



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

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**Project Title**  
**Solar Tubes vs. Conventional Fluorescent and Incandescent Light Bulbs**

**Abstract**

**Objectives/Goals**  
My objective are to test whether solar tubes produce more light than traditional florescent & incandescent lights. I want to determine which is most cost effective.

**Methods/Materials**  
One Conventional Incandescent Light Bulb, One Florescent Light Bulb, One 11-Centimeter Diameter Drier Duct, Two Simple Light Fixtures Tree, Large Storage Boxes(same size), Box Cutter, and Light Meter.

Make three test boxes the same size. Lable them: 1. Incandescent Light Bulb, 2. Florescent Light Bulb, or 3. Solar tube. Cut a 10-centimeter hole in each. Put the appropriate light source in each box. Test each light source on three different days and in three different parts of the box (top, middle,& low) using a light meter. Measure both filtered and unfiltered light, in lumens. Teh different light sources three different days using the light meter. Write down the observaton and the results.

**Results**  
My results show that the Soloar Tube produced the least light, the least heat, and was the most cost effeective for a long-term setting(2+ years). Also, my results show that the incandescent light produced the middle amount of light, the most amount of heat, and was the least ncost affective. Last, my florescent light produced the most light( for it's wattage), the midle amount of heat, and was least cost affective.

**Conclusions/Discussion**  
I have found that each light source is suited for it's own particular function. The solar tube made no heat but the laest about of light. th9is was the most cost affective for a long-term prodject. I found that the florescent light made the most light. This was teh most efficient for all the time usage. Last was the incandescent light bulb and it made the most heat, the middle amount of light, and was most efficient if you were to use it very rarely.

**Summary Statement**  
I compaired and contrastied Solar tubes and Incandescent & Florescent Light Bulbs.

**Help Received**  
My father helped me with puting together the lights, with grammar and spelling, and geting me inside box.