



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Nicole M. Kuntjoro	<b>Project Number</b> <b>J2122</b>
<b>Project Title</b> <b>The Extraction of Blots, Blemishes, and Stains</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this experiment was to find a cost-effective cleaning agent that could remove stains. <b>Methods/Materials</b> Six cloths were stained with the same amount of red wine. This was repeated with the substances Sharpie, blood, and lipstick. These cloths were then submerged in the cleaning agents ammonia, bleach, Coca-Cola, detergent, and water. When finished, five cloths of the same stain were in different cleaners, leaving one dry to compare the color change at the end of the test. The cloths were taken out of the liquid, photographed, and any observations of the appearance were recorded at the half, first, second, and fourth hour mark. These cloths were also analyzed with a grid system and a color analyzer in the computer program Gimp. <b>Results</b> At the end of the test, the data proved that bleach performed the best. Bleach cleaned the wine and blood stains the quickest and was the only liquid to have an effect on the Sharpie stain. Ammonia was the second best, cleaning the wine and blood stains at a slower rate than bleach, but had no effect on the other two substances. Water and detergent were both mediocre, never completely cleaning the stains, but discolored them or left a faint outline. Lastly, Coca-Cola was the most ineffective because the liquid dyed the cloth brown, making the stains even worse. <b>Conclusions/Discussion</b> My hypothesis was supported by the data collected. Bleach proved to be the most effective cleaning agent.	
<b>Summary Statement</b> This project found that most effective cleaning agent that could clean selected stains was bleach.	
<b>Help Received</b> Parents helped purchase materials; Science teacher helped with instructions and advise	