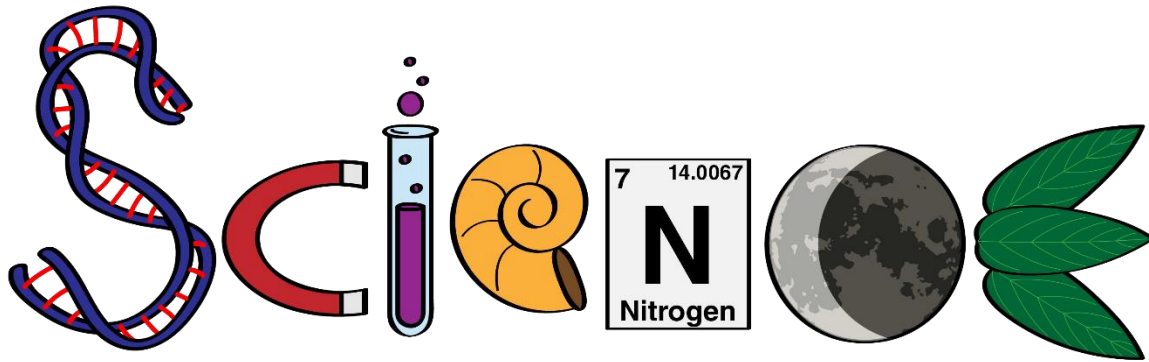




**ASPIRE**  
INTERNATIONAL SCHOOL



**Science Department**

**2023/2024**

**Year 8**

**Term 1, Week 2**

**Worksheets 2**

Name : .....

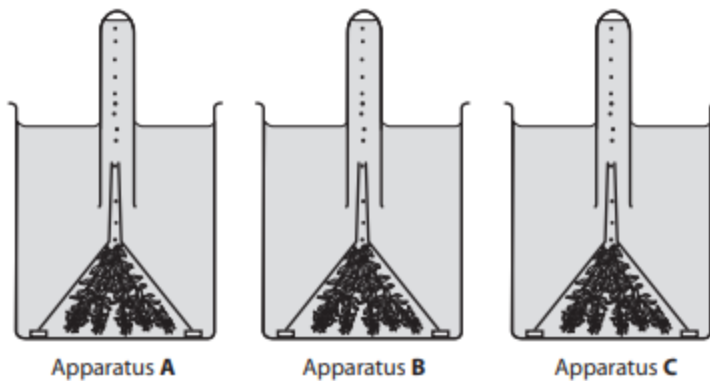
Class: .....

## Focus

In this exercise, you decide which variables to keep the same in an experiment. You put results into a table and make a conclusion.

Arun does an experiment to investigate whether plants photosynthesise faster when they have more light.

The diagram shows the apparatus he uses.



Arun puts Apparatus **A** next to a window.

He puts Apparatus **B** in a shady corner of the same room.

He puts Apparatus **C** in a dark cupboard.

1 What should Arun keep the same for all three sets of apparatus?

Tick (✓) **three** boxes.

the amount of light

the type of plant

the mass of the plant

the number of bubbles

the temperature

Arun leaves his three sets of apparatus for two days. Then he measures the volume of gas collected in each test-tube.

This is what he writes down.

A 18.3 cm<sup>3</sup>

B 7.2 cm<sup>3</sup>

C 0.5 cm<sup>3</sup>

2 Complete Arun's results table.

Apparatus	Amount of light	
A		
B		
C		

3 What conclusion can Arun make from his results?

Tick (✓) **one** box.

Plants need chlorophyll for photosynthesis.

Plants that live in water photosynthesise more slowly than plants that live on land.

Plants photosynthesise faster when they have more light.

Plants use water for photosynthesis.

