



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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Project Title Vermicomposting! Make Composting Productive and Cost Efficient!	
Abstract Objectives/Goals The main objective of our project is to test that increase in temperature, increase in moisture level and adding egg shells can eventually increase the reproductive rate of worms in a worm compost system. Methods/Materials We created four worm bins to test these three factors. Three of the bins were designed to test the three variables, and the last bin is the control bin. Every week, we counted the number of worms in each bin five times and recorded our data for 6 weeks. Results In our experiment we saw that the worms reproduced quickly in the bin with egg shells. Worms also reproduced steadily in the bin with temperature control. However, in the moisture bin, worms did not reproduce and the worm population decreased at the end of the 6th week. Conclusions/Discussion Calcium in the egg shells may have helped stimulate worm reproduction and survival by making the bin more alkaline. We also saw some growth in the bin with the high temperature bin. The mean temperature for the high temperature bin during the 6 week period was 21.8 degree Celsius. The other bins were kept outside where the temperature was around 17.7 degree Celsius, which means that worm#s reproduction is favored at higher temperatures. Because 15-23°C is the most favorable temperature range for worm growth, I believe that worms tend to be more active at higher temperature. The moisture bin did not experience any population growth and the population declined in this bin. Too much moisture is bad for the red worms because they will suffocate and die in the presence of excessive amount of moisture.	
Summary Statement We conducted this experiment to determine what conditions can increase the worm reproduction rate.	
Help Received Friend helped us gather information; AP environmental teacher informed us about us about the benefits of composting; another friend helped revise the research paper.	