



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Jemima Hernandez	Project Number 34894
Project Title Can a Homemade Whitening Treatment Whiten Faster than a Top Ranked Whitening Toothpaste?	
Objectives/Goals My objective was to determine the varying affects of hydrogen peroxide in teeth whitening products. Methods/Materials Before beginning the experiment, the following supplies are needed: two unfinished white tiles, instant coffee, boiling water, whitening toothpaste, two toothbrushes of the same kind, baking soda, hydrogen peroxide, mouth wash, regular toothpaste, a large bowl, notebook, and permanent marker. The instant coffee must be mixed along with the boiling water in a large bowl. Soak white tiles in coffee for twenty-four hours. Remove tiles from large bowl and let dry for another twenty-four hours. To create the homemade teeth whitening mixture, mix a teaspoon of toothpaste and baking soda with an ounce of hydrogen peroxide and mouthwash. Mix continuously until the mixture has reached a paste consistency. More baking soda may be added to make the mixture thicker. With the permanent marker label each tile and toothbrush according to the whitening medium that will be used with it. Take each tile and brush it in circular or vertical motions for a period of thirty seconds for each trial. The experiment requires a minimum of seven trials to portray a one week period. Remove any residue by gently patting down the tiles with a napkin. In a notebook record observations and comparisons. Results The homemade whitening product with the higher concentration of hydrogen peroxide whitened faster opposed to the store bought whitening toothpaste. In the end they both had the same whitening effects, but the product with the higher concentration gave quicker results. Conclusions/Discussion At the beginning of this experiment I theorized that the whitening toothpaste would whiten quicker and more efficiently than the homemade whitening treatment. However, my hypothesis was quickly debunked because the homemade whitening mixture removed the coffee stain in the first trial, which is attributed to the high concentration of hydrogen peroxide. According to research, hydrogen peroxide was used during the early centuries as an agent for removing teeth stains, intrinsic stains, and was very successful. Even though the whitening toothpaste contains an amount of hydrogen peroxide, it is very minimal. Therefore, the outcome of this experiment is very logical.	
Summary Statement The purpose of this experiment is to determine the affects of varying concentrations of hydrogen peroxide in whitening products.	
Help Received	