

## Lab Follow-up: Leaf Disk Flotation

To evaluate our findings, to the following:

1. Draw a well labeled picture or set of pictures (like a comic) illustrating the procedure that your team did: What is the effect of (a) Light intensity, (b) Color of Light, or (c) Species Type on the rate of photosynthesis in various plants? Submit your drawing with this assignment.
2. Regarding the independent variable of light intensity:
  - a. Given the hypothesis *that photons of lights are needed to excite chlorophyll molecules but the number of chlorophyll molecules in any plant are a finite number*, PREDICT the effect of increasing light intensity on the rate of photosynthesis. Write your prediction here:
  - b. Construct a graph in Excel using our data illustrating our results. Paste the graph here.
  - c. Give evidence from the data (table and graph) that supports or refutes your hypothesis-prediction. (No more than 3 sentences.)
3. Regarding the independent variable of species type:
  - a. Given the working hypothesis & prediction: *Since all plants contain similar chloroplasts with similar types of pigments, then all plants should perform photosynthesis at the same rate given the same conditions of light intensity, temperature, and leaf disk size.*
  - b. Construct a graph in Excel using our data illustrating our results. Paste the graph here.
  - c. Give evidence from the data (table and graph) that supports or refutes the hypothesis-prediction in part a. (No more than 3 sentences.)
4. Regarding the independent variable of wavelength:
  - a. Using the absorption spectrum from the previous lab (on Leaf Pigments), make a hypothesis and prediction about which colors (wavelengths) of light (red, yellow, green, blue, teal, pink) should produce the maximum and minimum rates of photosynthesis.
  - b. Construct a graph in Excel using our data illustrating our results. Paste the graph here.
  - c. Look at the results for these colors of light. Evaluate whether or not they support your hypothesis-prediction. Use the information on the (1) light intensity (PAR and/or LUX values) and (2) to help explain the results for these colors.
    - 1) Blue
    - 2) Red
    - 3) Green
    - 4) Yellow
5. Identify two things about your team's procedure that we did not or could not hold constant that may have made our results unreliable.
6. Identify the control trial of the entire class experiment. Why is our control a negative control?