



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

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| Name(s) Derek M. Nasalroad | Project Number J1418 |
| Project Title Effects of Various Materials on Wi-Fi Signal Speed | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this study is to determine which of the tested materials can most efficiently increase the speed of a Wi-Fi signal.</p> <p>Methods/Materials Wi-Fi router, parabolic reflector covered with various materials, smartphone with speed test app. Tested the speed of a Wi-Fi signal when reflected by different materials.</p> <p>Results Not any one material consistently showed the greatest increase in Wi-Fi signal speed, though some increased the speed more than others in certain spots. The speed of the signal when reflected by a certain material varies depending on distance from the router.</p> <p>Conclusions/Discussion Repeated trials with multiple materials determined that my hypothesis was only partially correct; the aluminum did not always show the greatest increase in signal speed. It is concluded that the effectiveness of materials when improving Wi-Fi signal speed is impacted by the distance from the router.</p> | |
| Summary Statement I showed that the speed of a Wi-Fi signal can be improved when reflected by certain materials. | |
| Help Received While I completed most of this experiment myself, suggestions were provided by my science teacher. My English teacher and my parents helped me evaluate my choice of words in my writing. | |