



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Katrina A. Lindsay	Project Number S1911
Project Title Can You Fool a Fruit Fly?	
Objectives/Goals I tested to see if fruit flies would be more attracted to a real banana or a synthetic banana ester.	
Abstract	
Methods/Materials Material List: 2 vials of flightless fruit flies, 1 large beaker, 1 display case, 1 large test tube, 1 glass ball, water, 1 hot plate, 1 thermometer, 30 drops isoamyl alcohol, 20 drops acetic acid, 1 drop concentrated sulfuric acid, 1 pipette, 1 banana, 2 pieces of filter paper, lined paper. Procedure: Order fruit flies from www.carolina.com , get display box for experiment testing and line the bottom with lined paper, obtain a large test tube and drop a glass ball in it, fill a large beaker approximately 1/2 way with water and place a thermometer in it, heat the beaker with water on a hot plate until it reaches 70-80 degrees, combine 30 drops isoamyl alcohol with 20 drops of acetic acid in the test tube, after slightly mixing the two liquids, add one drop of concentrated sulfuric acid (18 Molar), place the test tube in the heated water and leave in for about 10 minutes, using a pipette, place some of the liquid ester onto filter paper, put half of a banana, mashed, onto a separate piece of filter paper, place the two pieces of filter paper on separate sides of the display case, gently shake the flies into the middle of the case, directly in between the ester and the fruit, note results.	
Results My hypothesis was proved completely wrong when the flies went directly to the banana. If anything, they in fact avoided the ester, and stayed as far away from its side of the case as possible. I was rather surprised, because to me, it smelled exactly like a banana. I suppose that in hindsight, it probably happened because the flies could see the banana, or perhaps the smell of the ester was overpowering them.	
Conclusions/Discussion My experiment did not go as planned. While I initially believed that the flies would be attracted to the ester and not the banana, what happened was in fact the reverse. The flies avoided the ester, and climbed all over the banana. To further my experiment, I could have chemically made other scents to see if the flies were more attracted to them than the banana scent; or I could have seen if the concentration of the ester mattered in the results. Perhaps the flies would have been more attracted to it if the scent was more or less concentrated. In conclusion, I could not fool a fruit fly.	
Summary Statement Using fruit flies, I tested to see if they were more attracted to a banana or a synthetic banana ester.	
Help Received Mother helped me obtain display case and handle flies, friend helped me put the flies in the case.	