CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY

Name(s)

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Project Number

38801

Project Title

Measuring the Attributes of Different Fabric Weaves

Abstract

Objectives/Goals

In this experiment, I wanted to find out if there was a relationship between the weave of a fabric (plain twill satin weave) and the strength stretch and fray of it. I tested by ripping the fabric for strength, putting weights on the fabric for stretch, and fraying the fabric with sandpaper. I tested each type of fabric 9 times, 3 along grain, 3 cross the grain, 3 diagonal grain. In the end, twill was strongest, plain frayed most, and plain stretched most.

Methods/Materials

I tested by ripping the fabric for strength, putting weights on the fabric for stretch, and fraying the fabric with sandpaper

materials~ 1 yard of twill cotton, 1 yard of satin cotton, 1 yard of plain cotton, fishing scale, 2 spring clamps, 1 2pound weight, drill, sandpaper.

Results

the tests show that twill was the strongest weave, plain frayed the most, and plain also stretched the most.

Conclusions/Discussion

patterns in the grain of the fabric show that there is probably a relationship in the grain of the fabric and the strength and stretch of it. One could possibly test this for further research.

Summary Statement

In this project I tested to see if the weave of a fabric affected it's strength, stretch, and fray.

Help Received

Although my parent's helped me come up with the project idea, I designed and performed the experiment by myself.