Spinach Lab

Name: _____ Period: _____

Pre-Lab:

1. What is the chemical reaction formula for photosynthesis?
2. What is the primary pigment responsible for initiating the light reactions of photosynthesis?
3. Where in the chloroplast do the light dependent reactions happen?
4. What reactant is used during the light dependent reactions? What specifically happens to it?
5. What is the product produced at the end of the light dependent reactions?
6. How would this product get to the air space in the leaf?
7. What are the independent and dependent variables in this experiment?

Data:

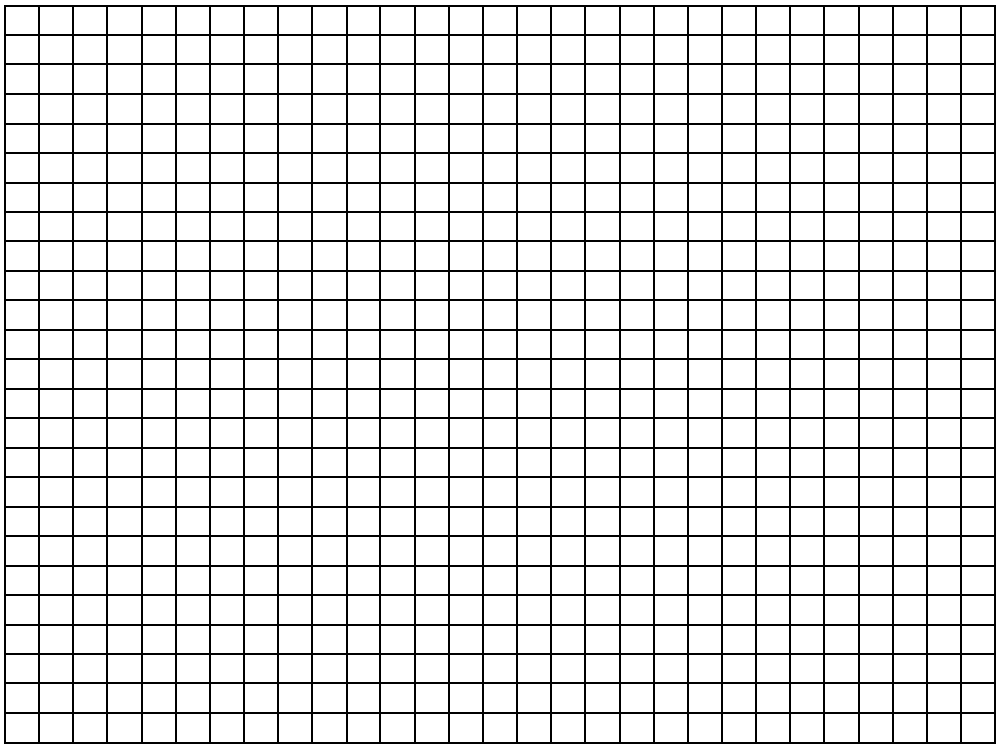
	# of Disks Floating - GROUP	
Time (min)	Light Beaker	Dark Beaker
1	0	0
2		
3		
4		
5		
6		
7		
8		
9		
10		

# of Disks Floating – CLASS	
Light Beaker	Dark Beaker

Exact Time all 10 Floated		

Analysis:

1. Create a graph to compare the rates at which the leaf discs floated. Use your group's data for both the light and dark beakers:



2. Why did the leaves float?

3. Did any of the leaf disks in the dark beaker float? Why might that have happened?

4. Determine the rate of photosynthesis for both the light and dark reactions, using the formula below. *Note: be sure to use the **exact time** in your calculations. For example, if it took 8 minutes, 45 seconds for all 10 discs to reach the surface, you would divide by 8.75 minutes. (show your work)*

$$\frac{\text{\# of discs floating}}{\text{total time (min)}} = \text{discs/min}$$

5. Based on your data, what can you conclude about how your independent variable affects the rate of photosynthesis?

6. What are possible sources of unavoidable error in your experiment? Explain why they may have been present.