

Key Stage 4 Photosynthesis Investigation

Aim:

The aim is to find out whether light intensity affects the rate of photosynthesis.

Prediction + Theory/Hypothesis:

I predict that light intensity (brightness) does affect the rate of photosynthesis. As the intensity gets higher I expect that the rate of photosynthesis will increase, until it can't increase any more due to limiting factors such as CO₂ levels + temperature

Plan/Method:

1. Set up all equipment (see diagram).
2. Set the voltage on the power pack and then turn on the power pack.
3. Time for 1 min, then, when 1 min is up, turn off the power pack.
4. Use the micro-burette and record the results.
5. Do step 2-3-4 until you reach the maximum voltage (that you want)

Equipment List:

- Glass block
- Power pack
- Light bulb
- Glass beaker
- Water (100ml)
- Pond weed
- Micro-burette

Diagram:

Results:

Voltage (volts)	Exp. 1 Oxygen Collected (cm³)	Exp. 2 Oxygen collected (cm³)	Exp. 3 Oxygen collected (cm³)
4	6.25	25.15	15.70
6	25.14	30.15	20.55
8	62.70	100.48	40.67
10	75.45	125.70	55.85
12	100.20	75.60	85.75

Conclusion:

From my results I can conclude that my prediction was correct. My prediction about limiting factors such as Co₂ level + temperature were also correct.

Evaluation:

I think that my method was suitable for this investigation as you can see from my results. I think that my investigation supports my results and my conclusion