



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Neel Jagdish; Siddharth Phatak	Project Number J1016
Project Title Blue Light Exposed	
<p style="text-align: center;">Abstract</p> <p>Objectives Our objective was to find out which mobile device produced the most blue light. We used a few makes and models of cell phones and tablets for this projects. There is evidence that blue light emitted from devices such as cell phones and tablets are harmful to human eyes. We were curious to find out which devices could be more harmful than others.</p> <p>Methods Blue colored film, Magnifying lens, Photo-resistor and Multi-meter. Constructed a cardboard box to house the lens and the photo-resistor (at the focal point of the lens). Tube with blue colored film on one end. Placed 7 different mobile devices in front of the blue film, turned the devices to max brightness, and displayed white image on its screen. Measured the resistance generated in the photo-resistor by the blue light.</p> <p>Results Performed 10 trials, using the 7 devices, and then analyzed the data. We measured the amount of blue light emitted from the mobile devices by measuring the resistance in the photo-resistor in Kilo-Ohms. More the resistance less the amount of blue light. After doing the experiment with multiple devices and multiple trials we found out that the iPhone 7 produced blue light the most with an average measurement of 143 K-Ohms. The mobile device with the least blue light was the Fire HD with an average reading of 536 K-Ohms.</p> <p>Conclusions In the sample of 7 devices that we tested, the iPhone family of phones produced the most blue light while Fire tablet produced the least.</p>	
Summary Statement As measured by the resistance in the photo-resistor, the iPhones produced the most blue light while Fire tablet produced the least.	
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