



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Ian K. Flagstad	Project Number J1810
Project Title Carbon Fiber... Kevlar... Fiberglass...	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In this project I was attempting to find the answer dealing with the bending strength of three kinds of materials, carbon fiber, kevlar, and fiber glass. In these explorations I will conduct 9 different categories. In each category I will conduct any where from 7-15 test.</p> <p>Methods/Materials I tested Kevlar, carbon fiber, and fiberglass in three temperatures 72 degrees, 0 degrees, and 200 degrees. Each material sat in these temperatures until finally reaching that temperature. I immediately put the material on to an elevated surface with only the center of the material being supported. Once I completed those steps I divided 465.5g. on to all four corners. I let the material hang for 3:00 min. long. The measured the angle of degrees the material came out being.</p> <p>Results In the end I found that the 0 degrees temp. increased the materials strength. The 200 degrees temp. Immensely decreased the materials strength. The best overall material for bending came out to be kevlar.</p> <p>Conclusions/Discussion In conclusion I found that at a certain point the materials resin will melt and cause the material to become extremely flexible. In the colder condition the resin became frozen and strengthening the material. These results apply to all three materials. Therefore if an engineer wishes to find a material that will bend easily, like a fishing pole then they should use fiberglass. If the engineer wishes to find a material that needs to stay extremely stiff, like a bullet proof vest then they should use kevlar.</p>	
Summary Statement The strength of kevlar, carbon fiber, and fiberglass in different conditions.	
Help Received Mother helped type report and pay for materials; adult advisor, Mr. Ryan Moulton helped with resin application; friend with resin application.	