



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Nicholas J. Pinkerton	Project Number J0517
Project Title Compost Corrosion	
Abstract Objectives/Goals This experiment was conducted by hypothesizing that iron in a sterile environment corroded and decreased in mass more with the addition of compost. My objective was to determine if wrought iron would rust more quickly in an environment with compost than in an environment without compost. Methods/Materials Eight wrought iron pieces were weighed for their masses in grams. 250mL of distilled water was added to eight sterilized jars. 125 mL of Orchard Supply Hardware Organic Compost was added to four of the jars. The iron pieces in the sterile environment were labeled the "A" group. The iron pieces in the compost environment were labeled the "B" group. The eight pieces of wrought iron were placed in the eight jars and were left to sit for twelve days while corrosion occurred. The iron pieces were removed from the jars and then the masses of the iron pieces were weighed again. Results The mass of each iron piece increased in seven of the eight results. The four pieces of iron in the sterile environment all increased in mass. Three of the four iron pieces in the compost environment increased in mass. The addition of compost to the sterile environment caused the "B" iron pieces to increase more in mass than the "A" pieces. The average mass increase of the "A" group was 0.175 grams. However, the average increase of the "B" iron pieces was 0.35 grams. The independent variable was the environment in which the iron was placed. The dependent variable was the mass after the wrought iron pieces corroded. Conclusions/Discussion My hypothesis was that if compost was added to a sterile environment containing a piece of iron, then more corrosion would occur, causing the iron's mass to decrease. My results did not support my hypothesis in seven of the eight results. From knowledge collected, corrosion is supposed to decrease iron's weight. The iron was measured for its mass, and the mass increased in seven of the eight tests. The idea of compost affecting iron's mass in a sterilized environment can be concluded from this experiment. There was some corrosion on a couple of the iron pieces before the experiment was performed. They were buffed with steel wool, but it is possible that all of the corrosion didn't wear off before commencing the experiment. This may have affected the mass of the iron pieces. The shape and thickness of each piece may have affected the final masses, too.	
Summary Statement The project is about how compost affects the amount of corrosion collected on iron.	
Help Received My mother helped me sterilize the jars and iron and helped me cut the letters for the backboard.	