

Photosynthesis/Respiration Demo

Introduction: Plants take in and give off gases as they use photosynthesis to make food. What gas do they give off? What do they take in? In this activity, you will test photosynthesis with an indicator chemical that turns yellow/green in CO_2 . It is called Bromthymol Blue and is blue in a solution that does not contain CO_2 and will remain blue in the presence of O_2

Materials: pond plant, 3 test tubes/caps, 1 large beaker, 2 small beakers, straw, Bromthymol Blue

Procedure:

1. Get a large beaker with 60 ml of Bromthymol blue solution. Blow bubbles in it with the straw until it changes to a green color. Pour 20 mL of this solution into each of the three test tubes.
2. Put a plant piece in test tube 1 and put the cap on. Put a plant piece in test tube 2 and put the cap on. Cover test tube 2 with foil to keep the light out. Put a cap on test tube 3 with NO plant.
3. Place Test tube 2 (with the foil) in a large beaker in your lab cupboard.
4. Set test tubes #1 and #3 in the other large beaker and place the beaker outside in the sun.

Prediction: Which test tube will allow the most photosynthesis?

Data:



Test tube 1
With plant in light



Test tube 2
With plant in dark



Test tube 3
Without plant

1. What gas in your breath made the Bromothymol Blue turn green?
2. What process in your body produces this gas?
3. Which test tube helped the plant turn the color back to blue best? Why?
4. What process in the plant turns the Bromothymol blue back to blue?
5. What is the formula for photosynthesis?
6. Which part of the formula did you test today?

