



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Anna D. de la Rosa	Project Number J1004
Project Title An Ap'peel'ling Purifier? Using Banana Peels to Remove Copper from Water	
Abstract Objectives/Goals The experiment was to determine and measure the effect of banana peels on water containing copper ions. My hypothesis was that the banana peels would decrease the amount of copper in the water and that the more banana peels are used, the larger the decrease would be. My objective was to see if banana peels could be used as a purifier of water contaminated with copper. Methods/Materials The experimental set-up was made up of 4 groups of 4 jars per group. Each jar was filled with 300 mL of 1.0 ppm copper ion solution. Each group was mixed with different amounts of pulverized banana peels: none for control, 0.5 grams, 1 gram, and 2 grams. Samples were withdrawn at various times (3, 9, 24, 48, and 72 hours) after the initial set-up. The samples were tested for copper concentration with a LaMotte copper test kit and the results were recorded. The degree of copper extraction at various times relative to the different amounts of banana peels used was graphed based on the average of 4 data points for each group. Results All samples with banana peels showed decreases in copper concentration over time. The group with 2 grams of banana peels removed the largest amount of copper within the first 24 hours. At all tested amounts of banana peels, the copper concentration leveled off at very low values after 72 hours. Conclusions/Discussion My results supported my hypothesis; banana peels have a positive effect on the removal of copper from the copper ion solution. As such, they could potentially be considered for an environment-friendly method for converting wastewater into "recycled" water.	
Summary Statement My project proved that banana peels show great promise for being able to remove copper from the water contaminated with copper ions.	
Help Received Parents helped take pictures of experimental set-ups and results.	