



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Mike D. Feehan	Project Number S1709
Project Title The Effect of High-Fructose Corn Syrup in Comparison to Sucrose and Water on the Weight Gain of Mice	
Objectives/Goals My goal of this experiment to address the obesity dilemma in America and its relation to the artificial sugar HFCS-55. I wanted to test if 30 mice (15 male and 15 female) would gain more weight when presented a 20% HFCS-55 solution, 20% sucrose solution, or merely water. (along with their normal food for a period of 30 days)	
Abstract Methods/Materials I bought 30 mice (15 of each sex) put 5 mice of each sex in their separate container which has bedding and their designated solution (HFCS-20%, Sucrose-20% and water). I change the food and solutions regularly and weight them every 2 days for a period of 1 month on a gram scale. 15 male and 15 female mice; 6 big containers & lids; 6 8oz water bottles with hooks; mice food and 6 bowls; wood shavings for bedding; 6 boxes for their "houses"; 1 gram scale; cup to hold mice as they are being weighed; 2 pairs of yellow latex gloves; duct tape; scissors; electric drill and bit; 5 colors of nail polish; black hair-dye; permanent sharpies; pen/ pencil and composition book; 1 gallon of high fructose corn syrup; table sugar; plastic table cloth; paper towels; water, ml dropper, and funnel; measuring utensils; calculator; mixing spoon; wire mesh for top of containers; computer and printer.	
Results The results were that the total percent weight gained by all of the mice was 40% gained by the HFCS mice, 28% gained by the water mice, and 31% gained by the sucrose mice. The total average weight gain for the mice was 20.2 g gained by the HFCS mice, 22.4 g gained by the water mice, and 28.2 g gained by the HFCS mice. The only substance, out of the three, to reach 20 g gained for each individual mouse was HFCS with 3 mice gaining above that amount. Finally, the total weight gained for each solution group was 101 g gained by all the water mice, 112 g gained by all the sucrose mice, and 144 g gained by the HFCS mice.	
Conclusions/Discussion The difference in total weight gain between sucrose and water was only 11g whereas the difference between sucrose and HFCS is 32g which almost triples that of water and sucrose. This shows that drinking sucrose is extremely similar to drinking water, whereas drinking HFCS in relation to water which was a 43g difference is very opposite and will lead to obesity. I have achieved the results that I set out to prove that high-fructose corn syrup leads to obesity in mice significantly more than sucrose and water. United States has a big problem with obesity and one of the culprits is high fructose corn syrup. It found in an insanely large amount of food products due to the fact that it is cheap to manufacture and has a long	
Summary Statement I tested if High Fructose Corn Syrup does, indeed, cause more weight gain on mice than sucrose and water.	
Help Received My Mother helped me weigh the mice and decorate the backboard.	