



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Austin H. Lee	Project Number J1919
Project Title What Is the Most Effective Fire Retardant for Both Large and Small Fires?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This experiment was carried out to identify the most effective fire retardant overall in both large and small fire situations.</p> <p>Methods/Materials Six sets of five 5"x5" squares of different materials; wool, rayon, cotton, polyester, and paper, were soaked in 6 different fire retardants; soap water, cornstarch, flour, baking powder, Flame Stop, and Flame Guard. One set was left untreated. All of the materials were hung to dry for one day. Then, over a barbecue grill, a lighter was held at each square until ignition and that time was recorded.</p> <p>Results The retardants flour, soap water, and cornstarch created an almost unnoticeable change in ignition time for all of the materials. Baking powder, Flame Stop, and Flame Guard made great changes to the ignition time.</p> <p>Conclusions/Discussion The baking powder, as predicted, outperformed flour, cornstarch, and soap water in functioning as a fire retardant. However, the two commercial fire retardants were far superior to all of the homemade ones, preventing the materials from igniting at all and, instead, just allowing them to be blackened.</p>	
Summary Statement The project was used to find out what common household substances work well as fire retardants.	
Help Received Father supervised fire.	