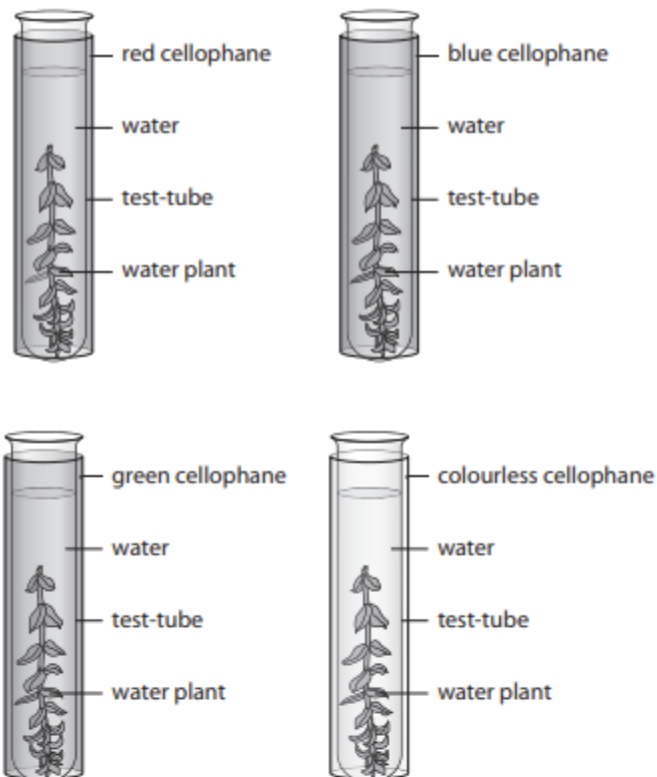
## 1.1B The effect of different colours of light on the rate of photosynthesis

### Practice

This exercise gives you practice in recording results, and also thinking about variables in an experiment.

Marcus wanted to find out which colour of light would make a plant photosynthesise fastest.

The diagram shows the apparatus that he set up.



Marcus shone a light onto each tube. He counted the number of bubbles that the water plant gave off in one minute. He did this three times for each piece of pondweed.

These are his results.

red - 10, 12, 11

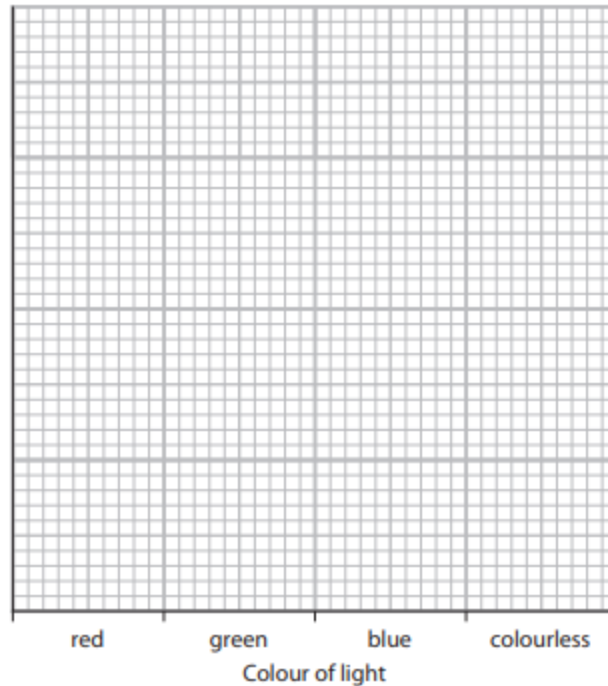
blue - 8, 12, 10

green - 4, 5, 6

colourless - 11, 13, 12

- 1 What was the variable that Marcus changed in his experiment?  
.....
- 2 What was the variable that Marcus measured in his experiment?  
.....  
.....
- 3 List three variables that Marcus should have kept the same in his experiment.  
  
first variable .....  
second variable .....  
third variable .....
- 4 Draw a results table in the space below, and fill in Marcus's results so that they are easy to understand. Remember to include a column where you can write in the mean value for each set of results.

5 Complete the bar chart to show Marcus's results.



6 Write down a conclusion that Marcus can make from his results.

.....  
.....

## 1.1C Turning an idea into a hypothesis that can be tested

### Challenge

In this challenging task you will choose an idea and then turn it into a hypothesis that can be tested by scientific experiment. Then you will write a plan for the experiment.

Here is an idea about water plants and photosynthesis.

**Idea:** Carbon dioxide is one of the raw materials for photosynthesis. We can provide extra carbon dioxide to a water plant by bubbling carbon dioxide gas into the water. This could allow the water plant to photosynthesise faster.

- 1** Use the idea to write down a hypothesis that you could test by doing an experiment.

Check your hypothesis with your teacher before you move on to question 2.

.....

.....

.....

- 2** Use this page and the next to write a plan for an experiment you could do, to test your hypothesis.

- Try to make your plan really clear and detailed, so that someone else could follow it to do your experiment.
- Include a labelled diagram of the apparatus you would use.
- Draw a results chart, with headings.
- Predict what you think the results might be, giving a reason for your prediction.
- Remember to state your independent variable, dependent variable, and the variables that you will try to keep the same.

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