

Lab: Review of Ohm's law and simple circuits

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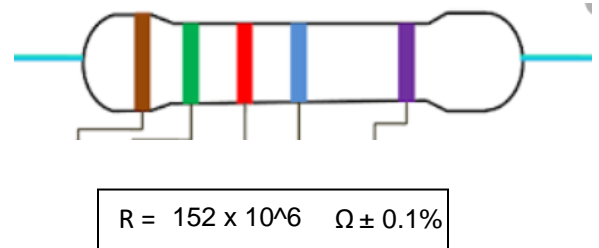
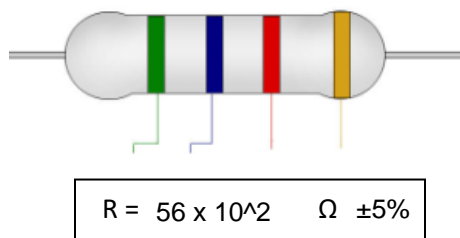
Objectives:

- 1) To know how to determine the value of a resistor using color codes.
- 2) To learn how to use Voltmeter and Ammeter.
- 3) To get familiar with the breadboard and use it to build electric circuit..

Materials: a breadboard, resistors, batteries, a multimeter

Part 1: Resistance Color Code

1. Use the resistance color code discussed in lab, find the values of the following two-color code resistors?



Part 2: Use breadboard to construct a circuit

Section 1: Identify the resistance.

1. Read the resistance of each resistor using the resistance color code table and write down the results in table 1.
2. Use the multimeter to measure the resistance of each resistor and write down the results in table 1.

Table 1

	R_1	R_2	R_3
Resistance (using color code)	$20 \times 10^2 \pm 5\%$	$10 \times 10^2 \pm 5\%$	$33 \times 10 \pm 5\%$
Measured resistance			

Section 2. Use the provided three resistors to construct a circuit with all resistors in series on the breadboard.

3. Draw a diagram of the circuit all resistors in series.

4. Calculate the current in the circuit and potential drop over each resistor (show your work).

5. Construct the circuit using the **breadboard**. Show it to your instructor before moving to the next step.

6. Measure the current in the circuit and potential drop over each resistor using multimeter. Report the results. Do the results agree with your calculation?