

# Classroom Activity

## 10 Big Question: How did life evolve on Earth?

### Photosynthesis

Photosynthesis is important for many reasons, one of which is that it produces oxygen that we breathe. However plants also respire, meaning they can consume oxygen and produce  $\text{CO}_2$  just like animals do. This experiment will look at how light affects this process.

You will need:

2 x 1L beakers

2 x glass funnels

2 x test tubes (that fit over the funnel nozzle)

Water, pondweed, matches

Method:

In the morning, take the two beakers, and place some pondweed in each. Fill to about 3/4s full with water then cover the weed with an upside-down funnel. Fill the test tubes with water and place them over the end of the funnel (the water should mean any gas in the test tube later is only that which the plant produced). Place one beaker in a dark cupboard, and one in bright sunlight for several hours.

In the afternoon, you should see some gas building up in the test tube. Remove the test tube from the funnel (placing your thumb over the tube so the gas doesn't escape) and get your teacher to test what kind of gas it is. You do this by using a glowing match – if the match re-lights when you put it in the test tube, then the gas is Oxygen. If it goes out you've got  $\text{CO}_2$ .

Discuss:

Which plant produced which gas? Why do the different light levels produce different gas? What does this mean for plants when the sun goes down? What would happen if the sun was blocked out permanently?

This classroom activity was suggested by Elizabeth Maciunas, PhD student with the School of Earth and Environmental Sciences, University of Adelaide.