



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Jessica J. Wu Woods	Project Number J2020
Project Title Which Sugar(s) Do Hummingbirds Prefer?	
Abstract Objectives/Goals Hummingbirds will prefer sucrose more than other sugars because scientific research has shown that flowers visited by hummingbirds mainly have sucrose in their nectar. My objective is to test this hypothesis by feeding different sugars to hummingbirds in backyard feeders. Methods/Materials A. Make 30% (w/v) sugar solutions (of fructose, glucose, maltose, mannose, sucrose). B. Prepare two feeders from 10 ml plastic hypodermic syringes with millimeter markings. C. Fill each syringe with 10 ml of different sugar solutions. D. Hang up two syringe feeders on wire holders in our backyard gazebo. E. Measure and record the amounts (in ml) of sugar solution consumed in each feeder after 24 hours. F. To test for feeder position preference, eight trials of the sucrose solution (vs sucrose solution) were tested at two feeder positions. Position one is closer to the garden, position two is closer to the house. G. To test for sugar preference, at least three trials of each sugar solution (vs sucrose solution) were measured at alternating feeder positions. Results At least three hummingbirds (two Anna's and one Allen) were observed to visit the experimental feeders everyday. My data showed that hummingbirds prefer to feed on sucrose, followed by fructose and glucose. But the hummingbirds really disliked maltose and mannose, as they did not drink these solutions at all. Conclusions/Discussion My experimental results support my hypothesis, that hummingbirds prefer the sucrose sugar solution. From my literature research, the sugars found in almost all nectars from flowers visited by hummingbirds in the wild are mainly sucrose, with some fructose and glucose. My data validates the idea that hummingbirds prefer certain flowers because of the high sucrose content in the nectar. Maltose and mannose sugars are not present in the flower nectars that hummingbirds consume. Based on my experimental data, the best artificial nectar for feeding hummingbirds is to use a mixture of sucrose and fructose sugar solutions.	
Summary Statement Testing the sugar preference of hummingbirds.	
Help Received My Father provided the various sugars and editing for my report.	