CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY

Name(s)
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Project Number
J0903

Project Title
The Crystal Radio

Abstract

Objectives/Goals
The objective of this science fair project is to build a simple crystal radio from scratch. Then experiment to see if it works without external power. If it does work, to then experiment how the radio#s antenna length will affect its voltage, clarity and the number of stations it will play.

Methods/Materials
Materials:
Cylindrical Kraft Tube, 4-in. diameter; Masking tape; Mounting board, wood, about 6 in. # 9 in.; Wire, solid, plastic insulated, 22 gauge, 100 ft.; Steel wire, galvanized, 20 gauge, 100 ft.; 2 PVC pipe couplings, 1## x ##; Germanium diode; 47-komh resistor; Wood screw, small; Alligator Clip, 2#, non-insulated; Ceramic earphone, high- impedance; Wire strippers; Philips head screwdriver; 4 fanestock clips; Glasses, Safety, ANSI Certified; Lab Notebook

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Method:
First assemble the radio with the reference to the model of a crystal radio diagram. Then connect the antenna and the ground connections and experiment using various antenna lengths. Record the micro amps, clarity and the number of stations being played.

Results
In the end, my hypothesis proved to be correct and the radio worked without electricity. When the experiment was conducted, once again my hypothesis was correct and the was proven that the longer the antenna length, the better clarity, more number of stations.

Conclusions/Discussion
My conclusion turned out that my hypothesis was correct! The surprising thing was that the radio actually worked without electricity and that we could actually listen to many stations!

Summary Statement
The crystal Radio is an unique device that uses no electricity and is dependent on the antenna length.

Help Received
My dad helped me with experimenting and building difficult parts of the apparatus.