



CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

Name(s) Jacob S. Vaughan	Project Number J1022
Project Title Can Your Wi-Fi Go Any Faster?	
Abstract Objectives/Goals The goal was to build a parabolic Reflector and test it to see if it boosts the signal strength from a wireless routers antenna. Methods/Materials Materials: Cardboard, aluminum foil, a laptop computer, wireless antenna for the laptop, a wireless router, Wi-Fi connection, an angle chart with angles marked every 15 degrees from -180 degrees to 180 degrees and a computer program that can read the wireless signal strength. Method: I built a parabolic reflector using the cardboard and aluminum foil. I attached the reflector to the wireless antenna and attached both to my laptop. I used the angle template to show me where to aim the parabolic reflector. I took 3 readings of the wireless signal strength at each angle and got the average signal strength. I then recorded and analysed the data. Results My hypothesis was inconclusive because the wireless signal strength got both better and worse with the addition of the parabolic reflector. I expected the signal strength to get better not worse with the parabolic reflector. The signal strength did not get better or worse consistently, which is why I could not definitely state my hypothesis was correct or incorrect. Conclusions/Discussion My results were inconclusive because the wireless signal strength of my control variable without the antenna and reflector was sometimes better and sometimes worse than when the parabolic reflector was attached. However, in two of my experiments the best signal strength was at -30 degrees and in all the experiments when the parabolic reflector was facing -165 degrees the signal was the worst. I think a parabolic reflector would be helpful to people with a bad wireless signal if the reflector was built correctly. I think my reflector may have had some problems because the foil was crinkled and the cardboard in the middle may have blocked some of the signal.	
Summary Statement My project is about using a parabolic reflector to increase the signal strength given off by a wireless router.	
Help Received My mother helped me hold the laptop so I could read the signal strength at each angle.	