



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

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| Name(s) Jessica Bristol; Mallavi Sinha | Project Number J0906 |
| Project Title Burning Green Laser | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal is to prove that metal will be able to withstand the most amount of heat from a burning laser because the metal is a stronger material as compared to wood, plastic, cloth, or paper.</p> <p>Methods/Materials The materials utilized are: 1 green laser, jeweler's screwdriver, bonding glue, soldering iron, 3 sheets of newspaper, 3 pieces of redwood, 3 pieces of cloth, 3 plastic pieces, 3 sheets of metal. The experimental design are as follows: 1) Place newspaper on a flat surface; 2) separate the two halves of the green laser pointer by unsealing the glue; 3) remove the battery cap from the laser pointer; 4) Remove the batteries from the battery cap and place both parts on the newspaper; 5) Use the jeweler's screwdriver to adjust the exposed screw and place the parts on the newspaper; 6) Heat up the soldering iron and touch the tip to the circuit board that is right above the screw that was previously adjusted; 7) Remove the tip of the soldering iron after 5 seconds & reassemble the laser pointer; 8) Test the laser on the materials and time how long each one takes to burn; 9) Record all results in seconds.</p> <p>Results The metal was able to withstand the longest duration of heat from the burning laser. The average time for each material is as follows: Metal - 341 seconds; Plastic - 150 seconds; Wood - 72 seconds; Newspaper - 12 seconds. Therefore, we were able to quantify the length of time it took to burn the different test materials.</p> <p>Conclusions/Discussion The results show that the objective of the experiment was attained since the metal did withstand the longest duration of heat. This project expands our knowledge about electronics since we were able to convert a laser beam pointer from a visual pointing object to a far more powerful instrument. The concentration of the beam through minor mechanical manipulation shows that a simple instrument can be altered to an instrument that can be used in multiple ways.</p> | |
| Summary Statement A green laser pointer can be converted into a laser beam and the burning thresholds of different materials can be measured. | |
| Help Received Parents, team mate, and teachers helped in the research and purchasing for the project. | |