

## Resistance Worksheet

Simulation: [https://phet.colorado.edu/sims/html/resistance-in-a-wire/latest/resistance-in-a-wire\\_en.html](https://phet.colorado.edu/sims/html/resistance-in-a-wire/latest/resistance-in-a-wire_en.html)

1. Draw an example of a resistor with a resistance of 1.00 ohms. Label the resistivity, the length, and the area. Show mathematically that your resistor would have a resistance of 1.00 ohms.
  
2. What do black dots within the cork represent?
  
3. Develop a method to test how the resistance of a resistor changes as the length changes. Describe how you would complete this in a lab. Collect data for at least five trials. Graph your data and briefly explain the results in 1-3 sentences.

Method			
Resistance	Resistivity	Area	Length

4. Develop a method to test how the resistance of a resistor changes as the resistivity changes. Describe how you would complete this in a lab. Collect data for at least five trials. Graph your data and briefly explain the results in 1-3 sentences.

<b>Method</b>				
<b>Resistance</b>	<b>Resistivity</b>	<b>Area</b>	<b>Length</b>	

5. Develop a method to test how the resistance of a resistor changes as the area changes. Describe how you would complete this in a lab. Collect data for at least five trials. Graph your data and briefly explain the results in 1-3 sentences.

<b>Method</b>				
<b>Resistance</b>	<b>Resistivity</b>	<b>Area</b>	<b>Length</b>	

6. Is it possible to decrease the resistance of the wire without changing the material it is made of? Justify your answer.