

Points: \_\_\_\_\_ / 44

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Date: \_\_\_\_\_

## Photosynthesis Factory Project

**Purpose:** You will design a hypothetical factory, which is able to perform artificial photosynthesis. You will need to show a suitable room/location for each reaction of photosynthesis, all ingredients moving into the factory at the appropriate times, the transport of those ingredients through your factory, the removal of all waste products at the appropriate times, and the shipping of your final product of photosynthesis. Rooms, processes, and ingredients must be numbered according to the numbers in the checklist below, and a description of what is happening at each numbered area written on a separate sheet of paper.

The following checklist will guide you in the process of designing your factory:

### PHOTOSYNTHESIS FACTORY CHECKLIST

1. Are there spaces for both reactions of photosynthesis?
2. Do you have a source/supply of light?
3. Do you have a source/supply of water?
4. How are you capturing the light energy?
5. Where does this captured light energy go?
6. What is your factory splitting water apart into?
7. Where do the two products of the water being split go? (Hint: It needs to be split into two pathways.)
8. Do you have a source/supply of carbon dioxide?
9. Are you showing the combination of the reactants into glucose?
10. What happens to glucose after being formed?

## PHOTOSYNTHESIS FACTORY RUBRIC

	<b>4 Points</b>	<b>3 Points</b>	<b>2 Points</b>	<b>1 Point</b>	<b>0 Points</b>
	(Present, accurately represented, numbered, described on separate sheet of paper)	(1 component missing)	(2 components missing)	(3 components missing)	(Totally missing)
1. Rooms for both reactions					
2. Light source					
3. Water source					
4. Light captured					
5. Movement of captured light					
6. Water splitting					
7. Movement of water components					
8. CO <sub>2</sub> source					
9. Formation of glucose					
10. Movement of glucose					
Appearance of work (neat, organized, and colorful [use a specific color when it is significant to the structure's function])					

Name: \_\_\_\_\_ Class Period: \_\_\_\_\_  
 \_\_\_\_\_

Total Points: \_\_\_\_\_