



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Sydney E. Clark	Science Fair Use Only
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) The Effectiveness of Threadlocking Compounds	S0103
	Division <input type="checkbox"/> Junior (6-8) <input checked="" type="checkbox"/> Senior (9-12)
Preferred Category (See page 5 for descriptions.) 1 - Applied Mechanics/ Structures & Mechanisms/ Manufacturing	
Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges. <p>Thread locking compounds prevent the loosening of nuts and bolts on devices that are subject to movement or vibration. I did different tests to see how much of an effect the thread locking compound, Loctite, has on nuts and bolts. Three different types of Loctite were used in my experiment; blue, red, and green. I had hypothesized that the types of Loctite would be strongest as I type them in descending order: green, red, blue. I hypothesized the regular glues wouldn't be as strong as the Loctite, and their strengths would be as followed: RTV silicon glue-strongest, Goop-weakest, and Super Glue would fall right in between. I applied the Loctite to the pairs of nuts and bolts, and allowed them time to dry. I measured the torque it took to take them apart with a torque wrench. The results ended up being pretty similar to those of the Hughes Aircraft's Standards. I also did some tests on pairs of nuts and bolts with primer applied to the bolt before the nut. As a comparison to the Loctite, I ran some tests with regular glues; RTV silicon glue, Super Glue, and Goop. Most of these glues did not have much of an effect on the pairs of nuts and bolts. However, the Super Glue did. it was almost as effective as the strongest types of Loctite.</p>	
Summary Statement (In one sentence, state what your project is about.) The effectiveness of thread locking compounds on the loosening of nut and bolts on devices that are subject to movement or vibration.	
Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Father helped conduct experiment.	