



# Voltage



commonly referred to as electric potential

- The energy that each electron has as it is released into a closed circuit is called the “voltage” or “electric potential”. (for every electron that leaves the negative portion of the cell and enters the circuit another electron must enter the positive terminal)
- The unit of measurement for electric potential is the volt and the symbol is V.
- The amount of voltage that there is determines how safe things may be to touch. For example, it is safe for us to touch both ends of a 1.5 V battery, but not to put our fingers in a wall socket which carries 120 V. The energy leaving a wall outlet is 80 times greater than that leaving a battery.

## Electric Current Page 314-315

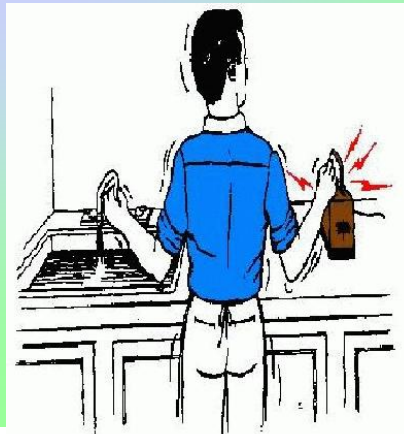
- Measure of the rate at which electric charges move past a given point in a circuit.
- The SI unit used to measure current is amperes and the symbol is A.
- We can use an ammeter connected to the circuit in series to determine the amount of electric current passing through it.

Electric Currents can create shocks much like static electricity, however the shocks produced from electric currents can be deadly or cause bodily harm.

A small amount of current can be lethal.

If you touch an electric current you become part of the circuit and the current will flow through you. You can feel a current as small as 0.002A.

At 0.016A your muscles will begin to convulse. Refer to Figure 1: pg. 314





# Electrical Resistance



- The molecules of all types of conductors impede or resist, the flow of electrons to some extent.
- This ability to slow the flow of electrons is called electrical resistance.
- Electrical resistors are devices that are used for this purpose.
- The unit for resistance is the ohm ( $\Omega$ ), and the symbol is R.

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## Answers Voltage Book Questions



- #1. a) It is necessary for electrons to move continuously around the circuit so that the electrons can release energy to the load in the circuit.  
b) Electric charges flow from the negative to the positive.
- #2. a) Electric potential is the energy each electron has  
b) The SI unit is volt, the symbol is V
- #3 The instant a dry cell is made, chemical reactions occur which allow electrons to build up on the negative terminal of the battery and a matching number of positive charges remains on the positive terminal.
- #4. There is more energy in the electrons of 120 V source than there is on the negative terminal of a 6 V source.

## pg 315 #1,5

1. a) Electric current is measure of the rate at which electric charges move past a given point in a circuit.  
b) the SI unit is ampere and the symbol used to represent it is A.

5. It is dangerous to help someone who is experiencing an electric shock, because the shock will move through the person into you.

## pg 319 #1

1. a) Electrical Resistance is the ability to stop or slow the flow of electrons through a circuit.  
b) The SI unit is the Ohm and the symbol is R.

## Attachments

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Answers Series and Parallel Circuit Assignment.notebook