CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
Thomas V. Tuttle

Project Number
J1526

Project Title
Wave Blockers!

Abstract

Objectives/Goals
My project was to find out what materials could block Wi-Fi waves the best.

Methods/Materials
Using a transmitter (an Apple Time Capsule) and a receiver (an Apple MacBook Pro), I encased the transmitter in either aluminum foil, plastic wrap, wrapping paper, steel cake pans, a wooden box, a cardboard box or a lunchbox, and recorded the signal strength of the receiver (in bars, Max=4) at different distances up to 80 meters away. I also did a control test with no material surrounding the transmitter.

Results
The steel cake pans brought the signal down to 0 in both tests, while the cardboard box, lunchbox and wrapping paper always stayed at 4 bars.

Conclusions/Discussion
My conclusion is that steel is good for blocking Wi-Fi waves, and that a material's thickness may also be a factor when it's blocking Wi-Fi waves.

Summary Statement
My project was to find out what materials could block Wi-Fi waves the best.

Help Received
Father helped set up the transmitter and took pictures; mother handled the receiver and reported readings.