المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

Worksheet | Lower Secondary Stage of (6-8)

1st Semester | 2023-2024

Subject: Biology

Name :

Date :

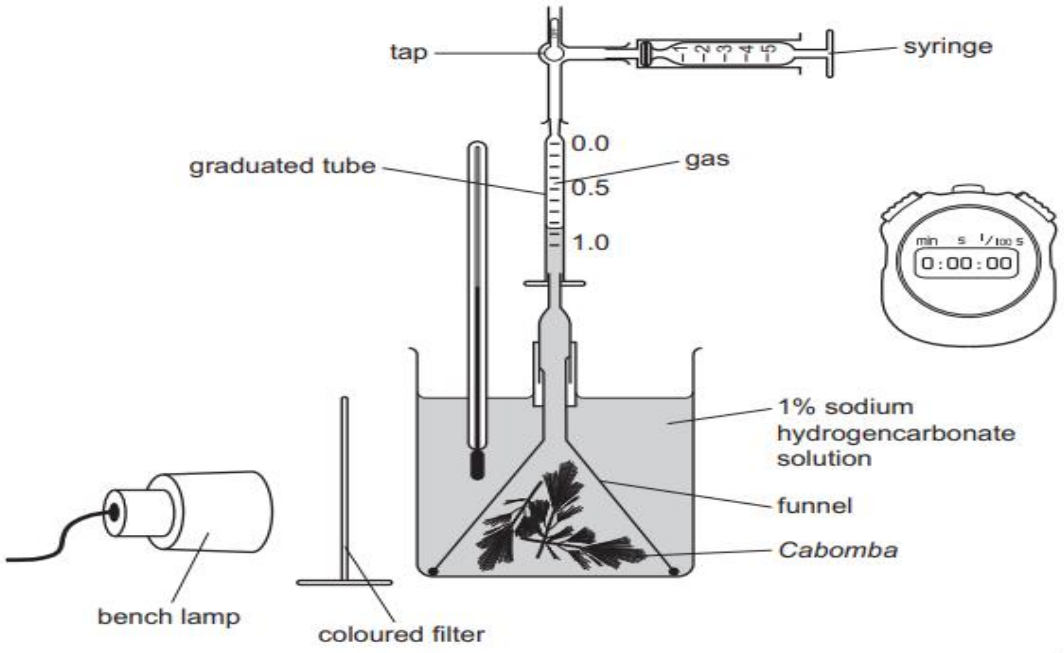
Alternative to practical

Objectives: Be able to answer questions about photosynthesis

Question 1 :

A student investigated the effect of different wavelengths of light on the rate of photosynthesis of the water plant, Cabomba.

The student used the apparatus shown in the figure .



The student collected the gas produced by the plant for five minutes. The results are shown in the table .

colour of filter	wavelength of light / nm	volume of gas collected / cm^3
violet	400	0.80
blue	475	0.80
green	550	0.20
yellow	600	0.40
red	675	0.90

a. Name the dependent variable ……

b. Name the independent variable ……..

c. Which color of the filter helped to produce the largest volume of gas ?

……

d. State why the student:
   - kept the lamp at the same distance during the investigation.

     ……

   - Used sodium hydrogen carbonate solution.

     ……

e. Complete the table below :

Controlled variables	How to keep them controlled

Question 2 :

Three identical beakers of pondweed were left in darkness, dim light, or intense light for an hour .

Then the oxygen in each beaker was measured using an oxygen sensor.

Lighting	Dissolved oxygen (mg/dm^3)
Darkness	5
Dim light	14
Intense light	20

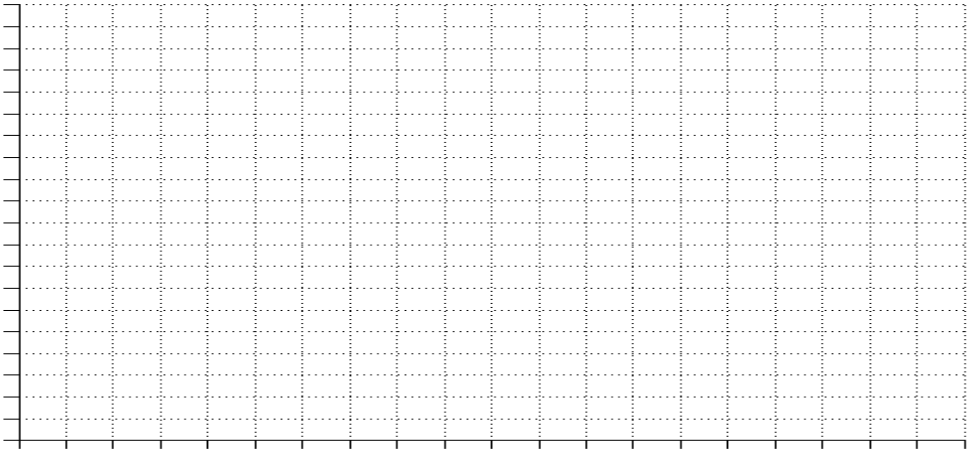
a. Name the dependent variable ……..

b. Name the independent variable ……..

c. Name the two controlled variables .

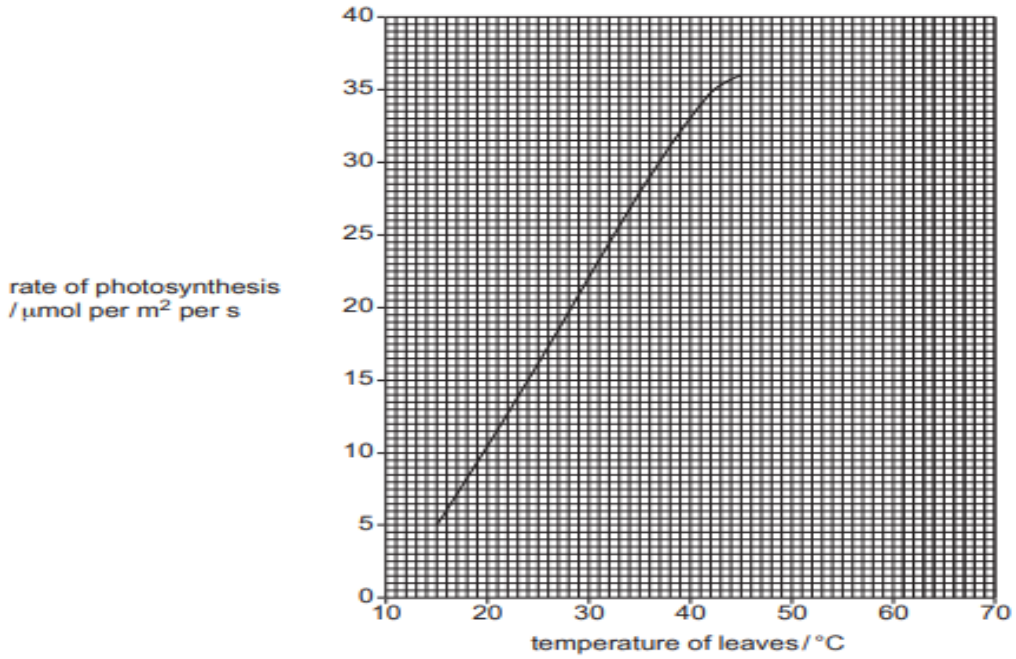
……

d. Draw a bar graph to show the results .



Question 3

An investigation was carried out to measure the rate of photosynthesis at different temperatures in California where the highest temperatures may be greater than 45°C.



- Predict and explain what would happen to the rate of photosynthesis if the investigation is continued at temperatures higher than 45°C.

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