

## Investigation into the effect of Light Intensity on Photosynthesis in Elodea

### Prediction

I predict that as the light intensity doubles the number of bubbles produced per minute will double

## Results

Distance from beaker (cm)	Light Intensity	Number of bubbles Produced Per Minute		
		Repeat 1	Repeat 2	Repeat 3
100	0.01	9	10	10
75	0.02	16	17	15
50	0.04	25	21	23
30	0.1	32	50	44
20	0.3	46	21	47
15	0.4	92	90	88
10	1	104	90	94
9	1.2	111	102	96

## Conclusion

Figure 1 shows that repeat 1 rises steadily then when light intensity is at 0.4, 1, 1.2 it rises rapidly then will slowly level off as you cannot acquire anymore bubbles from the Elodea. Figure 1 likewise also shows that Repeat 2 rises slowly then goes down rapidly than it rises rapidly again and levels off. Figure 1 also shows those repeat 3 rises slowly and levels off.

When the Light Intensity rises and the distance from the beaker moves closer to the light the Elodea produces more bubbles of carbon dioxide rises until there is no more carbon dioxide in the water or in the Elodea so that is why the results in figure 1 levels off.

The results show that my initial idea was correct as the distance from the beaker is moved towards the light the results of repeat 1,2 and 3 proceed higher. Repeat 3 has a increased gradual results than repeat 1 and repeat 2 who are other 100 by distance from beaker was 9cm and the light intensity was 1.2.

### Evaluation

This experiment was inaccurate. The lights in the science lab were on so that would have increased the light intensity more than was needed. Likewise the amount of carbon dioxide dissolved in the water was not controlled so more carbon dioxide could have been in the water than the other repeats making the test unfair and wrong.

I would improve the experiment by turning off all the lights in the science lab so that the light intensity would be equal for every repeat. I would also control the amount of carbon dioxide in the water by using the same amount of water from the tap at almost the same

time, so there would be the same temperature, same amount of carbon dioxide and I'd measure the amounts of water.

I found that all the results in Repeat 3 were anomalous as the results in repeat 1 and 2 were almost running parallel with each other by there results except for when repeat 2 went from 21 to 50 to 21 and up to 90. All the results in repeat 1 and repeat 2 have made the final result over 100 whereas repeat 3 had only just got beneath 100.

The quality of the evidence

The quality of the evidence is not fair. The experiment was not completed fairly as the same piece of Elodea was used for each repeat likewise the same water.

The data was not reliable, as the experiment was not fair as they'd kept the lights on in the classroom giving more light to the experiment and they did not measure the amount of carbon dioxide in the water.