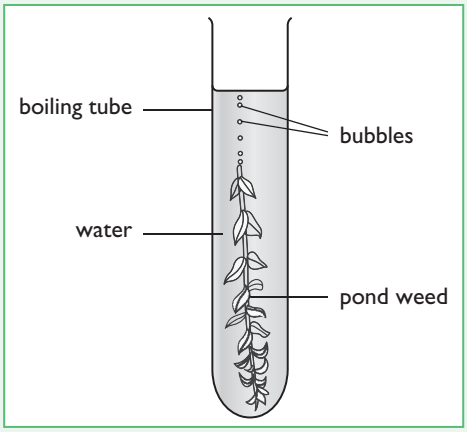
Activity 6.7
Photosynthesis in pond weed

Skills
AO3.1 Using techniques, apparatus and materials
AO3.3 Observing, measuring and recording

You are going to see how light intensity affects the rate of photosynthesis in a piece of pond weed.

1 Set up this apparatus



2 Watch for a while, and see if you can spot bubbles coming out of the weed. If you cannot see any after 5 minutes, ask your teacher for a new piece of pond weed.
3 Take your apparatus into a dark room, or surround it with black paper. You still need to be able to see it, because you will be counting bubbles.
4 Leave the apparatus for 5 minutes, to allow the weed to adjust to its new surroundings.
5 Count the number of bubbles given off in one minute. Repeat this two more times. Write your results in the table.
6 Now bring the apparatus back into the light. Leave it for 5 minutes, then count bubbles as before.
7 Copy and complete the table by calculating the mean (average) number of bubbles per minute in each condition.

Conditions	Number of bubbles in one minute			
	1st count	2nd count	3rd count	Mean
in the dark				
in the light				

Questions

A1 a Suggest what gas was in the bubbles that were given off by the pond weed.
b Explain your answer.
c If you could collect this gas, how could you test it to find out if you are right?

A2 Describe the difference between the number of bubbles per minute in the dark and in the light.

A3 Suggest an explanation for your results.

Taking it further

- Collect results using lamp at different distances from the plant, in a darkened room. Use your results to plot a graph of number of bubbles per minute against distance of lamp from the plant. Explain the shape of your graph.
- Think about how pond weed and other plants are important for animal and human life on Earth. What would our atmosphere be like if there were no plants?