



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Courtney H. Walters	Project Number J1928
Project Title Jeepers, Creepers, Where'd You Get Those Peepers? An Investigation of Recessive Eye Color in D. melanogaster	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine which eye color will be dominant when you cross a sex-linked recessive white-eyed (w) <i>Drosophila melanogaster</i> with an autosomal recessive sepia-eyed (se) <i>D. melanogaster</i>. I believe sepia should be the dominant trait seen in the F2 generation.</p> <p>Methods/Materials Four crosses were studied (2 Controls # white F x wild M/sepia F x wild M, 2 Variables # white F x sepia M/sepia F x white M). F1 generation larval cultures (obtained from a company) were counted and sorted by sex and eye color upon hatching. All F1 recessive crosses were made and F2 progeny were counted and sorted as before. All cultures were kept under the same environmental conditions.</p> <p>Results The Controls confirmed and followed the autosomal and sex-linked patterns for both F1 and F2. The F1 Variables had red eyes (unexpected) and white eyes (expected) and the F2 showed all three eye colors (red [wild color], sepia, white)! The wild eye color was not used in this cross. In only one instance white eyes was more dominant than the red color and even then it was barely. Sepia was the least!</p> <p>Conclusions/Discussion My hypothesis did not take into account that the dominant red color would surface when the double recessives were split into single recessives. Upon further breakdown of the numbers, it was seen that the autosomal and sex-linked patterns occurred in the F2 as if they came from completely separate crosses. This was because they are on two separate chromosomes. Even though fruit flies are used in this experiment, all genetic research can be used to broaden knowledge and help mankind.</p>	
Summary Statement This project is about how recessive eye color genes interact with each other in the fruit fly, <i>Drosophila melanogaster</i> .	
Help Received Science teacher gave an early overview of genetics and loaned the dissecting microscope for sexing. Mother helped type report, wrote room temperatures while I was in school, did initial demonstration on handling flies and helped edit report. English teacher proofed report.	