



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

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| Name(s) Isabel M.H. Thornell | Project Number J1424 |
| Project Title Flammable Fabrics | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine what fabric is the most flammable, and what fabric is the least flammable; and therefor, should be use for children's clothing or house hold items.</p> <p>Methods/Materials The materials of the study consisted of an Aim and Flame lighter, assorted natural and synthetic fabrics, stopwatch and adult supervision. the method was to ignite the fabric and record two different burn rates of each fabric and record how fast or slow it burned.</p> <p>Results The results showed that the most flammable fabric was made of natural fibers. Natural fabrics tended to ignite more quickly, burn more rapidly and inconsistently than the synthetic fabrics. Some synthetic fabrics ignited quickly but burned at a steady slower pace. While most synthetic fabrics resisted ignition and just melted from the heat of the flame.</p> <p>Conclusions/Discussion The results supported the hypothesis in that natural fabrics would ignite quickly and that synthetic fabrics would resist ignition. The natural fabrics ignited quicker because they did not have any dyes or blends. The synthetic fabrics resisted ignition because they have chemicals and blends of things that are not natural. The results from this study helped me to understand how fire reacts to certain fabrics and what materials to use in everyday life.</p> | |
| Summary Statement If you have a child, you should purchase clothing made of synthetic fibers, because based on my research and findings synthetic fabrics ignite and burn slower than natural fabrics. | |
| Help Received I created the objective and hypothesis on my own. My mother oversaw the fabric being ignited and my father assisted in helping me attain the average degree of the heat source, the Aim and Flame. | |