

Circuits lab

The goal of this lab to get more familiar with circuits and the concepts of voltage, resistance, current, and resistors in series and in parallel.

Start by setting up a circuit with one lightbulb and a voltage source.

Then two lightbulbs in series, then two lightbulbs in parallel.

Finally make a complex circuit with lightbulbs in series and in parallel.

1. When the lightbulb was on, was the circuit open or closed?
2. How did the current change as the voltage increased?
3. Describe how the intensity of the light changed as the voltage increased.

Now put 2 bulbs in series

4. Measure the voltage across each bulb using the voltmeter and record the value
5. Measure the current through the circuit using the ammeter and record the value
6. Calculate the resistance of each of the bulbs.
7. What is the equivalent resistance of the circuit?

Now put 2 bulbs in parallel

8. Measure the voltage across each bulb using the voltmeter and record the value
9. Measure the current through the circuit using the ammeter and record the value
10. Calculate the resistance of each of the bulbs.
11. What is the equivalent resistance of the circuit?

Now make a complex circuit with at least 3 bulbs

12. Measure the voltage across each bulb using the voltmeter and record the value
13. Measure the current through the circuit using the ammeter and record the value
14. Calculate the resistance of each of the bulbs.
15. What is the equivalent resistance of the circuit?