CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
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Project Number
J0618

Project Title
I Found My Oxygen

Abstract

Objectives/Goals
The purpose of the experiment was to test how changing the temperature of water affected the concentration of dissolved oxygen in the water, and also see how global warming affected ocean life. It was expected that water with more heat would hold less oxygen due to the greater amount of heat energy causing the molecules to move faster and pushing out oxygen.

Methods/Materials
In the experiment, five different water temperature groups ranging from 5˚C-80˚C were tested for their concentrations of dissolved oxygen. Each group had ten water samples of which five were aerated and five were not. Manganous Sulphate Solution, Alkali-Azide Reagent, Sulphuric Acid Solution, and starch indicator were mixed into the water in sequence. Titration was then used to find the dissolved oxygen concentration of the water.

Results
The average concentration of dissolved oxygen for the group with the coldest water was 4.89mg/L without aeration and 9.15mg/L with aeration while the group with the warmest water had an average dissolved oxygen concentration of 0.87mg/L without aeration and 1.65mg/L with aeration.

Conclusions/Discussion
The results of the experiment supported the hypothesis, but also lead to thoughts on environmental issues. Global warming has been a major problem nowadays and has also caused oceans to become warmer. The results of this experiment displayed another way that global warming has negatively affected the world. Due to the oceans now being warmer, there is less oxygen for ocean life. In conclusion, as the temperature of water increases, the dissolved oxygen concentration decreases.

Summary Statement
This project is about how water temperature affects the concentration of dissolved oxygen in the water.

Help Received
Mother bought materials; Mother took pictures; Experiment was performed under the supervision of Mother