blew into the solution? Explain your answer.

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2. How did holding your breath for 30 s affect your observations, if at all? Explain your observations.
3. As a class, compare and discuss your results. Did your classmates see similar results? Discuss why or why not.