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Home of Photosynthesis

Barrio High School

Welcome to the Photosynthesis Web Site!

This class web site documents the investigations we did while learning about photosynthesis.

This is also our way of reaching to other students who like us are investigating photosynthesis.

It also contains links to interesting web sites on photosynthesis.

So, feel free to browse our site. And when you're done, drop us a comment or two using the email address below.

dultz@ismed.upd.edu.ph

The Web Site Development Team

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BDHS

To contact us:

Phone: +632-928-2621 to 24 Ext. 21

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Photosynthesis occurs in the chloroplasts.

The amount of light is directly proportional to the rate of photosynthesis.

Sugar and Oxygen are the products of photosynthesis



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Investigating Photosynthesis



Media Gallery



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Investigating Photosynthesis

We've investigated photosynthesis!

This section summarizes the activities we performed. In each activity, you will find a brief description of the procedure, the data we collected, and the conclusions we made. We also took pictures and you'll find some in the activity page. (The complete set is thumbnailed in the *Media Gallery* section.)

So, click on the Activities listed below and learn what we have learned!

Activity 1: [Observing Chloroplasts](#)

Activity 2: [Light and Oxygen Production](#)

Activity 3: [Testing for Starch in Leaves](#)

Submit an investigation!

Did you perform an investigation not listed above? Send details to the address below and we will post it here.

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Observing Chloroplasts



Activity 1: Observing Chloroplasts

In this activity we observed chloroplasts under the microscope. We used the leaf of *hydrilla*, commonly known as *digman*. We used the whole leaf because the walls of its epidermal cells are so thin that the cell structures inside can be easily seen under the microscope.

Observation:

The chloroplasts we saw are round to oval in shape and are colored green.

Chloroplasts of the *hydrilla* leaf as seen under a microscope.



Click on the image to view the picture.
10.31 KB; 5 sec @ 28.8 kbps

Post your results here!

Did you use other plants for this activity?
How did the chloroplasts look like?

Type your observations in the box below and click **Send**.

Send

Reset

If you got pictures, send them to dultz@ismed.upd.edu.ph and we will add them to the *Media Gallery*.

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Testing for Starch



Activity 3: Testing for Starch in Leaves

This activity helped us prove that sugar stored as starch is produced during photosynthesis. We have also proven that sunlight is needed for photosynthesis.

We used a *mayana* leaf exposed to sunlight and another kept inside the room for three days.

Each leaf was placed between 2 filter papers and placed between 2 vinyl tiles. The tiles were struck several times so that leaf cells and chlorophyll are transferred to the filter paper.

Then, the filter paper for each leaf was soaked in *Chlorox* or *Zonrox* to remove the green chlorophyll, and then washed with water.

The filter paper (with leaf imprint) is then soaked in water. Then, we added about 10 drops of iodine to the filter paper.

The starch left on the filter paper gave a positive dark blue violet color.

Conclusions:

1. Starch is present in the leaf exposed to sunlight.
2. Starch was not present in the other leaf because it was kept in the dark (with no sunlight).
3. Leaves need sunlight in order to produce starch.

Questions and Comments

Do you have questions or comments on the procedure or materials we used? Type them in the box below and click *Send*.

Send

Reset

Post your results here!

Did you use other plants for this activity? What results did you get?

Send observations and photos to dultz@ismed.upd.edu.ph.

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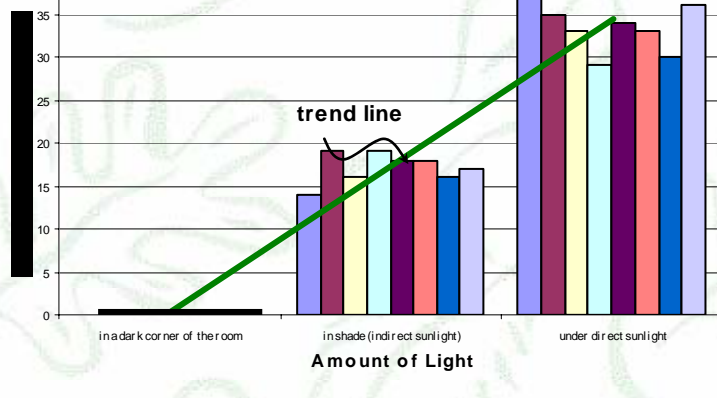
The amount of light is directly proportional to the rate of photosynthesis.

Light and Oxygen Production

Activity 2: Light and Rate of Photosynthesis

In this activity, we investigated how the amount of illumination affects the rate of photosynthesis in the *hydrilla* plant.

We used *hydrilla* in direct sunlight, under the shade, and in a dark corner of the room. We counted the number of bubbles produced per minute by the *hydrilla* in each of these locations. The data we collected are shown on the table below. The relationship between the amount of light and the number of bubbles produced are shown on the graph:



[Click to see video of bubble escaping from the *hydrilla* plant.](#)

Amount of light	No. of bubbles produced per minute							
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8
in a dark corner of the room	0	0	0	0	0	0	0	0
in shade (indirect sunlight)	14	19	16	19	18	18	16	17
under direct sunlight	38	35	33	29	34	33	30	36

Conclusions:

1. The number of bubbles (that is oxygen) released by the *hydrilla* is directly proportional to the amount of light to which it is exposed. [When the *hydrilla* is exposed to more light, more bubbles are released.]
2. The number of bubbles is directly proportional to the rate of photosynthesis. [The greater the number of bubbles released by the plant (representing O₂) the faster is the photosynthetic rate.]

Post your results here!

Do you want your results posted here? Send your tables, pictures and video clips to dultz@ismed.upd.edu.ph

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Media Gallery

We took these pictures and video clips when we investigated photosynthesis. To get a full view, just click on a thumbnail.

Please take note of the file size and estimated download time before you click.



Chloroplasts of *Hydrilla*
10.31 KB; 5 sec @ 28.8 kbps



***Hydrilla* in direct sunlight**
15.13 KB; 6 sec @ 28.8 kbps



***Hydrilla* under the shade**
10.96 KB, 5 sec @ 28.8 kbps



***Hydrilla* in a dark corner of the room**
7.897 KB; 4 sec @ 28.8 kbps



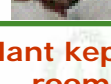
Bubbles of *Hydrilla* in direct sunlight
AVI Video clip; 196 KB



Bubbles of *Hydrilla* under the shade
AVI video clip; 61 KB



***Mayana* plant exposed to sunlight**
115.74 KB; 6 sec @ 28.8 kbps



***Mayana* plant kept inside the room**
10K; 4 sec @ 28.8 kbps



Test for starch in the *Mayana* leaf exposed to sunlight
3.489 KB ; 2 sec @ 28.8 kbps



Test for starch in the *Mayana* leaf kept inside the room
2.0 KB; 2 sec @ 28.8 kbps

Add your pictures and videos!

If you got pictures and video clips, send them to dultz@ismed.upd.edu.ph and we will post them here.

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We found the following sites interesting. You may want to them to know more about photosynthesis.



<http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookPS.html>

The webpage gives detailed information about the structure of chloroplast and the interaction occurring in them.

<http://www.ftexploring.com/photosyn/chloroplast.html>

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