Factors affecting the rate of transpiration

Results

Distance from lamp (cm)	Distance moved by bubble (cm)		
	1st attempt	2nd attempt	Average
90			
80			
70			
60			
50			
40			
30			
20			
10			

Conclusion

Looking at the graph, we can recognize that as the distance between the lamp and the plant increases, the distance moved by the bubble decreases, making th em inversely proportional; meaning that a decrease in light intensity reduces the rate of transpiration. This is in support of my earlier prediction that stated "...as I increase the light intensity on the plant, the faster it will transpire and take up wate r to replace the water lost".

We know that light stimulates the stomata making them open. This allows for more water vapour to be released and in turn causes a greater uptake of water over a given time and an increase in the rate at which the plant trans pires. But my evidence also proves that the intensity of the light on the leaves, (and subsequently on the stomata) speeds up transpiration. This would be because the less concentrated the light is on the plant, the less stomata are stimulated to open and therefore the lesser surface area for the water to diffuse out of.

Evaluation

The results were all accurate and sufficient for arriving at my conclusion. There did not appear to be any anomalous results and the average taken made the evidence very relia ble.

However it is not certain as to whether the pattern in my results would have been true, if the distance traveled by the bubble was recorded over a longer period of time. If I had more time, I would investigate the distance traveled by the bubble ove r a longer period of time; or perhaps the time taken for the bubble to move a set distance. This is likely to improve the reliability of my evidence and the accuracy of conclusions drawn.

To further develop my study of the factors affecting transpiration , I would have liked to investigate another of the various factors outlined in my plan. I would also be interested in investigating the specific effects that using the screen had, on the distance moved by the bubble in 1 min.