Name:

Class:

Teacher:

Date Submitted:

**Title:** [Type here]

[Lab Report Exemplar](https://docs.google.com/document/d/1Kb_my9unDH_0WibvA4UXnZT2XUR4XHwqqCRveUmj_9M/edit?usp=sharing)

[Lab Report Scoring Checklist](https://docs.google.com/document/d/1InhLq5rDH8Vcb6wZECfAXHb7VSlLTPhGVDOM3J730KM/edit?usp=sharing)

[Video of Leaf Disk Lab](https://www.youtube.com/watch?v=ZnY9_wMZZWI)

**I. Introduction**

*[Background information typed here]*

*Include:*

*a. formula for the chemical reaction in the experiment, identify the inputs and where they came from as well as outputs and where they go after produced.*

*b. how the process is used in nature, by what organisms, and why it is important*

**Purpose**

*[type here]*

**Problem or testable question**

*[type here]*

**Measurable hypothesis**

*[type here]*

**II. Materials and Methods**

**Experimental Design**

*Independent Variable and how it will be changed in your investigation: [type here]*

*Dependent Variable and how it will be measured in your investigation: [type here]*

*Constants: [type here]*

*Control Group: [type here]*

**Materials**

*[Remove materials NOT used by your research group and add materials if needed]*

Hole punch, straws, 60 mL syringe, various plant leaves, 250 mL beaker, plastic cups, soapy water & bicarbonate solution, graduated cylinder, hot water bath, ice water bath, lamp, ruler, meter stick, thermometers.

**Procedure:** *[****adjust procedure*** *to match experimental design]*

Procedure

1. Obtain approximately 20mL of soapy water & bicarbonate solution and place in a beaker using a graduated cylinder.
2. Make 10 leaf disks by using a straw or hole punch on the spinach leaves. See figure at top of page.
3. Remove the plunger from the syringe and place 10 leaf disks inside. Replace plunger. Push down until almost fully in place (leave some air).
4. Withdraw approximately 15 mL of soapy water from the beaker using the syringe. Tilt up to remove air from the syringe. The syringe may need to be tapped to loosen the disks and air bubbles.
5. Mix the disks with the soapy water inside the syringe.
6. Place finger on end of syringe while pulling back on plunger creating a vacuum and hold for a count of ten seconds.
7. Release your finger and plunger and some of the disks should begin to sink. Tap the side of the tube or shake gently to break any bubbles on the edge of the disks. Repeat step 6 until all the disks sink.
8. Stand the syringe on the plunger.
9. \*Place cup near lamp and make observations in data table in one-minute intervals until all disks rise.

\*Adjustments to procedure [revise procedure above]

**Independent Variable: Light intensity**

* Place syringe with disks *[include the different distances used by the class]* cm from light. Count and record the total number of disks that have risen after each minute.
* Repeat procedure and place syringe with disks.
* Count and record the number of disks that rise each minute.

**III. Results**

**Table 1:**

*[insert data table here]*

*[Insert graph here* [*tutorial*](https://drive.google.com/open?id=0BzPzKVQS4kWcNnpRTmQxdnJic3M)*]*

**Figure 1:** *[caption goes here explaining what is in the graph above]*

**IV. Discussion**

*[type here]*

**V. Validity**

*[type here]*

*Include:*

*a. Sources of error AND how each affected the data*

b. *Ways to improve the procedure(s) used in this experiment for future experiments*

c. *What future investigations can be done using this data you produced and why would it be important to conduct these expeirments?*

**VI. References Cited**

*[Remove references NOT used, add at least one additional credible source using APA format;* [*cite this for me*](http://www.citethisforme.com/) *or* [*Noodletools*](https://my.noodletools.com/logon/signin) *]*

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