



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Daniel Keeley; Kathryn Keeley</b>	<b>Project Number</b> <b>S2008</b>
<b>Project Title</b> <b>Factors Affecting Competition for Food in a Woodland Bird Community</b>	
<b>Abstract</b> <b>Objectives/Goals</b> This year's project is a continuation of our project from last year (Feeding Preferences of Woodland Birds), in which we discovered that seed-eating bird species differ in their preferences for the location of where they feed and the type of seeds they prefer. There is much written in ecology that suggests these differences are due to behavior that reduces competition. This year our project investigates whether or not competition might be reduced by feeding at different times of the day and by different levels of aggression. <b>Methods/Materials</b> We used a homemade bird feeder for our three experiments. Prior to all experiments we kept seeds in the dishes to attract birds to our area. In addition, to analyze our data better we used statistics (Student's T-test and Linear Regression Analysis) with a program called "Systat 11". <b>Results</b> Our main focus was on the time of day that birds prefer to feed. Our hypothesis was that birds will feed at different times of day to avoid competition. After three months of testing we found that our hypothesis was supported. Some species preferred early morning, others mid-day and others late afternoon. In our second experiment we hypothesized that aggressive acts would vary between species and with the time of day and amount of food available. Neither time of day or amount of food affected aggression but species differed a lot in their tendency for aggression. Also, birds at the feeder (we called residents) were much more likely to be aggressive than birds invading (birds coming to the feeder while the residents were present), and residents were much more successful at driving the other bird off than were invaders. <b>Conclusions/Discussion</b> In conclusion, we believe that birds in this seed-eating community compete for food by feeding at different times of the day and by differences in their aggression towards one another.	
<b>Summary Statement</b> Our project investigates whether or not competition for food might be reduced by feeding at different times of the day and by different levels of aggression exhibited by birds in a woodland community.	
<b>Help Received</b> Father gave suggestions for the project and proofread papers; Mother helped cut paper & backgrounds	