

# ECOLOGY LAB

**Background: this is upon which you will base your purpose/problem of your experiment.**

1. Summarize article on a factor that influences plant growth. Some ideas: pH, amount of water, amount of sunlight, type of light, density, soil texture & porosity, type of nutrients in soil, amount of wind, type of irrigation, type of organisms in the soil, etc.
2. Cite the source: html website address, title of website, who it is authored by, date last updated
3. Some possible sources to start with:
  - a. <http://www.npr.org/>
  - b. <http://www.nationalgeographic.com/>
  - c. [http://www.all-science-fair-projects.com/science\\_fair\\_projects.php?s\\_terms=plants&type=0&s\\_difficulty=&hidden=1&s\\_category=](http://www.all-science-fair-projects.com/science_fair_projects.php?s_terms=plants&type=0&s_difficulty=&hidden=1&s_category=)

**Overall Purpose: based upon your background**

1. to devise a controlled experiment
2. to explore different variable(s) that influence the sustainability of an ecosystem

**Purpose: what are you investigating?**

**Materials:**

**Procedure:**

1. Keep in mind to create a controlled experiment
2. Keep in mind the larger the sample size, the better
3. Keep in mind the spacing and density within each set-up
4. Keep in mind that overwatering and poor drainage can inhibit growth
5. The more complex the experiment, the higher the grade. You can test multiple variables, as long as they are controlled.
6. Include a **labeled diagram** of your control and experimental set-up. Write the variable you are testing.

**Data Collection**

You will make observations on the first day you set up the experiment. Then you will make observations twice a week for the next 3-4 weeks. Below are the types of observations you can make:

pH of water	Carbon Dioxide levels
pH of soil	Surface area of leaves
Height of plant	Appearance of soil: color, texture, etc.
Appearance of plant: color, texture, etc.	Number of living organisms
Temperature	Behavior of living organisms in soil
Soil nutrients (will do this only at beginning and end)	Soil texture & porosity

**Data Analysis:**

1. Graph data
  - a. Remember to label your axis, title the graph, and write a legend
  - b. Interpret.
    1. Any trends in the data?
    2. How did the control compare to the expected?

**Conclusion:**

1. What type of ecosystem would your set-up be most similar to?
2. Answer the problem using the data from the experiment to support your answer.
3. What connections can you make between your eco-column and a natural ecosystem or community?
4. List any errors, how those errors could have affected your data, and how to reduce those error for next time.
5. Now that you have completed this experiment, what else would you test?

**BIOLOGY: ECOLOGY LAB  
GRADING SHEET**

**\*\*\*EACH member will write his/her own write-up. It is imperative that each group member pull his/her own weight!!!! Please list below how each member contributed to the group's overall success.\*\*\***

ITEM	POINTS POSSIBLE	POINTS EARNED
Purpose	2	
Materials	3	
Procedure	5	
Design Set-up	10	
Data	10	
Data Analysis	10	
Conclusion	10	
<b>Total Team Points</b>	<b>55</b>	

Name	Effort	Responsibility	Total
	/10		/50
	/10		/50
	/10		/50
	/10		/50
	/10		/50

Comments