

## **Connection Conundrum**

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### **Topic**

#### **Wifi Connection**

This project was based on the slow wifi speeds in my house. We were paying for blazing fast speeds but we only got a fraction of what we paid for. This needed to be solved for optimal speeds.

I made a trip down to Best Buy and got a wifi extender to try to extend the speeds thorough the house!

### **Hypothesis**

IF I place the extender next to the fire place, THEN the speeds will be optimal, BECAUSE It is about halfway between the ends of the houses.

### **Procedure 1**

1. I connected the extender to the wifi and wrote down a list of various spots I could place the extender.
2. I went through the list and collected the results on a graph
3. I analyzed the results and came upon a conclusion that would result in the best speed

Control- Ping: 81 Download: 26 Upload: 7

## **Analysis**

Ping was lowest when it was in the kitchen. The download and upload speeds are fastest right next to the router. This means the extender is more powerful at sending out signals than the actual WiFi box.

## **But then I had another idea**

**What if I just rewired the wifi box to the center of our house?**

I thought about it for a while

I knew it would be a lot of work, but definitely worth it

So, I got to work

## **Procedure 2**

1. Walked to Lowes to purchase a COAX cord
2. Drilled a hole along the boarder of the house to run into the living room
3. Threaded the cord through the wall and set up the box for testing
4. Ran the tests with excellent results

## **Finished (Very Surprised )**

After I got under the house and tirelessly ran wires everywhere, I was very thankful

I had sourcing high speeds of Ping:21 Download: 345.18 Upload: 11.98  
I realized that the location of the router really matters to get the Mose efficient speeds!

## Conclusion

I believed that the fastest speeds would be half way in between the router and the other side of the house. My hypothesis was entirely incorrect. I wanted to experiment with the location of the extender and not with the actual router. But, by the end I was thinking something needed to change because we were still not getting what we paid for. I put the router in the middle of the house and out Connection Conundrum was solved! There were not any scientific errors. I learned quite a bit on how the waves bounce and travel thorough the house.

## References:

How does WI-FI Work? (n.d.). Retrieved February 04, 2021, from <https://www.britannica.com/story/how-does-wi-fi-work>

Press, C., Nichols, R., Foottit, T., Yavuz, M., Radjassamy, R., Sharpe, J., . . . Pandit, S. (2019, January 10). Wifi networking: Radio wave basics. Retrieved February 04, 2021, from <https://www.networkcomputing.com/wireless-infrastructure/wifi-networking-radio-wave-basics>

Marshall Brain, T. (2001, April 30). How wifi works. Retrieved February 04, 2021, from <https://computer.howstuffworks.com/wireless-network.htm>

Where should i place my netgear wi-fi range extender? (n.d.). Retrieved February 04, 2021, from <https://kb.netgear.com/25508/Where-should-I-place-my-NETGEAR-Wi-Fi-range-extender>

Nadel, B. (2020, March 19). How to set up your Wi-Fi extender for the best signal. Retrieved February 04, 2021, from <https://www.tomsguide.com/us/wifi-extender-setup-guide,review-4133.html>