



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Amir Mojarradi	Project Number J0826
Project Title Thousands of Volts from a Battery!	
Abstract Objectives/Goals Create thousands of volts from a battery. I think that direct connection of a battery to a transformer will produce high voltage. Methods/Materials Use a transformer to increase voltage, from low to high. The transformer was salvaged from a friend's television. Direct connection to battery did not work. I learned that a transformer's input must be AC and not DC. My research suggested that I could create an AC driver circuit for the transformer and power it with a battery. I found the schematic of the circuit on the net and started to build it. Results After much testing and researching, I learned that the battery's DC current can be fed into a 555 timer chip, which switched the current on and off, converting the battery's direct current to alternating current. That was then fed into the transistor, which also switched the current, giving it a final AC current that was then fed into the transformer, which then produced thousands of volts. The experiment was proven, as the high voltage jumped a spark gap. Conclusions/Discussion My hypothesis was incorrect, as it is not possible to connect a battery to a transformer, because a battery produces a direct current. Faraday's Law states so. Instead, we must convert the current to alternating current and then feed it into the transformer. A transformer works by making a magnetic field around one coil, using alternating current. Inducing magnetic field into another coil with many more turns, increases the voltage.	
Summary Statement Create high voltage from a battery.	
Help Received My neighbor helped solder board. Friend gave me TV transformer.	