Name:	
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The Effects of Carbon Dioxide and Light on Photosynthesis: Virtual Lab

Procedure:

- 1. Go to this website: http://www.newpathlearning.com/MML/PHOTOSYNTHESIS/files/BubbleLab.swf
- 2. View the parts of the simulation. Play with the buttons to see how they work.
- 3. Click the button that says "Prepare Plant"
- 4. Set the CO₂ Concentration to 0 ppm (parts per million).
- 5. Set the Light Intensity to 5000 lux.
- 6. Choose a **time limit.** How many minutes do you want to record? This must stay CONSTANT throughout your experiment. (Record as one of your constants in question #3)
- 7. Click on the "Start" button and count how many bubbles are produced in your time limit.
- 8. Click the **"Stop" button** to stop the timer. Record your data.
- 9. Repeat steps 4-8 for each of the scenarios. Use the tables as a guide for what factors to change. Fill in the data table below.

		Light Intensity (lux)		
		5000	15000	25000
ration	0			
oncentrat (ppm)	300			
ŭ	600			
CO ₂	1200			

FACTOR #1:

How does CARBON DIOXIDE (CO₂) LEVEL affect the rate of photosynthesis?

- 1. What is the independent variable?_____
- 2. What is the dependent variable?_____
- 3. What are the constants?______
- 4. What is the optimal CO₂ concentration?_____

FACTOR #2:

How does LIGHT INTENSITY affect the rate of photosynthesis?

1.	What is the independent variable?
2	
2.	What is the dependent variable?
3.	What are the constants?
4	What is the optimal light intensity level?
••	

Name:	Period: Date:
Answe	r the following questions for BACKGROUND information to use in your Conclusion:
1.	Where does PHOTOSYNTHESIS happen in the cell?
2.	What color is a chloroplast?
3.	What is inside the bubbles that are being released?
4.	Fill in the diagram below to explain the process of photosynthesis:
	→
	→ 7 ₹
	(2 reactants) (2 products)
	→

- (Catalyst)
- 5. Write the equation for photosynthesis.

Conclusion—Summarize your findings

Directions: Using your data and your answers from the questions above, write a conclusion paragraph to summarize your results. HOW did the factors you tested affect photosynthesis? What were the OPTIMAL factors? What happened when you used OPTIMAL factors? WHY do you think that happened? Was there any bias? (Did you have any previous ideas influencing your choices?) *Cite evidence! Use specific data to support your claims.*

