



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Clara J. Lisle	Project Number J1999
Project Title Ant Nests: Efficient Home Heating	
Abstract Objectives/Goals My project was to see how <i>Formica rufa</i> (wood ants) keep their nests warm. My hypothesis is that the ants may use sunlight or the heat that composting materials generate to heat their houses. Methods/Materials I constructed three fake ant nests. Two were made out of shredded hay and one was made out of Redwood Compost. The hay nests test the compost hypothesis because hay is a composting material. The redwood compost nest tests the sun's effect because the material won't heat up since it has already composted. The false nests were constructed next to a real ant nest. I measured the temperature of the nests with a digital thermometer twice a day for about a month. Results The hay nests got very warm (up to 65° C!) and then slowly cooled off while the redwood compost nest stayed just above ground temperature. The real ant nest maintained a temperature of about 25°C the whole time. The ground and air temperatures varied with the weather. I applied vents (fifteen straws) to one of my hay nests and the temperature rose again. Conclusions/Discussion Ants could indeed use the warmth the compost makes to heat their nests, but they would have to find a way to regulate it. I don't think that the sun has a very big impact on heating ant nests.	
Summary Statement False hay nests made out of compostable and non-compostable materials are used to test the hypothesis that ants use sunlight or composting organics to heat their nests.	
Help Received Father mowed the hay for the nests, parents showed me how to use Excel to enter and plot my data, I used my Father's digital thermometer. I discussed my project with Professor Nathan Sanders of Humboldt State University.	