



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Eric T. Jager	Project Number J1217
Project Title What Burns Faster and Why? Cotton or a Cotton/Polyester Blend?	
Objectives/Goals The goal of my project is to figure out which material burns faster and why it burns faster. I believe that the cotton/polyester blend will burn faster than the cotton.	
Abstract Methods/Materials Materials: 1. An OHAUS Scale; 2. Brass Masses; 3. Hardware Cloth; 4. Cotton; 5. Cotton\Polyester Blend; 6. A Lighter; 7. A Microwave Fan; 8. A Stopwatch; 9. Blue Painters Tape; 10. ¼ Inch Plywood; 11. A Stapler; 12. Staples; 13. Tin Foil. Methods: 1. Cut the hardware cloth into six eight by eight squares. 2. Place the hardware cloth at a 45 degree angle with each other. 3. Cut ten 6.5 inch by 6.5 inch squares of both fabrics that weigh three grams each. 4. Place one square of the fabric on one side of the hardware cloth. 5. Place lighter at the bottom center of the cloth and ignite. 6. Hold lighter for ten seconds. 7. Time how long it takes the fabric to fully burn.	
Results The results that were obtained found the cotton\polyester blend burned faster than the cotton. The average burn time for the cotton/polyester was 42.130 seconds. The average burn time for the cotton was 56.026 seconds.	
Conclusions/Discussion My science fair project was, #What Burns Faster and Why? Cotton or a Cotton\Polyester Blend?# I thought that this project was going to be simple while in reality it was extremely frustrating and difficult. It took three design failures to figure out how to get one that worked. This experiment was conducted by placing two sheets of hardware cloth together at a 45 degree angle and placing a piece of fabric on one side of the hardware cloth. then I ignited the fabric while my brother worked the stopwatch. My hypothesis was proven correct. The reason why the experiment turned out the way it did is because polyester is more flammable than cotton since polyester melts as it burns. If you have a material that will easily catch fire and that will spread the flame throughout the material fast you will have a much faster burn time. These two factors in the experiment played a big role in why the cotton\polyester blend burned faster. I believe that the experiment was a success. It may have taken us a few tries to get everything straight but once we figured out our design everything was great. If I could redo this experiment I would change the material that was burned. Other than that I believe that the project was a huge success.	
Summary Statement The cotton/polyester blend burned faster than the cotton, because as polyester burns it melts and spreads the flame throughout the material faster.	
Help Received Dad helped with the experiment design and pictures; Mom helped with the cutting of both fabrics; My brother helped by working the stopwatch.	