Name _____ Class _____ Date _____

Photosynthesis and Cellular Respiration

Investigation:

Part 1

1. Why has the pond been stocked with mosquitofish?

2. What is the problem that needs to be solved?

3. Record the results of your tests in the table:

Test	Result	Hospitable to Goldfish?	Hospitable to Mosquitofish?
pH			
Temperature			
Dissolved Oxygen			
Ammonia			

4. Based on your water testing, what water quality factors could be causing the goldfish deaths? Explain.

Part 2

5. Record the results of the experiment in the table:

Experimental Conditions	DO (mg/L) Time = 0 hours	DO (mg/L) Time = 3 hours	Change in DO (mg/L)
Elodea + Light	8.9		
Elodea + Dark	8.9		
Mosquitofish + Light	8.9		
Mosquitofish + Dark	8.9		
Elodea + Mosquitofish + Light	8.9		
Elodea + Mosquitofish + Dark	8.9		

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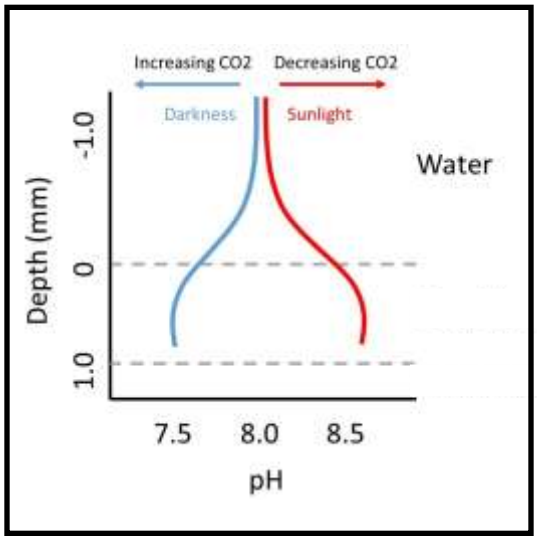
Part 3

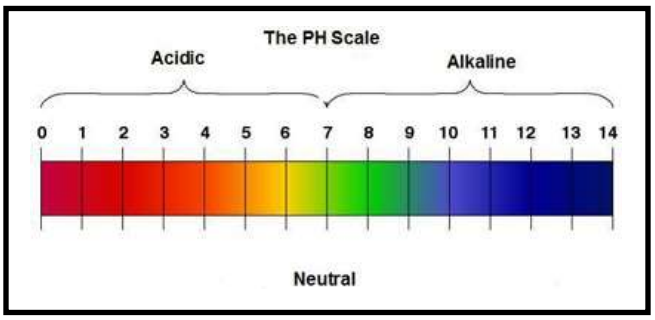
6. Complete the following table. Determine the number of mosquitofish that the pond can support while maintaining a positive value for free oxygen.

Goldfish	Mosquitofish	Free Oxygen (mL/hr)
3		
2		
1		
0		

Analyze and Conclude

7. **Make Inferences** How do plants and fish impact the pH of the lake? Use the provided graph and pH scale as a reference.





8. **Relate Cause and Effect** How do fish increase lake carbon dioxide levels?

9. **Systems Thinking** Draw a diagram that shows the cycle between the fish and the elodea (water plant).