



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Davis K. Waugh	Project Number J1936
Project Title Light Bulb Efficiency	
Abstract Objectives/Goals The experiment is trying to find not only the most efficient light bulb available, but also the best overall value, taking into account price, availability, and energy efficiency. I think the Compact Fluorescent Bulb (CFL) will be the best overall value and that the incandescent bulb will be the worst overall value. Methods/Materials The bulbs that I tested were halogen, incandescent, compact fluorescent light(CFL) and Light Emitting Diode (LED). To find this, the wattage registered was compared to the wattage on the box of each bulb. A volt meter was used to measure the wattage of each test. Each light would be turned on and the data would be recorded. I also tested which bulb is the hottest to the touch and which is the coolest. Results The wattage for all four bulbs registered the about the same on the volt meter as the package stated. Out of the four bulbs tested, the halogen, incandescent, CFL and LED, the halogen and incandescent were the hottest. The CFL was only warm to the touch. The LED bulb was the same temperature on or off. Conclusions/Discussion In terms of efficiency, value, the CFL bulb turned out to be the best overall value because it was inexpensive to buy, easy to find and was very energy efficient. The Halogen turned out to be the worst value. The LED is the bulb of the future, but it needs to be easier to find, less expensive and have better light quality.	
Summary Statement I took the four most commonly used light bulbs and compared them based on cost (bulb price and electrical cost), availabilty and efficiency.	
Help Received My dad helped me build the test rig; Mother helped with organization of display board	