Objectives
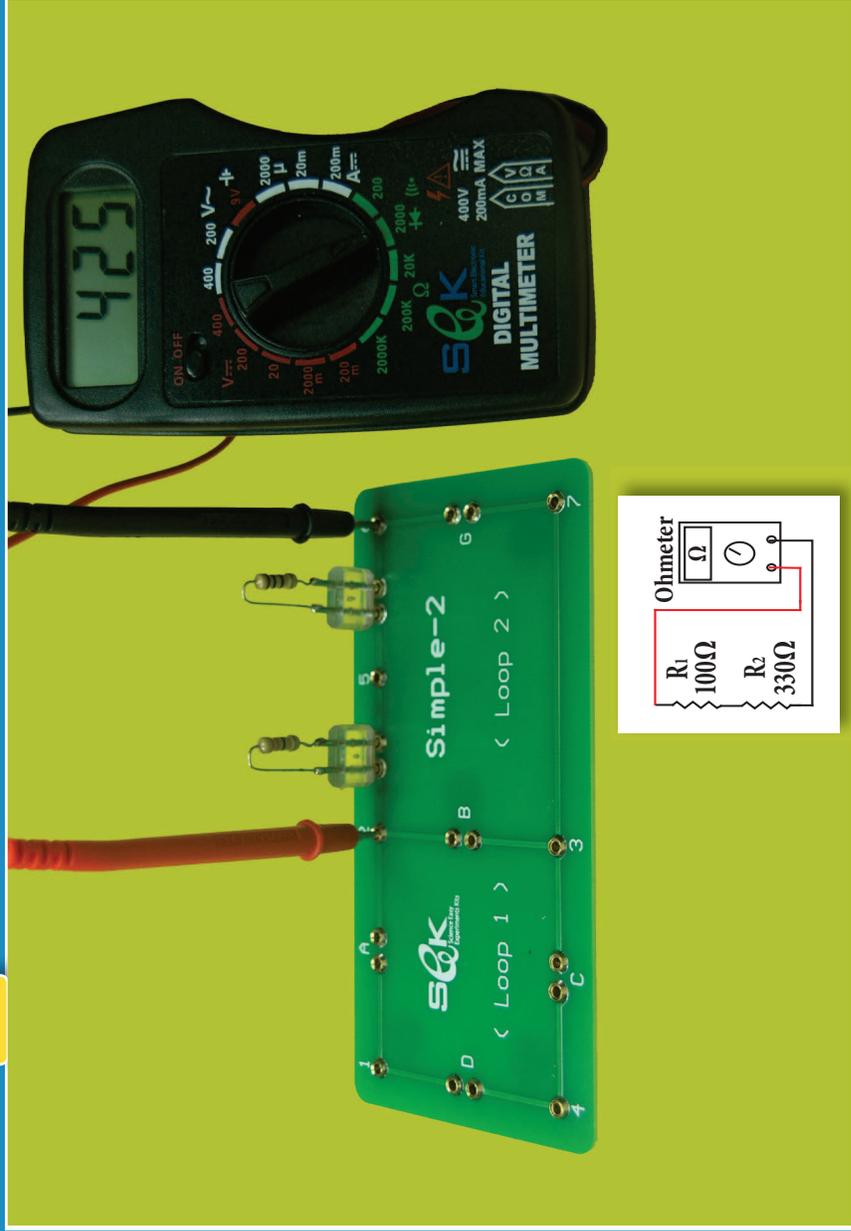
1. The student will investigate some types of resistors.
2. The student will connect resistors in series and measure their equivalent resistance.

Apparatus

- Experiments Board (Simple–2)
- DMM

- Fixed Carbon Resistors 100Ω
- Fixed Carbon Resistors 330Ω

Procedure & Conclusions

1. Use the resistor color code scheme (as shown on the Index A) to identify the resistance of resistors available in the kit.

Resistors in Series:

2. Insert resistor R_1 (100Ω) at the pair (E), and resistor R_2 (330Ω) at the pair (F), as shown in the photo.

3. Turn the selection dial of the DMM to the Ohm mode (range 2000).

4. Insert the DMM probes at points 2 & 5 to measure the resistance value of the resistor R_1.

- For R_1: Color bands are ....

  The theoretical value is .... ohm.

  The measured value is .... ohm.

5. Insert the DMM probes at points 6 & 5 to measure the resistance value of the resistor R_2.

- For R_2: Color bands are ....

  The theoretical value is .... ohm.

  The measured value is .... ohm.

6. Insert the DMM probes at points 2 & 6 to measure the equivalent resistance of the two resistors in series.

- The measured value of the equivalent resistance of the two resistors in series is .... ohm.

7. Calculate the equivalent resistance using resistors in series formula ($R_T = R_1 + R_2$) and compare the result with the above measured value.

- The calculated value of the equivalent resistance of the two resistors in series is …….. ohm.

Discussion

1. Four equal resistors are connected in series, each resistor has an ohmic value of 100 ohms, what is the expected equivalent resistance?