

# Biology for general ed



Biology for General Education Introduction Biology is basically the study of life. (Carter, 2004) Since living things around us exists in the form of plants, animals, or insects; the study of biology branched out to other related subject such as: botany, zoology, and entomology.

As a biologist, being a good observer is one of the most important characteristic necessary in the study of Biology. Aiming to test the researcher's ability to perform a keen observation, the researcher will visit a garden which is located near the area where she lives. In the process, the researcher will discuss every single living thing that can be found in the garden and eventually develop a hypothesis based from the researcher's visual observation. To address the hypothesis, the researcher will conduct a scientific method to solve the question.

#### General Observation Seen in the Garden

Using visual observation, the first thing the researcher noticed in the garden are different varieties of plants and insects particularly some bees that fly over colorful flowers. At the left-side of the garden is a faucet and a green-colored hose which is connected to a metal water sprinkler used in watering the plants.

Basically, it is a common knowledge that plants need watering in order to grow. In the absence of rain water, human beings intervene with the watering of the plants using the man-made faucet and hose. Carbon monoxide that has been emitted by cars or the end-result of smoking is harmful to the health of human beings. Even though a lot of cars that passes by the park emit carbon monoxide, plants never seem to be affected by it. The question lies behind how plants can really be affected by the presence of carbon monoxide? What are the capabilities of these plants to protect itself

from the harmful effects of carbon monoxide?

Hypothesis I – Plants Have Special Properties that Converts Carbon Monoxide into Something Useful

There could be a possibility for plants to have some special properties that protects itself from carbon monoxide.

Scientific Method to Test Hypothesis I

As part of applying a scientific method to test hypothesis I, the researcher must conduct her own experiment to prove that hypothesis I is scientifically acceptable or not. (McDarby, 2006)

Research Methodology:

Based on the experimental procedure presented by Exell (2002), experimental methodology will make use of the following steps:

First – green plants will be placed inside a beaker full of water.

Second – place an inverted funnel over the green plants making sure that the wide opening of the funnel meets the bottom part of the beaker.

Third – place the inverted test tube on top of the inverted funnel.

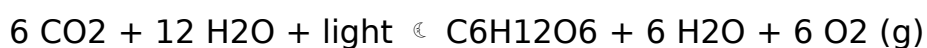
Fourth – expose the laboratory apparatus to sunlight for at least 5 hours (this will allow plants to produce gas within the inverted test tube. (See Figure I – The Production of Oxygen in Photosynthesis on page 4)

Research Findings

After exposing the apparatus under sunlight, gas was observed to be present inside the test tube. After removing the inverted test tube, a glowing piece of wood will be inserted into the tube to allow the wood to burn. This proves that plants are able to produce gas from photosynthesis. (Exell, 2002)

Basically, the chemical reaction that explains photosynthesis is represented by:

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(sugar)

#### Discussion

Given that oxygen (O<sub>2</sub>) is present in the atmosphere, plants could easily make use of carbon monoxide combined with excess oxygen found in air in order to produce carbon dioxide which is necessary for plants'

photosynthesis.



#### Conclusion

Based on the research findings, hypothesis I which assumes that plants have special properties that enables it to convert carbon monoxide into something useful is scientifically acceptable. By combining carbon monoxide with oxygen, carbon dioxide which is necessary for plants' photosynthesis is produced.

\*\*\* End \*\*\*

#### Figure I – The Production of Oxygen in Photosynthesis

Source: King Mongkut's University of Technology Thonburi, 2002

#### References:

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[The\\_Basics/02-Scientific\\_Method.htm](http://faculty.fmcc.suny.edu/mcdarby/Majors101Book/Chapter_01-The_Basics/02-Scientific_Method.htm)