1.2 - Series Circuits

About series circuits

Series circuits form the most common arrangement of resistors and other components in our projects. Series circuits are useful because they link components through a shared current path. When two or more components are connected in series, one component is able to sense or control the flow of current through the other component, forming the basis of all input and output circuits.

Series circuit activity

1.	Draw a schematic diagram showing two resistors connected in series to a 6 V power supply.
	Use any two values of resistors from your kit of parts.

- 2. Build the circuit that you drew, above, on a breadboard. Do not connect the power supply yet.
- 3. Measure the resistance of each resistor.

4. Using a calculator, calculate the total series resistance.

$$R_T =$$

5. Set a power supply to 6 V. Measure the potential of the power supply.

6. Connect the power supply to the circuit and measure the potential drop across each resistor.

$$V_{R1} = V_{R2} =$$

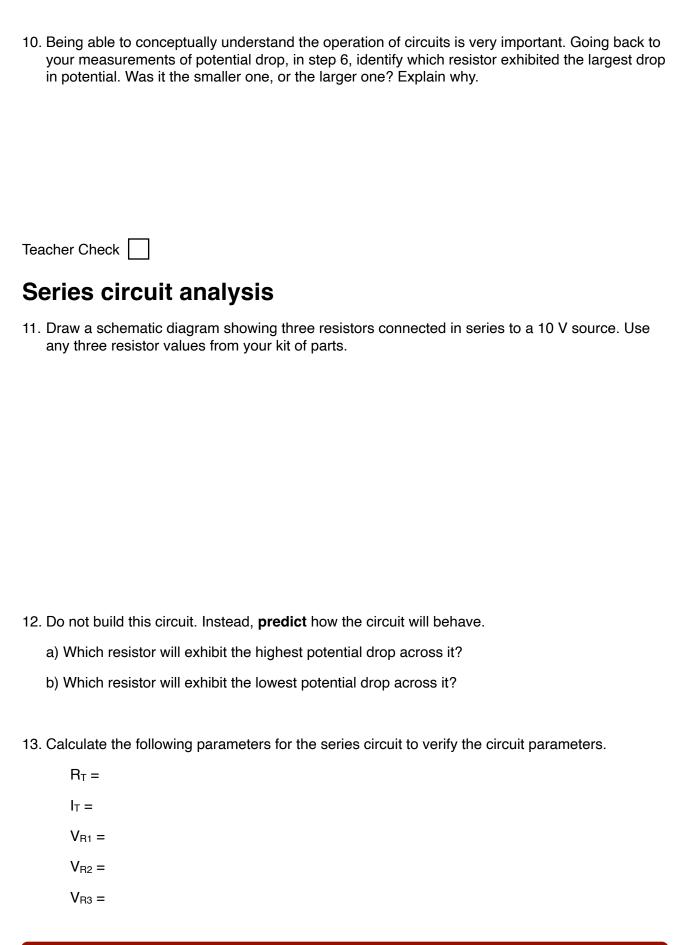
7. Calculate the total current flow (using the measured potential and resistances).

$$I_T =$$

8. Disconnect one power supply lead from your circuit. Switch the red meter lead to the current jack, and insert the multimeter in series with the power supply lead to measure the DC current.

9. Did your measured current, in step 8, agree with your calculated current in step 7?

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