Photosynthesis Lab Name: _____ Period: _____

Introduction:

The purpose of this experiment is to determine what colors of the light spectrum are used in photosynthesis as evidenced by plant growth. Photosynthesis is the process in which plants use light energy, water, and carbon dioxide to produce food (Glucose). Plants use the food for growth and for energy to carry out other life processes. Sunlight is a natural energy source for photosynthesis. White light from the sun is a mixture of all colors of the light spectrum: red, orange, yellow, green, blue, and violet. Light can be either absorbed or reflected by substances called pigments in plant cells. Most plants are green because the pigment chlorophyll reflects green and yellow light and absorbs the other colors of the spectrum. In this activity, you will perform an experiment to investigate what colors of the light spectrum cause the most plant growth. You will calculate the plant growth by measuring the height of each plant under different colors of light.

Procedure:

1) Go access the lab, go to Google Weebly → Labs → Photosynthesis → Virtual Lab
2) Click on the TV to watch the video. Write five facts below in sentence form.
3) Write a question to be answered in this experiment (Hint: review the purpose of the experiment).
4) Look at the different colors of light that will be tested in this experiment. Write a hypothesis (what do you think will be the answer to your question?)
5) Using the virtual lab, test each species of plant with each color of light. Record data, calculate the average, analyze results, and answer conclusion questions.

Video Facts: (click on the TV once you get to site)

1	
2	
3	
4	
5	

Question:

Hypothesis:

Record Data:

Light Color	Plant	Spinach Height (cm)	Lettuce (cm)	Raddish Height (cm)
Red	1			
	2			
	3			
	Average Height			
Orange	1			
	2			
	3			
	Average Height			
Green	1			
	2			
	3			
	Average Height			
Blue	1			
	2			
	3			
	Average Height			
Violet	1			
	2			
	3			
	Average Height			

Questions:

1. Which variables did you control during the experiment

2. Which variables did you change to compare growth of the plants?

3. What colors in white light are absorbed by chlorophyll?

4. What color of light causes the most plant growth? Did the results support or reject your hypothesis?

5. Given that white light contains all colors of the spectrum, what growth results would you expect under white light?

6. If a plant performs 5 photosynthesis reactions, how many glucose molecules will it have inside its body?

7. Which plant will be taller? One that performs 5 or 10 photosynthesis reactions?