

Name: _____ Period: _____

Lab 10: DIY Measuring the Rate of Photosynthesis

Part A:

Discuss with your lab group to answer the following questions:

1. Identify your hypothesis:

(Example: if there is 3% (3g) CO₂ instead of only 1% (1g), then the leaf discs will rise faster because...)

If: _____

Then: _____

Because: _____

2. Identify your variables:

A. Independent Variable: _____

(This is what you have chosen to change!)

B. Dependent Variable: _____

(This should be the same as our last experiment!)

C. Controlled Variables (list AT LEAST five): _____

3. Materials:

THOROUGHLY list and describe ALL items that you will need for your experiment

4. Procedure:

In the space on the back describe the steps you will do to work through your experiments. Your steps should include the following:

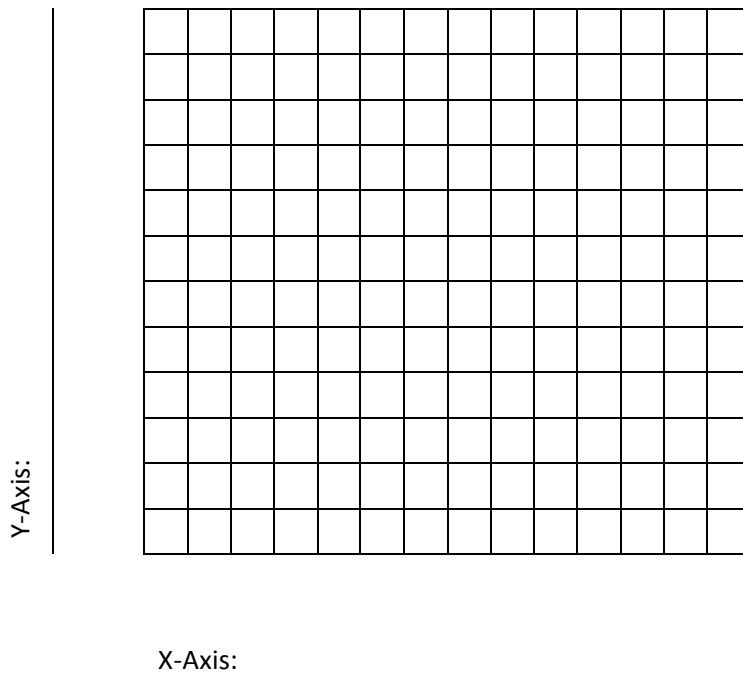
- How you will label your cups
- What you will do to each cup
- That you will evacuate the air from the leaves (you don't have to describe the whole song and dance, but do list that you have to do this)
- How you will measure the leaves rising
- You MUST collect data for AT LEAST 10 minutes!
- Use the original lab instructions to help you complete this part!

Part B:

Work with your lab group to collect your data as describe in your procedures.

1. In the space below, create a data table that will efficiently and accurately allow you to collect your data:

2. On the graph below, illustrate your data. Be sure to provide titles for the x and y-axes. In addition, create a graph key for the different lines in your experiment. Your graph setup should be similar to the graph in Lab 9!



3. In one sentence, describe how your independent variable affects the rate of photosynthesis. Consider the following: was there any observable effect? Did you identify an optimal condition for photosynthesis? Is there any condition that prohibits photosynthesis?

4. Given your data and results from this experiment, briefly describe (in 3-5 sentences) a new experiment that you could do that would give us further information about the optimal (best) conditions for photosynthesis in this particular plant.
5. Think about how your experiment could provide information for the real world. How could people who grow plants and rely on photosynthesis for a living apply this information? Think big picture! (Note: even if you collected null or "lack of" data [zeros everywhere or wonky data], you can still consider how this experiment could provide useful information!) Do some research if you need to! (This answer should be one really FULL paragraph!)

Part A				
Score:	1	2	3	4
Description:	Some or no pre-lab questions are incomplete and/or inaccurate; procedure is incomplete and/or does not attempt to thoroughly describe an experiment	Pre-lab items are somewhat accurate and/or are not complete; procedure is only partially complete and/or does not thoroughly describe an experiment.	Pre-lab items are thorough and accurate; attempt to make procedure thorough, some improvement needed.	Pre-lab items are thorough and accurate; procedure is precise and very thorough, little to no changes needed.

Part B				
Score:	1	2	3	4
Description:	Data table is missing or is not reflective of the experiment; graph is missing or is not reflect of collected data; analysis questions not answered or there is not an attempt to be thorough and thoughtful	Data table is somewhat accurate, is messy and needs improvement; graph attempts to reflect data but is messy or is setup inaccurately; analysis questions are attempted but are not well-thought and may or may not be complete.	Data table is somewhat neat and accurate; graph is neat, accurate, and reflects data; analysis questions are somewhat thorough and complete.	Data table is neat and accurate; graph is neat, accurate, and reflects data; analysis questions are thorough, complete, and thoughtful.