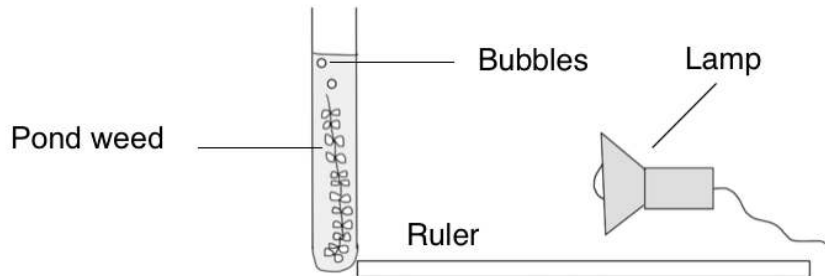


0 1

Some students investigated the effect of light intensity on the rate of photosynthesis.

They used the following apparatus and method:



1. Place a lamp at 80 cm from the pond weed.
2. Wait three minutes.
3. Count the number of bubbles released from the pond weed in one minute.
4. Move the lamp 10 cm closer.
5. Repeat steps 2 to 4 and stop at 20 cm.

0 1

1

Why did the students wait three minutes before taking a reading at each distance?

[1 mark]

To allow the plant to adjust/to give time for bubble time to change

0 1

2

Suggest a reason why the students did not record data for distances closer than 20cm?

[2 marks]

the lamp that close might warm the water [1]
temperature affects/speeds up the rate of photosynthesis/needs to be controlled [1]

The table shows the results of the experiment

Table 1 - Distance vs bubbles per minute

Distance (cm)	20	30	40	50	60	70	80
Bubbles per minute	18	18	18	15	12	7	2

0 1

3

Describe and explain the results above for the distances between 20cm and 40cm

[2 marks]

the number of bubbles/rate of photosynthesis stays the same/constant [1]
photosynthesis at maximum rate [1]
because light intensity is no longer the limiting factor [1]
another factor is limiting or carbon dioxide or temperature is limiting [1]