



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Maria A. Linton	Project Number J2419
Project Title What Concentration of Sugar Is Most Preferred by Hummingbirds?	
Abstract Objectives/Goals The objective is to learn what concentration of sugar is most preferred by hummingbirds. Methods/Materials Concentrations of 0%, 25%, 35%, 45%, 55%, and 65% were made with white granulated sugar and warm water. A graduated cylinder and postal scale were used to make precise measurements. Modified and graduated feeders were used to contain the artificial nectar, and were tied to the fence with wire for 7 days. The feeders were checked every 12 hours and the cumulative milliliters consumed were recorded. For the last experiment, concentrations of 0%, 50%, 55%, 60%, and 65% were made to more precisely find which concentrations hummingbirds are most attracted to. Results It was observed that progressively with each experiment the hummingbirds became more accustomed to the feeders and consumed more nectar at a faster rate. Even in the second experiment, when the feeders were randomized, the hummingbirds still seemed to find their favorite once more, so they are not dependent on the location, rather the concentration. Hummingbirds also seemed to be more attracted in the day, and not so much at night. By using the slope of the line to measure the preference of the concentrations of nectar, (more nectar consumed over shorter period of time), data from all of the experiments demonstrates that 55% had the highest slope. Conclusions/Discussion In conclusion, the 55% sugar solution was most preferred by hummingbirds. This went against the original hypothesis, which stated that 65% would be preferred most, as it has the most sugar, leading to more calorie consumption needed by the hummingbird to fuel its high metabolism. Hummingbirds prefer not too much sugar in their nectar, but enough to satisfy their caloric needs. Overall, 55% seemed to attract the hummingbirds from the start.	
Summary Statement This project was done to determine the concentration of sugar that is most preferred by hummingbirds.	
Help Received My mom helped me get supplies, and my dad helped me edit and understand data.	