



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Monique C. Iuster	Project Number J1913
Project Title Are Pennies the Solution to Your Snail Troubles?	
Abstract	
Objectives/Goals The goal of my project is to determine whether I can stop snails from eating plants by using a barrier of copper pennies.	
Methods/Materials Water, spray bottle, snails, soil, sunflower seeds, trays for planting seeds, pre-1982 pennies, digital camera, camera tripod, volt meter METHOD TO MEASURE SNAIL DAMAGE WITH/WITHOUT COPPER PENNIES I grew 25 sunflower seeds in two soil-filled trays until 10 inches tall. In tray 1, I placed barrier of pennies between the sunflower plants. In Tray 2 I had sunflower plants without pennies. I placed 10 snails into each tray, on the opposite side of the tray to the plants. I sprayed plants with water. Every 4 days I added new snails. I took pictures of snail behavior in both trays on the initial placement. I counted the number of plants left in each tray for 8 different days. METHOD TO MEASURE ELECTRIC POTENTIAL OF SNAILS AND COPPER I measured the electrical potential between the snails' mucus and the copper pennies.	
Results After 20 days all the plants with pennys surrounding the plants were still intact. The container that had plants without a penny barrier had only 2 remaining plants. I also measured the voltage between the snail slime and the copper penny. I was able to measure readings of 64 to 130mv.	
Conclusions/Discussion My hypothesis was correct. You can repel snails with copper pennies. The snails did not eat any plants from the tray with pennies over the 2 ½ week experiment. All plants except 2 were eaten in the tray without pennies. I also observed that in the penny tray the snails climbed onto the copper pennies, and almost immediately turned and left. In the no penny tray the snails had a field day. They immediately went forward, onto the plants and began eating. I was also able to measure the electrical potential between the snail and the copper. We found out there was a charge when the snail slime came in contact with the copper penny. This proved my research that snails were shocked because of an electrolytic reaction between the snail slime and the copper. Although I am sure commercial farmers could not use pennies on their huge farms, perhaps home gardeners might think about pennies as an alternative to pesticides.	
Summary Statement My project determined that a barrier of copper pennies dated before 1982 surrounding sunflower seedlings prevented common garden snails from reaching and thus eating the plants.	
Help Received Thank you to my mother who helped type the report and the marine biologists Debbie Walton and Ross Clark who helped me understand the concept of an electrolitic reaction and ion disassociation. Also thank you to my dad who created a DVD movie from the pictures I took.	