CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)
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Project Number
35819

Project Title
Hearts and Magnets

Abstract

Objectives/Goals
The purpose of this experiment is to find out if magnets affect the heart rate of living organisms. If they do, can they be used in medical treatments on the human heart? It is to find out if organisms react to the magnetic fields and why they react the way they do.

Methods/Materials
The hypothesis of this experiment is that if a large, small, and no neodymium magnet is placed next to a Daphnia Magna, then the heart rate of the Daphnia Magna with the large magnet will increase the most. In this experiment, Daphnia Magna were put into three groups. Neodymium earth magnets were used. Group A had no magnet, Group B had a small magnet, and Group C had a large magnet. For each group, a Daphnia Magna was placed under the microscope and a magnet was placed half an inch away from it. Then, the heart rate was counted for one minute. The process was repeated ten times.

Results
The results for Group A were: 197, 190, 180, 193, 190, 180, 99, 174, 146, and 174. The results for Group B were: 187, 135, 163, 178, 165, 167, 162, 173, 183, and 173. The results for Group C were 176, 168, 160, 170, 170, 168, 178, 183, 172, and 185. The average for Group A was 168.6. The average for Group B was 172.3. The average for Group C was 173. Group C had the fastest average heart rate, however in 6/10 individual tests, Group A had the fastest heart rate. One of the tests was extremely low which could have caused it to have the lowest average.

Conclusions/Discussion
The hypothesis was proven incorrect in this experiment. When looking at the averages, it is correct, but when looking at the individual tests, Group C had the fastest heart rate in 6/10 tests, therefore, proving the hypothesis incorrect.

Summary Statement
The experiment Hearts and Magnets is about the affects of magnets on the heart rate of daphnia magna.

Help Received
Miss Analiese White helped edit the research portion of the report. Miss Michelle Mullen edited the abstract, conclusion, and graphs.