What Material Best Conducts Electricity

By: Rosa F.

Question

What material best conducts electricity?

Hypothesis

I think that some types of metal like copper will best conduct electricity.

Experiment Design

Materials

For my experiment I used copper wire, galvinized steel wire, Brass wire, Fishing line, Balsa wood, Pieces of an electronics kit, Two double A batteries and a Volt meter.

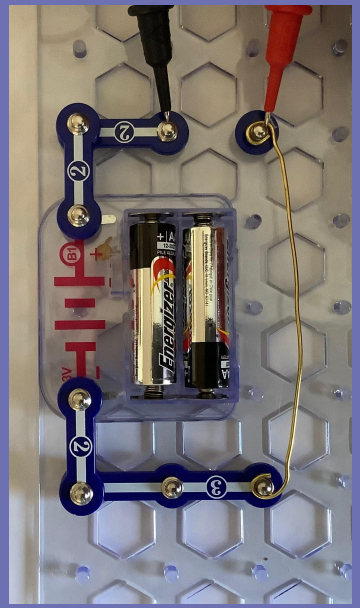
Setup

Here is the way I set up my experiment. I used small conductor pieces from an electronics kit that I have. I left two open spaces: one for the variable conductors and the other one to complete the circuit with the volt meter so I could measure the conductivity and the resistance of the variable material.

Procedure

For my experiment I'm using four different materials. So the way that I conducted my experiment was I left an empty space on the circuit so I could switch out the different materials. And the way that I measured the conductivity and resistance with a volt meter was I left a small empty space in the circuit and touched the tips of the volt meter to each side so it would measure it. And then I wrote down my data on a google spreadsheet.

Results - Images



Brass

Copper

Steel

Wood

Nylon

Data


Resistance (ohms)
1000
750
500
250
0
Resistance (ohms)
Copper
Brass
Steel
Wood
Nylon
Material


Conductance (1/ohms)
0.0020
0.0015
0.0010
0.0005
0.0000
Conductance (1/ohms)
Copper
Brass
Steel
Wood
Nylon
Material

Results - Description

I observed that all the metals that I tested worked very well and had a lot of conductivity as well as resistance. But the nylon and wood had no conductivity or resistance so both of them would be horrible conductors. So my end result was that metals work well as conductors.

Conclusions

I learned that metal works well as conductors but other materials such as nylon and wood do not. And that is why my hypothesis is correct because I predicted that the metals would work the best.