



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Lynn H. Chai	Project Number J1903
Project Title How Does Incubation Temperature Affect the Sex Ratio of Fruit Flies?	
Objectives/Goals My objective for this project was to learn how temperature would affect the sex ratio of the fruit flies. I hypothesized that the female fruit flies would outsurvive the male fruit flies because they have to go through much more harsh labor than the males. They have to breed 500 eggs at a time and through this harsh labor, they have a greater chance of adapting to the sudden change of temperature more quickly than the males. Abstract I ordered the fruit flies and I borrowed the rest of the materials from my seventh grade biology teacher. Materials used: Incubator, five vials of fruit flies, four extra empty vials, one fly anesthizer(flynap), one magnifying glass, one tweezer, one cone shaped cup with a small hole at the sharp end, five pieces of white paper, and one thermometer. I took a new vial of fruit flies and put them all to sleep using the fly nap. I then seperated the fruit flies according to their gender into two piles and took ten of each sex. I took the food fly food and placed a spoonful of fruit fly food at the bottom of a empty vial. I then took those twenty flies and placed them in the vial and waited until they woke up. After waking up, I placed the vial into the incubator at the first temperature, which was 23.9 degrees celsius. I recorded the data and I reapeated the steps for the other temperatures. Methods/Materials From the results that were collected from each of my five experiments,I found that the female fruit flies were more numerous than the male fruit flies in experiments one(23.9 degrees celsius),two(26.7 degrees celsius),three(29.4 degrees celsius), and five(18.3 degrees celsius). The male outsurvived the female in experiment four(21.1 degrees celsius). The females were able to outsurvive the male at the temperature most different from room temperature, while the male were able to only survive the temperature most closest to the room temperature. Results The results from the different experiments supported my hypothesis. Fruit flies are known as "pests" and never got the credit for helping out scientists with researching about the genes in a living body. They were one of the most studied insects on earth and my project gives a introduction to what fruit flies are and what they did to help scientists. Conclusions/Discussion	
Summary Statement My project is about how various temperatures from the incubator affects the sex ratio of the fruit flies at the end.	
Help Received My seventh grade biology teacher, Mr Kusumoto, has let me borrow his incubator and all the materials that were needed for the project. My sister, Jeanne Chai, has helped me to tell the difference between the two genders.	