CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
J1719

Project Title
Heart Stopping Red Bull

Abstract

Objectives/Goals
This experiment was done to find out how Red Bull effects the heart rate of Daphnia. I found out that Red Bull increases the heart rate of Daphnia. As I increased the concentration of Red Bull that the Daphnia were exposed to, their heart rate increased.

Methods/Materials
I had four test tubes that I filled using different percentage solutions of red bull. The first test tube had all distilled water. [0% solution] The second test tube had a mixture of 10 ml of Red Bull and 90 ml of distilled water [10% solution]. The third test tube had a mixture of 50 ml of Red Bull and 50 ml of distilled water [50% solution]. The fourth test tube had all Red Bull [100% solution]. I placed the Daphnia in the first test tube and let them sit for 15 minutes. I then placed the Daphnia one at a time on a microscopic slide. I used a compound microscope to look at the Daphnia and count the heartbeats for 60 seconds. I had a helper tell me when the 60 seconds were up. I recorded my results on a chart. I repeated the process for the rest of the test tubes with the different concentrations of Red Bull.

Results
Average Daphnia heart rate per minute in Mountain Spring water was 169.1.
Average Daphnia heart rate per minute in 0.10 % solution of Red Bull was 215.4.
Average Daphnia heart rate per minute in 0.50 % solution of Red Bull was 339.3.
Average Daphnia heart rate per minute in 1.0 % solution of Red Bull was 289.3.

Conclusions/Discussion
The data I collected showed that Red Bull sped up the heart rates of the Daphnia. The average heat rate of the Daphnia went from 169.1 per minute in Mountain Spring water to 215.4 per minute in the 0.1 solution to 339.3 per minutes in the 0.5 solution. The average heart rates in the 1.0 solution decreased; but I think that happened because the Daphnia were dying. Based upon my findings I cannot think of there being any alternative explanations for my results.

Summary Statement
My project tested the effect for Red Bull on the heart rates of Daphnia.

Help Received
My Tutor used a timer to let me know when the 60 seconds was up. My Father and Mother helped set up the columns and tables to record and present the data.