Procedures

Procedure A

1. Build a simple circuit with a power source, wires, and your desired resistor (between 50 and 200 Ω).
2. Connect the circuit to the multimeter, and set the multimeter to 200 Ω.
3. Set voltage to 2, and increase by increments of 1 or 2.
4. Use the multimeter to measure the amplitude of the current at each voltage increment.
5. Make sure to move the decimal of the measured current 3 places to the left when recording the data down.
6. Repeat steps 1-5 using the same circuit with a different resistor, a series circuit with both of the same resistors, and a parallel circuit with both of the same resistors.

Procedure B

Procedure: We had tested the resistors at first to be sure that they are at just the right amount as it said on the manilla folder, we could see if this matched if we put the resistor between the circuit, which the wires were connected to the multimeter. After we tested our 2 or 3 resistors, we were ready to perform the experiments. Before each and every experiment, we had to be able to calculate the theoretical current so we can compare it to the actual current later on. We tested at the amounts of 2, 4, 6, 8 and 10 volts for the first 3 experiments and then for the last experiment we had tested at 2, 3, 4, 5, and 6 volts. Of course, we had changed the voltage and resistors every single time. Then after all the date we could get were recorded, those being the equivalent resistance, voltage, and the current, we then had to find percent error which we had calculated mathematically.

Procedure C

1. Get all materials
2. Make circuits
3. Add resistors in circuits
4. Hook circuits into multimeter and power source
5. Turn up voltage
6. Record data

Procedure D

1. Build circuit (see Fig. 4 in Introduction) with multimeter, *desired resistor(s)**, and alligator clips.
2. Turn on powersource and set at 2 volts.
3. Record the current on the multimeter.
4. Repeat this process four more times, increasing the voltage by *increments of two*** each time.
5. Repeat entire process three more times, once with a different resistor still following figure 4 and two more times following the circuits in *figures 5 and 6****.

**You will be using two different resistors during this lab.*

***The last go-around (Fig. 6) will only increase by one volt each round.*

****Figures 5 and 6 require two resistor of different resistances.*

Procedure E

1. Gather and organize your equipment and make sure your partner(s) (assigned) are also ready to begin lab. Grab two different resistors between the amounts 50-330 ohms.
2. Use your multimeter to measure the ohms of the resistors on the setting Ωs to measure the right amount of resistance you're going to use. Have the red lead plugged into the ohms input jacket and the black lead into the COM input jacket.
3. Build a normal circuit using the clamp wires, power source with cables, multimeter with the leads on each of the clamp cables (have the red lead switched to the mA input jacket while the black lead stays in the COM input jacket), and one of the resistors attached to each other plugged in the plugs of the battery. Wait for the teacher to turn on the power to your battery.
4. Read the mA the multimeter is picking up and record it down in table number 1 on your packet.
5. Repeat steps 2 and 4 with the other resistor and on table number 2 on your packet.
6. Like step 3, but add one wire and the other resistor you used in one of the trials to make a series circuit.
7. Use the multimeter to measure the mA and record in table number 3 on your packet as the teacher is working the voltage for your battery.
8. For the last circuit, use one of the resistors and make a separate electrical current by having one of the clamp wires attach to the same lead on the multimeter and same wire output as the clamped wire for the other resistor. This should make a parallel circuit.

Procedure F

1. Set up the circuit
2. Set up and place the resistors and lamps in the correct area
3. Set the voltage
4. Check the measured current
5. Find the calculated current
6. Find the percent error