



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Aden H. Rogerson	Project Number 22139
Project Title Incandescent vs. Fluorescent Measuring Amperage and Heat	
Objectives/Goals I wanted to find out how much electricity will be saved if fluorecent light bulbs are used for lighting instead of incandescent bulbs. I also wanted to find the out the diferece in heat out put between the two kinds of bulbs. Abstract Methods/Materials I used a amp. meter to measure curent flow at 120 volts. I used the formula amps x volts = watts tox measure total electrical consumption. I used an Igloo ice box, with a volume of 1,105 cubic inches. I used x thermometer to measure temperature change, also a drop light for a portable lamp. Results I found that the 75 watt incandescent produced a 80 degree rise in temperature with in the igloo 30 minutes and it used .6 amps. The equivalent fluorescent bulb produced a 20 degree rise in tempature an used .1 amp. The 60 watt incandescent bulb produced a 60 degree rise in temperature and used .4 amps. The equivalent fluoescent bulb produced a 15 degree rise while only using .1 amps. It should be noted that the amp meter would register no lower than .1 amps. However the 75 watt equivalent fluoescent bulb measured slightly more than .1 amps so I feel the measurement is accurate. Conclusions/Discussion Flourescent bulbs are more energy efficient and produce less heat than incandescent bulbs. However it would appear that flourescent bulbs produce more heat per .1 amp used . But since they use less amps fo equal light output they produce less heat. My experiment shows that every .1 amps produces a16 degrx rise in the given volume of air, from the results of the 75 watt incandescent bulb. The 60 watt incandescent produced a 15 degree rise per .1 amp . The 75 watt fluoescent equivalent produced a 2x degree rise from .1 amps. From this last result we can deduce that the 15 degree rise from the 60 watt equivalent fluoescent would mean that it would consume 25% less amps than the 75 watt equivalent fluoescent, or .075 amps. The difference in amperage use between the 60 watt incandescent and thex fluorecent equivalent would then be .325 amps, or 18 degrees per .1 amp. Thus more heat was producx per .1 amp from the fluoescent bulbs.	
Summary Statement Comparing the heat produced and electricity used between incandescent and fluoescent light bulbs.	
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