

Combined Science - Biology- Key Stage 4  
Bioenergetics

# Photosynthesis Required Practical Results

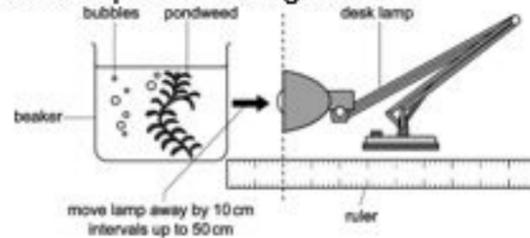
Miss Strmec



# Independent Practice

1. Puj investigates how light intensity affects the rate of photosynthesis in pondweed.

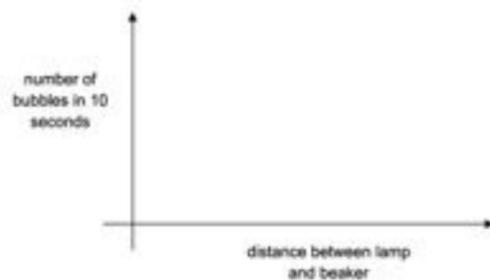
The diagram shows how he sets up his investigation.



Puj plans to place the lamp at distances 10 cm, 15 cm and 20 cm from the beaker.

Puj plans to measure how much gas the pondweed gives off in 10 seconds.

i. Sketch a line on the axes below to show the results you would expect.



[2]

1. Apply your skills by drawing a curve to illustrate the outcome of the practical described.
2. Explain the shape of the curve in relation to the effect of light intensity on the rate of photosynthesis

ii. Explain the shape of the graph. **Two** explanations are required.

-----

-----

-----

[2]



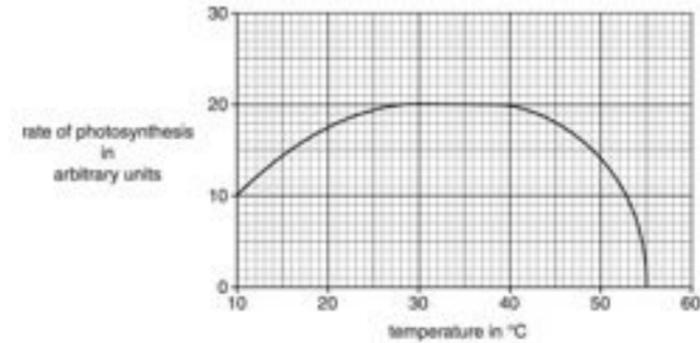
# Independent Practice

1. Wilson knows that the rate of photosynthesis depends on temperature.

He wants to use heaters in his glasshouse to make his tomato plants photosynthesise faster.

He wants to find out the best temperature to have in his glasshouse.

Look at the graph.



i. Describe what the graph shows. Use data in your answer.

.....

.....

.....

.....

.....

[3]

Credit: OCR Exambuilder



ii. According to the graph, what is the best temperature for Wilson to have in his glasshouse?

..... °C

Explain your answer.

-----  
-----  
-----  
-----

[2]

iii. Before Wilson decides to use heaters in his glasshouse, suggest what else he should consider, apart from the increased rate of photosynthesis.

-----  
-----  
-----  
-----

[2]

Credit: OCR Exambuilder



# Recall Questions

1. What are the four limiting factors of photosynthesis?
2. What happens to the rate of photosynthesis when the lamp is moved away from the pondweed?
3. What happens to the rate of photosynthesis when concentration of carbon dioxide increases?
4. What does the term “optimal” mean?
5. What does it mean when a graph levels off?

