

# Example of water quality and fish population essay

[Sociology](#), [Population](#)



## **Question 1**

It is observable that as the level of dissolved oxygen increases in the water, the population of fish increases. However, at a certain concentration of oxygen, 14ppm, the number of fish decreases. This could be due to the elimination of some species due to competition from aquatic plants and other animals. A continued increase in oxygen concentration sees the fish population rise; this could be attributed to the increased reproduction of the fish species due to availability of adequate food and oxygen.

## **Question 2**

The amount of Dissolved oxygen in the water needed for survival varies from species to species. Some species require more oxygen than others (Addy & Green, 1997). When there is low concentration of dissolved oxygen in the water, the life of fish is at risk. Though fish can survive with a concentration of as low as 3ppm, lower concentration will risk their lives. Oxygen concentration in the water supports all aquatic life including plants and other animals. This level is affected by various such as temperature, water flow rate and the level of pollutants.

## **Question 3**

Does the concentration of dissolved oxygen in a water body affect its fish population?

The experiment will be trying to justify and validate the above hypothesis which means that; as the dissolved oxygen concentration in the water increases, the fish population in the water body increases.

## Question 4

Take three tanks labeled A, B, and C. Fill them half-full with water to be your water body. Let tank A be your control experiment. Ensure there is a fixed oxygen concentration throughout the experiment, say 5ppm. In take B, let the Dissolved Oxygen concentration be 3ppm and tank C have a DO concentration of 9ppm. Put the same number of fish in all tanks at the beginning of the experiment. Put all other factors constant till the end f the experiment. This will ensure that there are no other possible causes of fish population and the control experiment will establish if indeed the fluctuation in fish population was as a result of oxygen concentration.

**The dependent variable is the fish population while the dissolved oxygen concentration is the independent variable for the experiment.**

## Question 5

For the results found, the appropriate graph will be a line graph that is plotted with number of fish (Y-axis) against dissolved oxygen (ppm) on the X-axis. This is because using this graph we can easily see the relation between the two variables.

## Question 6

The graph starts with an increasing gradient to the point where oxygen concentration is 12ppm where the graph declines slightly at concentration of 14 ppm. The graph then takes a positive gradient to the end.

## Question 7

### Question 8

If the experiments I conduct produce the same results as the ones presented in the table, I would accept my hypothesis. This is because, the main reason for carrying out the experiment was to validate and justify the hypothesis. If the result turns out as predicted by the hypothesis, that would mean that the hypothesis holds.

## References

Addy, K., & Green, L. (1997). Dissolved Oxygen and Temperature. Natural Resources Facts, (96-3). Retrieved from [http://www. uri.](http://www.uri.edu/ce/wq/ww/Publications/DO-Temp.pdf)

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